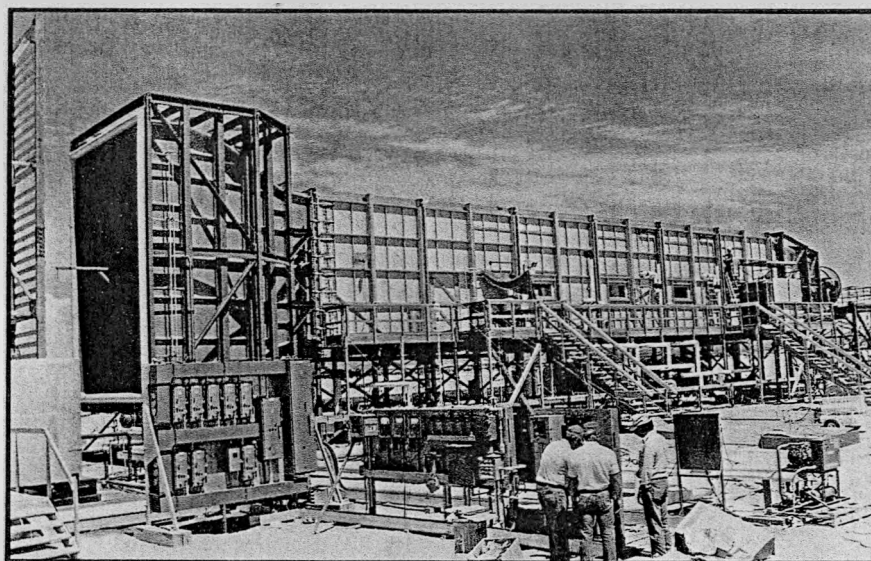
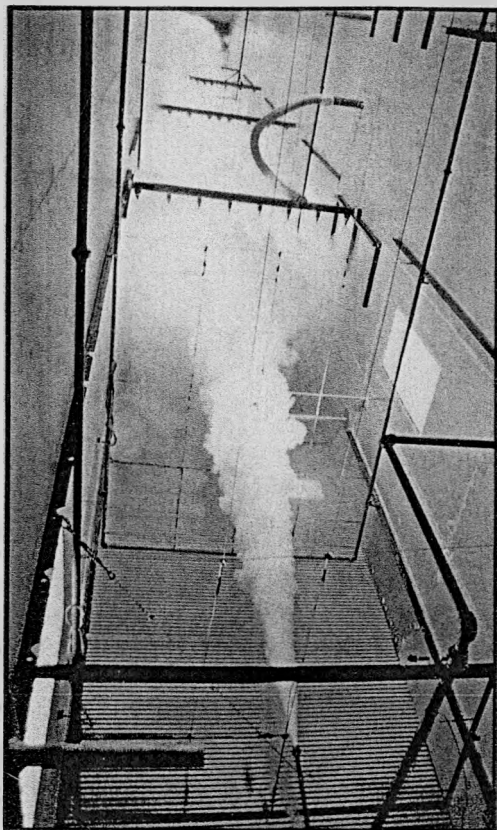




Effectiveness of Water Spray Mitigation Systems for Accidental Releases of Hydrogen Fluoride

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**Volume III
Appendix E
Water Spray Test Data**

Prepared by:

**The Industry Cooperative HF
Mitigation / Assessment Program**

Water Spray Subcommittee

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PREFACE

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This report is one of several work products generated by the Industry Cooperative HF Mitigation/Assessment Program. This ad hoc industry program began in late 1987 to study and test techniques for mitigating accidental releases of hydrogen fluoride (HF) and alkylation unit acid (AUA) and to better estimate ambient impacts from such releases.

The hazards of HF have long been recognized. Standard operating practices focused on minimizing the possibility of a release and mitigating the effects if a release should occur. These practices are continually monitored and improved to maximize safety protection based on the available technical data. This recent program targeted further improvements based on new technical data.

Twenty companies from the chemical and petroleum industries sponsored and funded this program. These include:

Allied-Signal	Elf Aquitaine	Shell Internationale
Amoco	Exxon	Sun/Suncor
Ashland	Kerr-McGee	Tenneco
BP	Marathon	Texaco
Chevron	Mobil	Unocal
Conoco/Dupont	Phillips	3M
Dow	Saras	

K. W. Schatz, Mobil Research and Development Corporation (MRDC) and R. P. Koopman, Lawrence Livermore National Laboratories (LLNL) prepared this document as part of the work for the Water Spray Subcommittee.

The cooperation of the members of the following groups is gratefully acknowledged:

1. Allied-Signal for providing anhydrous hydrogen fluoride, analytical equipment and personnel.
2. Chevron for providing personnel.
3. Colorado State University, for consulting on scale-up, flow chamber design and flow chamber testing.
4. Conoco/DuPont, for providing personnel, safety training and data modeling.
5. Dow Chemical for providing personnel.
6. Exxon R&E for providing personnel.

7. Industry cooperative HF Mitigation/Assessment program sponsors for funding the program.
8. Insitec for conducting the aerosol measurements.
9. Lawrence Livermore National Laboratories for providing personnel and services.
10. Mobil Central Research Laboratories for providing laboratory space and consulting on experiments.
11. Mobil Refineries, Paulsboro, NJ, and Joliet, IL, for providing alkylation unit acid.
12. Mobil R&D Corp., for providing personnel and services.
13. Phillips for providing personnel.
14. United Engineers & Constructors, Stearns Roger Division, Denver, for engineering, procurement and construction of the flow chamber.
15. U. S. Department of Energy and contractors EG&G and ReeCo for providing the test site and services.

The results of this study are being published with the intent of making them available to any interested party. The deliverables of the program consist of a report with several appendices, a supplementary report (with a planned release date of third quarter 1989), a volume of still pictures, video tapes and magnetic data tapes. These can be obtained through the U.S. Department of Commerce, National Technical Information Services (NTIS), Springfield, Virginia 22161. Anyone may use these results, subject to the rights of others, to contribute to the further maximization of safety protection. However, neither the sponsors for this work, nor their contractors, accept any legal liability or responsibility whatsoever for the consequences of its use or misuse.

Water Spray Test Data

1. Introduction

As a basis for modeling the dynamic interaction of the HF jet and the water spray curtain of the field test, experiments with spray nozzles were carried out in the laboratory of Bete Fog Nozzle, Inc. during February of 1989.

For different geometrical arrangements the water flux, the particle size distribution and the particle velocities were measured. For two different nozzle types the amount of entrained air was measured using a digital pocket anemometer, Model No. N-05951-75 by Davis Instruments, San Leandro, CA.

The amount of drop-out water at the wall was measured for 8 ft. and 16 ft. high walls and is described in detail in the main report, Volume I, Chapter 3.73.2.

In the following chapters measurements of the water flux, the particle size distributions and velocities, and the air entrainment are listed.

2. Measurements of Water Flux

Flux measurements were carried out by collecting water over a specified time in 1 in. diameter glass tubes with ball floats. 48 tubes were arranged, on 1 in. center to center pitch in a line over a 4 ft. distance. The tube arrangement was mounted on a carriage with computer controlled x-y positioning along tracks on the floor. The + x coordinate points to the right and the + y towards the observer. (Figure E2-1) Measurements along any cord of a horizontal plane through the spray curtain could thus be made in 48 in. increments. Different distances of the plane from the spray nozzle(s) were set up by moving the spray header to different vertical positions along the z-coordinate while keeping the carriage at floor level. The +z coordinate points up from the floor to the spray header.

At the end of a measurement period the array of tubes was capped to prevent further water collection. The tubes and ball floats were then displayed via TV camera on a screen. A software program digitized the float positions and stored the data in memory. Plots or tables could then be generated from the data.

In the following figures the measured flux data are plotted in gpm/sq ft. vs. the radial distance $\pm x$ (in.) from the center point of the spray header. The center point of the header coincided with the center line of the nozzle when one nozzle was used. It fell between nozzles 1 and 2 for two nozzles and between 4 and 5 for eight nozzles in the header. In all figures the mill end (or start of) the nozzle spiral points 180° away from the observer which is the -y direction.

3. Definitions Used in Test Data Processing

3.1 Definitions of Common Averages

The following definitions are given for the most frequently used mean and median diameters:

Arithmetic Mean Diameter - The average of the diameters of all the droplets in the spray sample.

Surface Mean Diameter - The diameter of a droplet whose surface area, if multiplied by the total number of droplets, will equal the total surface area of the sample.

Volume Mean Diameter - The diameter of a droplet whose volume, if multiplied by the total number of droplets, will equal the total volume of the sample.

Sauter Mean Diameter - The diameter of a droplet whose ratio of volume to surface area is equal to that of the complete spray sample.

Mass (Volume) Median Diameter - The diameter which divides the mass (or volume) of the spray into two equal halves. (Thus half of the total mass, or volume, is made up of droplets with diameters smaller; the other half with diameters larger than this number.)

Of these diameter definitions, mass (volume) median diameter is the largest and arithmetic mean the smallest. Sauter mean diameter will frequently be about 80% of the mass (volume) median diameter.

3.2. Quantities Reported in Drop Size Distribution Table

a. Number of drops:

Straight count of the number of drops in the sample falling into that bin.

b. Percentage occurrence:

The ratio of the number of drops in that bin to the total number of drops in the sample, times 100.

c. Percent surface area:

The ratio of the sum of the squares of the diameters for all drops in the bin to the same sum for all drops in the sample:

$$\sum D_i^2 / \sum D_j^2$$

Bin Spl

d. Percent volume:

The ratio of the sum of the cubes of the diameters for all drops in the bin to same sum for all drops in the sample:

$$\frac{\sum_{\text{Bin}} D^3_i}{\sum_{\text{Spl}} D^3_j}$$

e. Cumulative volume percentage:

A running total of the percent volume for all bins already printed.

f. Class check:

Using the following notations:

N_k = number of drops in k^{th} bin

D_k^3 = sum of cubes of diameters in k^{th} bin

D_{kub} = upper bound diameter for k^{th} bin

D_{k1b} = lower bound diameter for k^{th} bin

then the class check is:

$$\frac{D_{kub} - D_{k1b}}{D_{kub} + D_{k1b}} * \frac{N_k D_k^3}{\sum_{\text{Spl}} D_k^3}$$

3.3. Quantities Reported in Table of Means

Using the notation D_k , D_k^2 , D_k^3 , to indicate powers of the diameters in the k^{th} bin and N as the number of drops in the sample, these quantities are found from:

a. Arithmetic mean: $\sum_k D_k / N$

b. Surface mean: $[\sum_k D_k^2 / N]^{1/2}$

c. Volume mean: $[\sum_k D_k^3 / N]^{1/3}$

d. Sauter mean: $\sum_k D_k^3 / \sum_k D_k^2$

e. Weight mean:
$$\frac{\sum_k D_k^4}{\sum_k D_k^3}$$

f. Sample size check:
$$\frac{D_{\max}^3}{\sum_k D_k^3}$$

where $D_{\max}$ is the maximum diameter found

g. Deviation:
$$\frac{\sum_k [D_{v0.5} - (D_{kub} + D_{k1b})/2] N_k}{\sum_k N_k D_{v0.5}}$$

h. Relative span:
$$(D_{v0.9} - D_{v0.1}) / D_{v0.5}$$

In g and h, the functions $D_{v0.x}$ are defined in the following way:

The sum $\sum_k N_k D_k^3$ is formed, starting from the smallest bin size, up to that bin for which the sum is less than or equal to $X \sum_{Spl} D_k^3$.

Within the last bin an extrapolation is performed to find the diameter such that equality holds. Physically, it computes that diameter below which X% of the droplet volume is accumulated.

The method to evaluate the flux data is called the Total Flux Deviation (TFD) method, and can be described as follows:

1. The extreme edges of the pattern are defined as occurring where there is any non-zero reading in the tubes.
2. Using this information, an actual spray pattern center and maximum coverage diameter are determined.
3. For this area, an average spray density is calculated.
4. The effective pattern diameter is then redefined as the diameter where the spray density is equal to the Evaluation Threshold, ET, typically set at 50% of the average density. Steps 3 and 4 are repeated for this new diameter, and the process is repeated until the diameter change converges to zero (usually 1 or 2 iterations).
5. For each tube, a Deviation Volume (DV) is calculated.

The DV represented by each tube is defined as the absolute value of the [difference between the average spray density and the local spray density], multiplied by the ring area represented by each tube.

6. The effective Total Volume (TV) of the spray is the product of the average spray density and the effective area of the spray.
7. Dividing the DV by the TV and multiplying by 100 gives the Flux Deviation (FD) percentage for each tube.
8. The sum of the FD's for all the tubes is called the Total Flux Deviation (TFD) for the nozzle.

The TFD is the percentage of the flow which deviates from a perfectly uniform distribution over the effective coverage area.

If pattern tests are made on more than one axis, the TFD for the nozzle will be the average of the TFD's for all axes.

The TFD for a nozzle with a perfectly uniform spray distribution will be zero. Real world nozzles will have TFD's which may range from 3% to 30%, although there is no theoretical reason that the TFD couldn't be above or below this range.

In the following Table E2-1 pertinent information is listed for the flux profiles, shown in Figures E2-01 to E2-11. Figure E2-12 was created by computing the superimposed profiles of 8 single nozzles, offset in increments of 1 ft. It compares directly with Figure E2-06, the actual flux profile from 8 nozzles. The comparison demonstrates that there is interaction between the nozzles and that a multi-nozzle curtain cannot be simulated from single nozzle data.

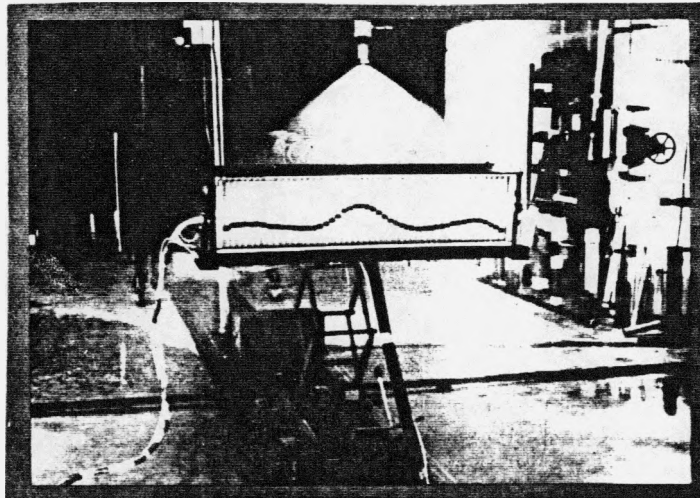


Figure E2-1
Water Flux Measurements

Table E2-1
Water Flux Profiles

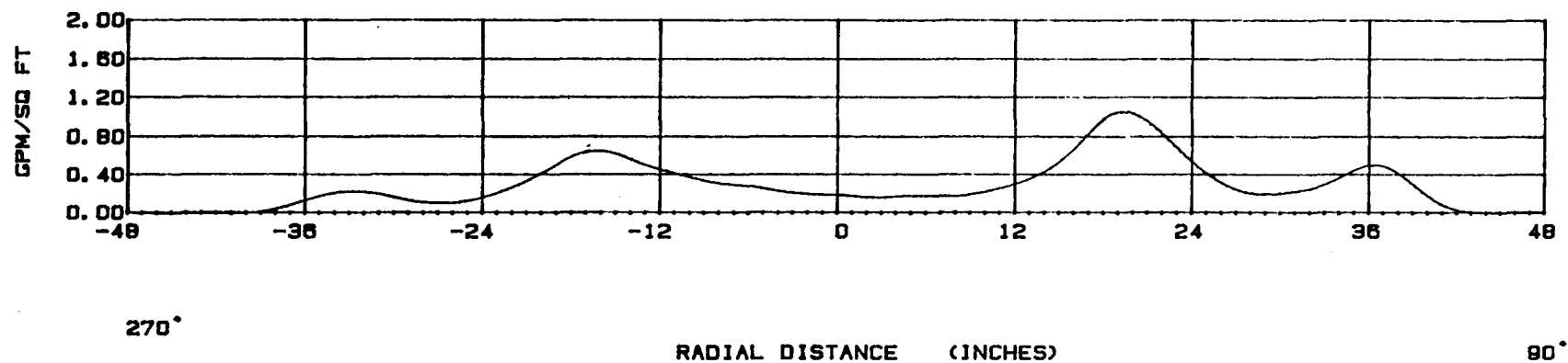
Fig. No.	No. of Nozzles	Type of Nozzle	Position y, in.	Distance z, in.	Scale, gpm/sq. ft.
E2-01	1	TF-16FCN	0	48.0	0-2
E2-02	1	TF-16FCN	0	96.0	0-1
E2-03	1	TF-16FCN	0	192.0	0-1
E2-04	2	TF-16FCN	0	48.0	0-3
E2-05	2	TF-16FCN	0	96.0	0-1
E2-06	8	TF-16FCN	0	48.0	0-6
E2-07	8	TF-16FCN	+18.0	48.0	0-6
E2-08	8	TF-16FCN	+36.0	48.0	0-6
E2-09	8	TF-16FCN	0	96.0	0-6
E2-10	8	TF-16FCN	0	192.0	0-5
E2-11	8	TF-20FCN	0	96.0	0-10
E2-12	8*1 ¹⁾	TF-16FCN	0	48.0	0-6

Note: 1) Figure E12 was created by superimposing the profile of Figure E2-01, offset sideways in 8 x 12 in. increments.

Figure E2-01

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE TF16FCN
DATE 2/20/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

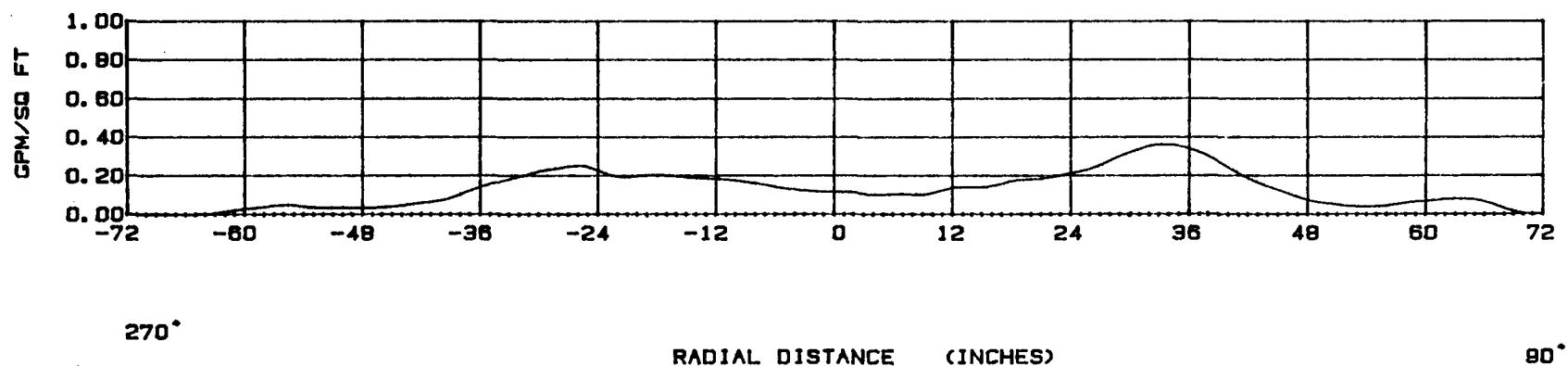


P 184
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 75.0 IN
EFFECTIVE ANGLE 78.0 DEG
AVERAGE FLUX DENSITY 0.4 GPM/SQ FT
FLUX DEVIATION 51.8 %

Figure E2-02

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE TF16FCN
DATE 2/20/89
PRESSURE 56.0 PSI
DISTANCE 96.0 INCHES

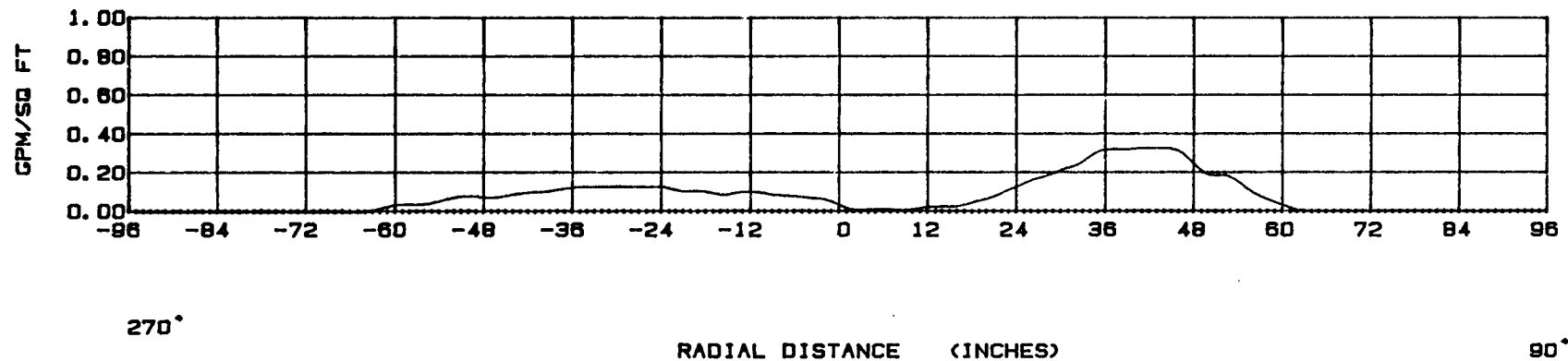


P 185
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 106.0 IN
EFFECTIVE ANGLE 57.8 DEG
AVERAGE FLUX DENSITY 0.2 GPM/SQ FT
FLUX DEVIATION 46.4 %

Figure E2-03

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE TF16FCN
DATE 2/23/89
PRESSURE 56.0 PSI
DISTANCE 192.0 INCHES



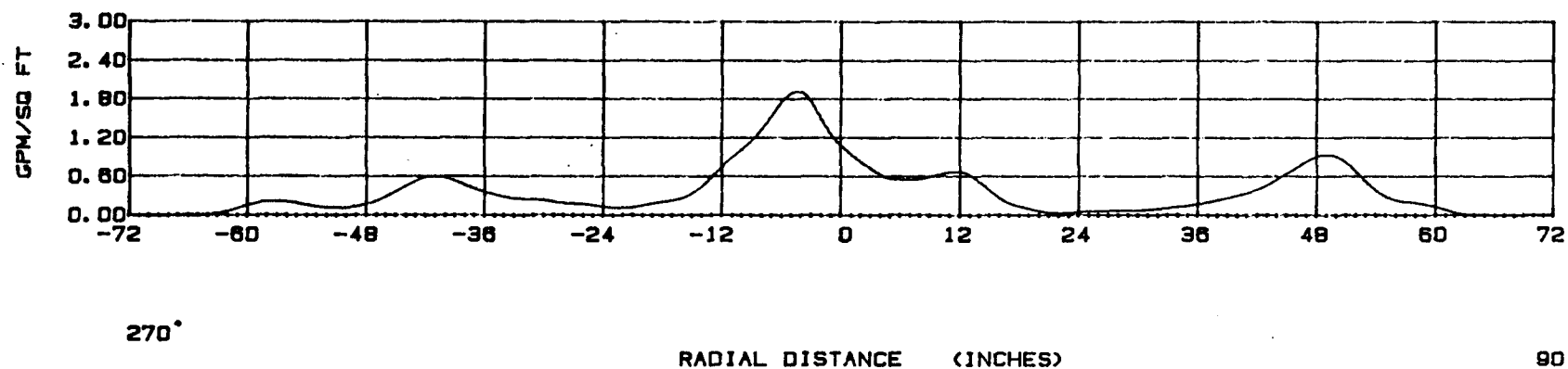
P 103
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 106.0 IN
EFFECTIVE ANGLE 30.9 DEG
AVERAGE FLUX DENSITY 0.2 GPM/SQ FT
FLUX DEVIATION 47.2 %

Figure E2-04

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (2) TF16FCN
DATE 2/20/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

2 NOZZLES 4 FT. APART.
TESTS DONE AT CL. OF ARRAY.



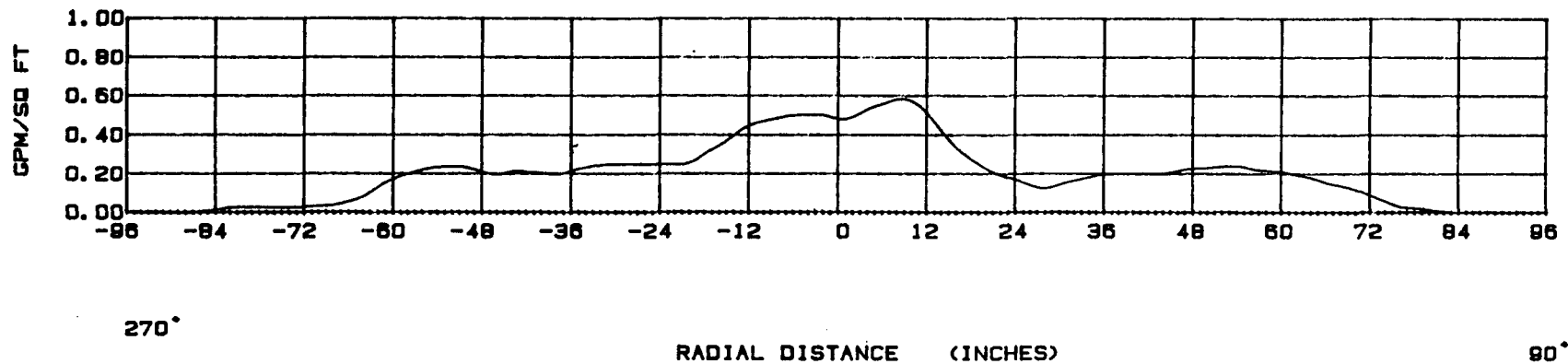
P 188
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 119.0 IN
EFFECTIVE ANGLE 102.2 DEG
AVERAGE FLUX DENSITY 0.4 GPM/SQ FT
FLUX DEVIATION 62.6 %

Figure E2-05

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (2) TF16FCN
DATE 2/20/89
PRESSURE 56.0 PSI
DISTANCE 96.0 INCHES

2 NOZZLE ARRAY
TESTS FROM CL. OF ARRAY.



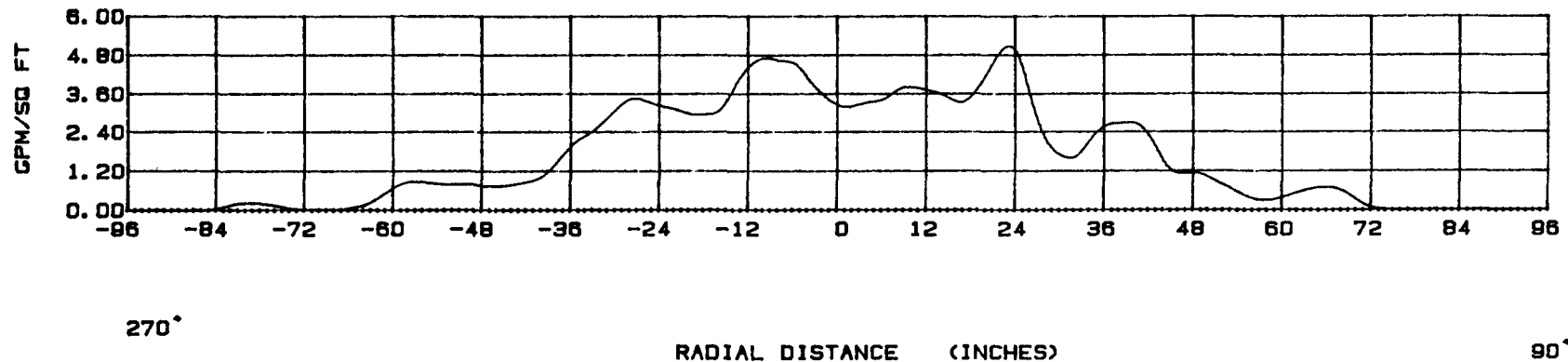
P 187
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 133.0 IN
EFFECTIVE ANGLE 88.4 DEG
AVERAGE FLUX DENSITY 0.2 GPM/SQ FT
FLUX DEVIATION 20.2 %

Figure E2-06

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF16FCN
DATE 2/22/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

8 NOZZLES 1 FT. APART.
TESTS FROM CL. OF ARRAY.



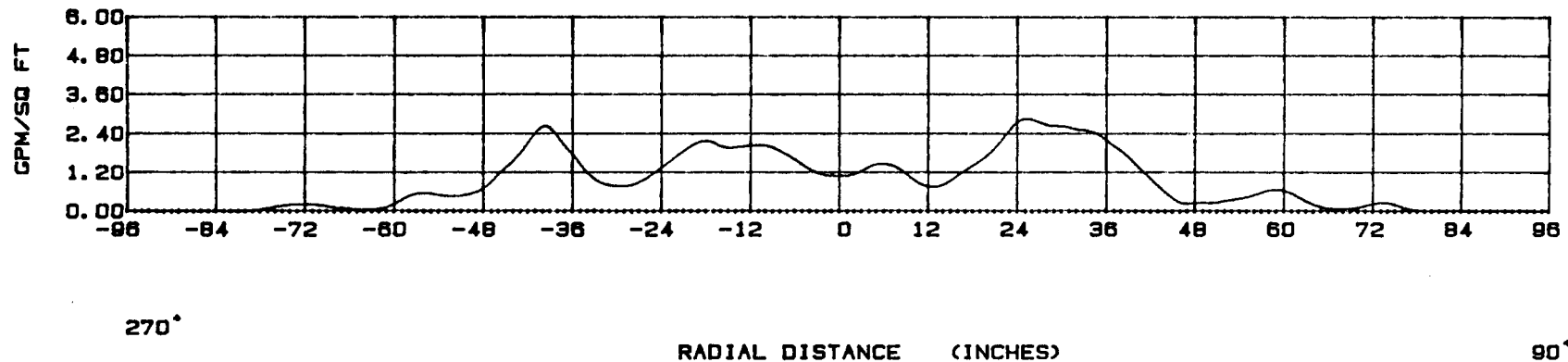
P 188
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 81.0 IN
EFFECTIVE ANGLE 80.3 DEG
AVERAGE FLUX DENSITY 3.0 GPM/SQ FT
FLUX DEVIATION 24.1 %

Figure E2-07

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF16FCN.
DATE 2/23/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

8 NOZZLES 1 FT. APART.
TESTS FROM CL. OF ARRAY.
Y AXIS= +18".



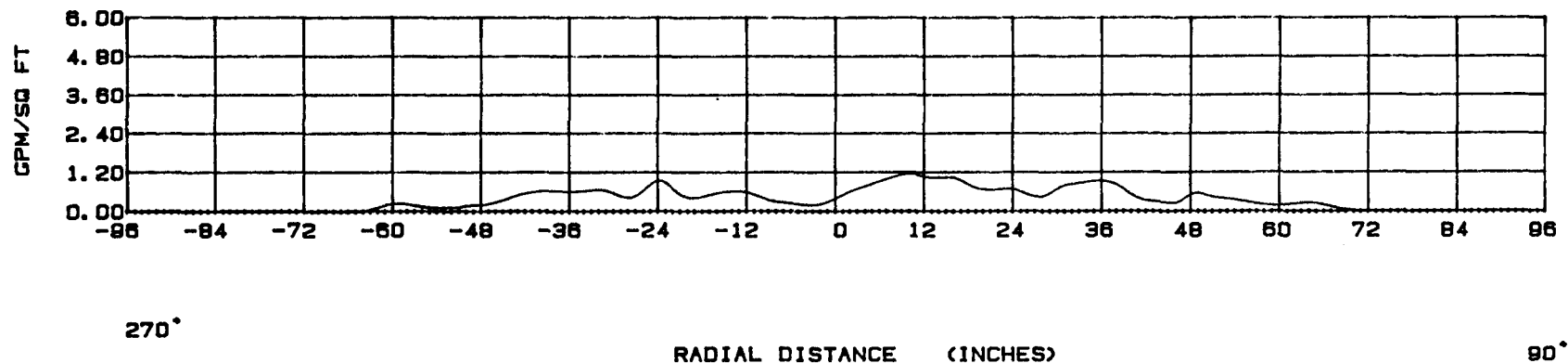
P 101
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 108.0 IN
EFFECTIVE ANGLE 96.7 DEG
AVERAGE FLUX DENSITY 1.4 GPM/SQ FT
FLUX DEVIATION 51.2 %

Figure E2-08

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF16FCN
DATE 2/23/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

8 NOZZLES 1 FT. APART
TESTS FROM CL. OF ARRAY.
Y AXIS +36".



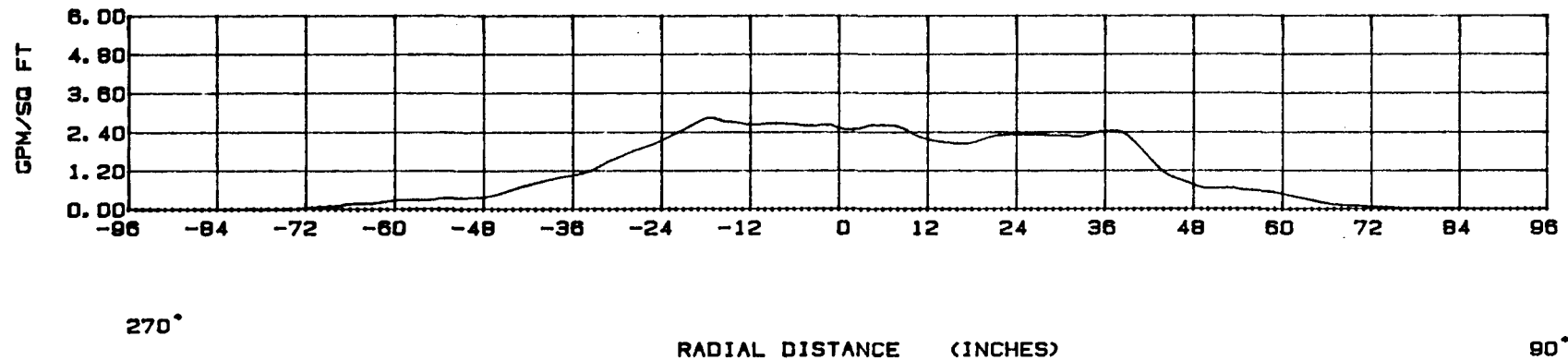
P 190
EVALUATION THRESHOLD 50X
EFFECTIVE DIAMETER 127.0 IN
EFFECTIVE ANGLE 105.8 DEG
AVERAGE FLUX DENSITY 0.4 GPM/SQ FT
FLUX DEVIATION 50.9 %

Figure E2-09

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF16FCN.
DATE 2/23/89
PRESSURE 56.0 PSI
DISTANCE 96.0 INCHES

8 NOZZLES 1 FT. APART.
TESTS FROM CL. OF ARRAY.



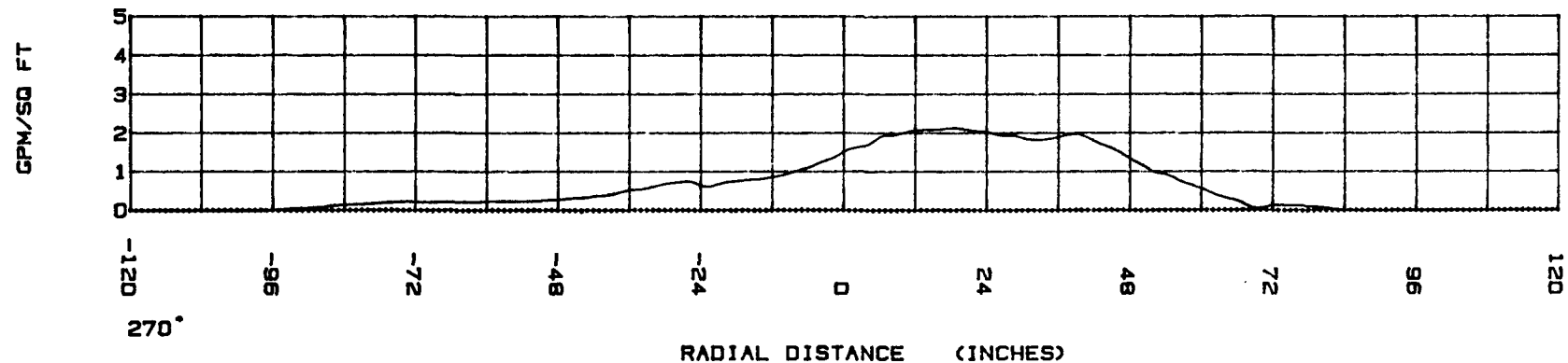
P 102
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 85.0 IN
EFFECTIVE ANGLE 47.8 DEG
AVERAGE FLUX DENSITY 2.0 GPM/SQ FT
FLUX DEVIATION 25.2 %

Figure E2-10

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF16FCN.
DATE 2/22/89
PRESSURE 56.0 PSI
DISTANCE 192.0 INCHES

8 NOZZLES 1 FT. APART.
TESTS FROM CL. OF ARRAY.

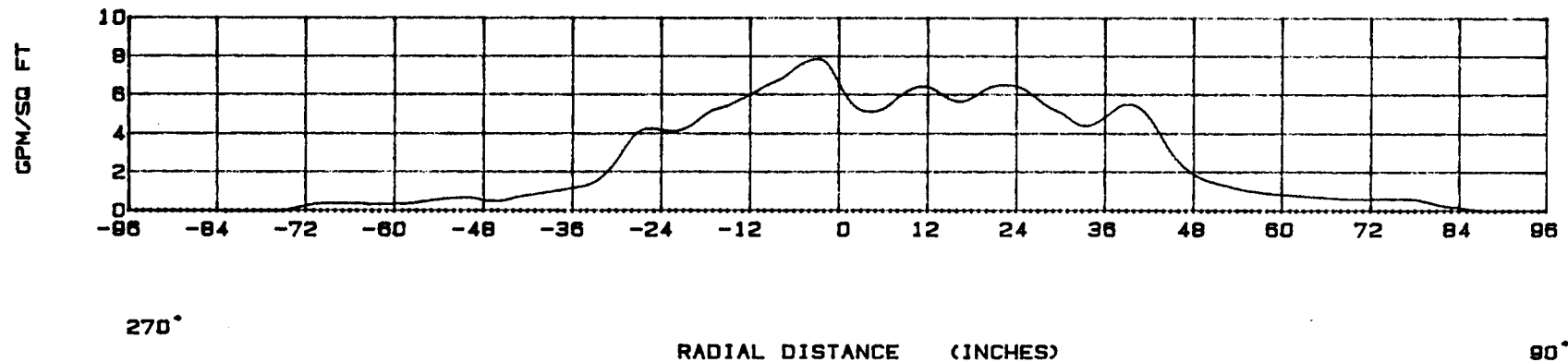


P 189
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 96.0 IN
EFFECTIVE ANGLE 28.1 DEG
AVERAGE FLUX DENSITY 1.1 GPM/SQ FT
FLUX DEVIATION 40.2 %

Figure E2-11

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE (8) TF20FCN
DATE 2/24/89
PRESSURE 79.0 PSI
DISTANCE 96.0 INCHES



P 184
EVALUATION THRESHOLD 50%
EFFECTIVE DIAMETER 75.0 IN
EFFECTIVE ANGLE 42.7 DEG
AVERAGE FLUX DENSITY 5.2 GPM/SQ FT
FLUX DEVIATION 17.4 %

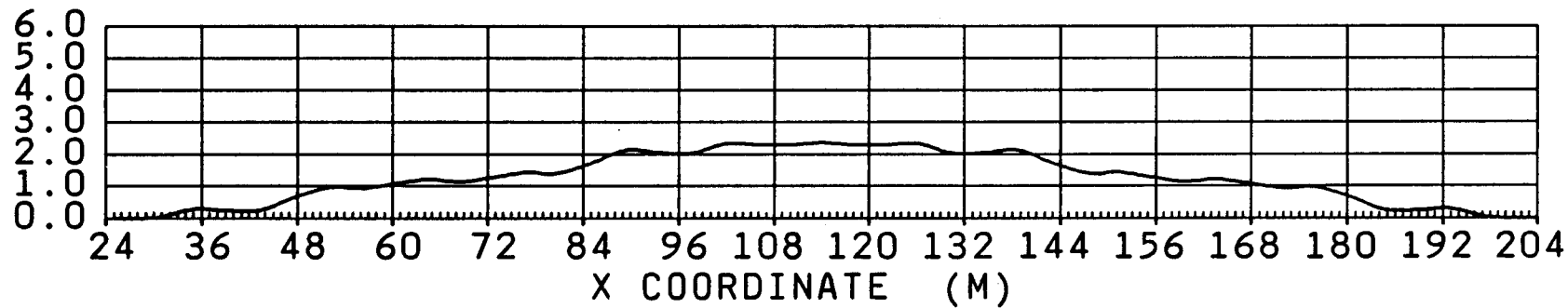
Figure E2-12

BETE FOG NOZZLE, INC.
SPRAY DISTRIBUTION CHART

NOZZLE TF16FCN
DATE 2/20/89
PRESSURE 56.0 PSI
DISTANCE 48.0 INCHES

8 NOZZLE ARRAY

GPM/SQ FT



Y COORDINATE = 0.0 (IN)

NOZZLE LOCATIONS

X	Y	X	Y
72.0	0.0		
84.0	0.0		
96.0	0.0		
108.0	0.0		
120.0	0.0		
132.0	0.0		
144.0	0.0		
156.0	0.0		

3. Particle Size Distributions

Particle size distributions were measured by evaluating large numbers of TV pictures, obtained from water spraying through a 1/2 in. wide slot in front of the camera. Perpendicular to the spray and set back in a water-proof case, the TV camera recorded pictures of droplets against a background illuminated by a strobe light. The pictures were transmitted to a black and white TV screen and evaluated digitally by computer. For each distribution, typically 200 frames were evaluated. (Figure E3-1)

In the following Table E3-01 the Tables of particle size distributions are summarized. Each individual table lists various mean particle diameters, the diameter distribution and some statistical information. The Centerline Coord. is the vertical distance Z from the point of measurement to the nozzle. The Radial Coord. is the distance in direction x, with Cylindrical Angle 90 Deg. meaning +x and 270 Deg. meaning -x. The Azimuthal Angle is calculated from the tangents of the Radial Coord. over the Centerline Coord.

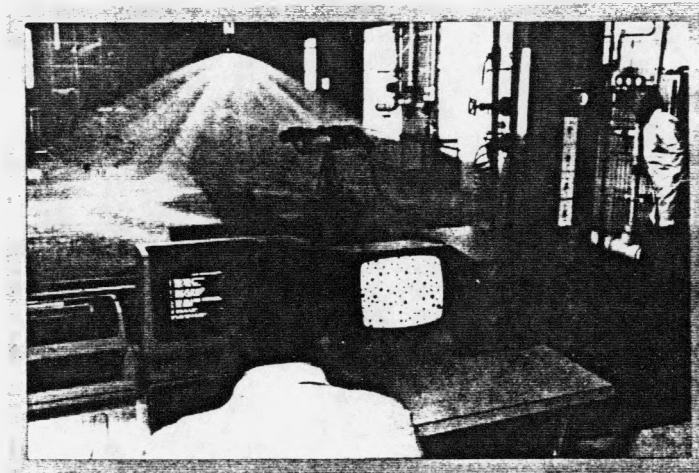


Figure E3-1
Particle Size Analyzer

Table E3-01

Summary of Particle Size Distribution Tables

Table No.	No. of Nozzles	Type of Nozzle	Radical Coord. x, in.	Position y, in.	Centerline Coord. z, in.
E3-02	1	TF-16FCN	-20	0	48
E3-03	1	TF-16FCN	-10	0	48
E3-04	1	TF-16FCN	0	0	48
E3-05	1	TF-16FCN	+10	0	48
E3-06	1	TF-16FCN	+20	0	48
E3-07	1	TF-16FCN	-20 to +20	0	48
E3-08	1	TF-16FCN	-20	0	48
E3-09	1	TF-16FCN	-10	0	48
E3-10	1	TF-16FCN	0	0	48
E3-11	1	TF-16FCN	+10	0	48
E3-12	1	TF-16FCN	+20	0	48
E3-13	1	TF-16FCN	-20 to +20	0	48
E3-14	1	TF-16FCN	-20 to +20	0	48
E3-15	1	TF-16FCN	-36	0	96
E3-16	1	TF-16FCN	-18	0	96
E3-17	1	TF-16FCN	0	0	96
E3-18	1	TF-16FCN	+18	0	96
E3-19	1	TF-16FCN	+36	0	96
E3-20	1	TF-16FCN	-36 to +36	0	96
E3-21	1	TF-16FCN	-36	0	96
E3-22	1	TF-16FCN	-18	0	96
E3-23	1	TF-16FCN	0	0	96
E3-24	1	TF-16FCN	+18	0	96
E3-25	1	TF-16FCN	+36	0	96
E3-26	1	TF-16FCN	-36 to +36	0	96
E3-27	1	TF-16FCN	-36 to +36	0	96
E3-28	2	TF-16FCN	-60	0	48
E3-29	2	TF-16FCN	-44	0	48
E3-30	2	TF-16FCN	-42	0	48
E3-31	2	TF-16FCN	-34	0	48
E3-32	2	TF-16FCN	-24	0	48
E3-33	2	TF-16FCN	-14	0	48
E3-34	2	TF-16FCN	0	0	48
E3-35	2	TF-16FCN	+14	0	48
E3-36	2	TF-16FCN	+24	0	48
E3-37	2	TF-16FCN	+34	0	48
E3-38	2	TF-16FCN	+42	0	48
E3-39	2	TF-16FCN	+44	0	48

Table E3-01

Summary of Particle Size Distribution Tables
(cont'd)

Table No.	No. of Nozzles	Type of Nozzle	Radical Coord. x, in.	Position y, in.	Centerline Coord. z, in.
E3-40	2	TF-16FCN	+60	0	48
E3-41	2	TF-16FCN	-60 to +60	0	48
E3-42	2	TF-16FCN	-60 to +60	0	48
E3-43	2	TF-16FCN	-60	0	96
E3-44	2	TF-16FCN	-42	0	96
E3-45	2	TF-16FCN	-24	0	96
E3-46	2	TF-16FCN	-6	0	96
E3-47	2	TF-16FCN	+6	0	96
E3-48	2	TF-16FCN	+24	0	96
E3-49	2	TF-16FCN	+42	0	96
E3-50	2	TF-16FCN	+60	0	96
E3-51	2	TF-16FCN	-60 to +60	0	96
E3-52	4	TF-16FCN	-78	0	96
E3-53	4	TF-16FCN	-54	0	96
E3-54	4	TF-16FCN	-30	0	96
E3-55	4	TF-16FCN	0	0	96
E3-56	4	TF-16FCN	+30	0	96
E3-57	4	TF-16FCN	+54	0	96
E3-58	4	TF-16FCN	+78	0	96
E3-59	4	TF-16FCN	-78 to +78	0	96
E3-60	8	TF-16FCN	-54	-36	48
E3-61	8	TF-16FCN	-42	-36	48
E3-62	8	TF-16FCN	-30	-36	48
E3-63	8	TF-16FCN	-18	-36	48
E3-64	8	TF-16FCN	0	-36	48
E3-65	8	TF-16FCN	+18	-36	48
E3-66	8	TF-16FCN	+30	-36	48
E3-67	8	TF-16FCN	+42	-36	48
E3-68	8	TF-16FCN	+54	-36	48
E3-69	8	TF-16FCN	-54 to +54	-36	48
E3-70	8	TF-16FCN	-78	-18	48
E3-71	8	TF-16FCN	-66	-18	48
E3-72	8	TF-16FCN	-54	-18	48
E3-73	8	TF-16FCN	-42	-18	48
E3-74	8	TF-16FCN	-30	-18	48
E3-75	8	TF-16FCN	-18	-18	48
E3-76	8	TF-16FCN	0	-18	48
E3-77	8	TF-16FCN	+18	-18	48
E3-78	8	TF-16FCN	+30	-18	48
E3-79	8	TF-16FCN	+42	-18	48
E3-80	8	TF-16FCN	+54	-18	48

Table E3-01

Summary of Particle Size Distribution Tables
(cont'd)

Table No.	No. of Nozzles	Type of Nozzle	Radical Coord. x, in.	Position y, in.	Centerline Coord. z, in.
E3-81	8	TF-16FCN	+66	-18	48
E3-82	8	TF-16FCN	+78	-18	48
E3-83	8	TF-16FCN	-78 to +78	-18	48
E3-84	8	TF-16FCN	-78	0	48
E3-85	8	TF-16FCN	-66	0	48
E3-86	8	TF-16FCN	-54	0	48
E3-87	8	TF-16FCN	-42	0	48
E3-88	8	TF-16FCN	-30	0	48
E3-89	8	TF-16FCN	-18	0	48
E3-90	8	TF-16FCN	0	0	48
E3-91	8	TF-16FCN	+18	0	48
E3-92	8	TF-16FCN	+30	0	48
E3-93	8	TF-16FCN	+42	0	48
E3-94	8	TF-16FCN	+54	0	48
E3-95	8	TF-16FCN	+66	0	48
E3-96	8	TF-16FCN	+78	0	48
E3-97	8	TF-16FCN	-78 to +78	0	48
E3-98	8	TF-16FCN	-78	+18	48
E3-99	8	TF-16FCN	-66	+18	48
E3-100	8	TF-16FCN	-54	+18	48
E3-101	8	TF-16FCN	-42	+18	48
E3-102	8	TF-16FCN	-30	+18	48
E3-103	8	TF-16FCN	-18	+18	48
E3-104	8	TF-16FCN	0	+18	48
E3-105	8	TF-16FCN	+18	+18	48
E3-106	8	TF-16FCN	+30	+18	48
E3-107	8	TF-16FCN	+42	+18	48
E3-108	8	TF-16FCN	+54	+18	48
E3-109	8	TF-16FCN	+66	+18	48
E3-110	8	TF-16FCN	+78	+18	48
E3-111	8	TF-16FCN	-78 to +78	+18	48
E3-112	8	TF-16FCN	-54	+36	48
E3-113	8	TF-16FCN	-42	+36	48
E3-114	8	TF-16FCN	-30	+36	48
E3-115	8	TF-16FCN	-18	+36	48
E3-116	8	TF-16FCN	0	+36	48
E3-117	8	TF-16FCN	+18	+36	48
E3-118	8	TF-16FCN	+30	+36	48
E3-119	8	TF-16FCN	+42	+36	48
E3-120	8	TF-16FCN	+54	+36	48
E3-121	8	TF-16FCN	-54 to +54	+36	48

Table E3-01Summary of Particle Size Distribution Tables
(cont'd)

Table No.	No. of Nozzles	Type of Nozzle	Radical Coord. x, in.	Position y, in.	Centerline Coord. z, in.
E3-122	8	TF-16FCN	-102	0	96
E3-123	8	TF-16FCN	-78	0	96
E3-124	8	TF-16FCN	-54	0	96
E3-125	8	TF-16FCN	-30	0	96
E3-126	8	TF-16FCN	0	0	96
E3-127	8	TF-16FCN	+30	0	96
E3-128	8	TF-16FCN	+54	0	96
E3-129	8	TF-16FCN	+78	0	96
E3-130	8	TF-16FCN	+102	0	96
E3-131	8	TF-16FCN	-102 to +102	0	96
E3-132	8	TF-20FCN	-78	0	96
E3-133	8	TF-20FCN	-54	0	96
E3-134	8	TF-20FCN	-30	0	96
E3-135	8	TF-20FCN	0	0	96
E3-136	8	TF-20FCN	+30	0	96
E3-137	8	TF-20FCN	+54	0	96
E3-138	8	TF-20FCN	+78	0	96
E3-139	8	TF-20FCN	-78 to +78	0	96

Table E3-02

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TEST NUMBER 10127

PRESSURE 56.0 PSI

CENTERLINE COORD 48.0 INCHES

RADIAL COORD 20.0 INCHES

DIST FROM NOZZLE 52.0 INCHES

AZIMUTHAL ANGLE 22.6 DEG

CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.23	0.01	0.00	0.00	0.000
25.1 - 31.6	6	1.85	0.03	0.00	0.00	0.000
31.6 - 39.8	10	3.09	0.08	0.01	0.01	0.000
39.8 - 50.1	6	1.85	0.07	0.01	0.02	0.000
50.1 - 63.1	5	1.54	0.09	0.01	0.03	0.000
63.1 - 79.4	20	6.17	0.53	0.11	0.14	0.000
79.4 - 100.0	23	7.10	0.97	0.25	0.39	0.000
100.0 - 125.9	23	7.10	1.49	0.47	0.86	0.001
125.9 - 158.5	29	8.95	3.11	1.26	2.12	0.001
158.5 - 199.5	39	12.04	6.83	3.55	5.67	0.004
199.5 - 251.2	57	17.59	15.71	10.23	15.90	0.012
251.2 - 316.2	51	15.74	21.07	16.79	32.69	0.019
316.2 - 398.1	25	7.72	16.16	16.11	48.79	0.018
398.1 - 501.2	19	5.86	18.59	22.75	71.54	0.026
501.2 - 631.0	3	0.93	5.17	8.43	79.97	0.010
631.0 - 794.3	3	0.93	6.76	12.50	92.47	0.014
794.3 - 1000.0	1	0.31	3.34	7.53	100.00	0.009
324.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 206
 SURFACE MEAN = 241
 VOLUME MEAN = 274
 SAUTER MEAN = 353
 WEIGHT MEAN = 426
 VOLUME MEDIAN = 403
 SAMPLE SIZE CHECK = 0.08

MAXIMUM DIAMETER = 795.5
 MINIMUM DIAMETER = 24.2
 TOTAL DROPS IN SAMPLE = 324.
 TOTAL OUT OF FOCUS = 2
 TOTAL FRAMES IN SAMPLE = 200
 AVE. DROPS PER FRAME = 1.6
 DEVIATION = 0.48

RELATIVE SPAN = (761.01 - 226.49) / 404.00 = 1.32
 ELAPSED TIME = 38 sec

B X

Table E3-03

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10128
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 10.0 INCHES
 DIST FROM NOZZLE 49.0 INCHES
 AZIMUTHAL ANGLE 11.8 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	5	0.96	0.02	0.00	0.00	0.000
25.1 - 31.6	5	0.96	0.03	0.00	0.01	0.000
31.6 - 39.8	13	2.49	0.11	0.02	0.02	0.000
39.8 - 50.1	16	3.07	0.21	0.04	0.07	0.000
50.1 - 63.1	19	3.64	0.38	0.10	0.16	0.000
63.1 - 79.4	32	6.13	0.98	0.31	0.47	0.000
79.4 - 100.0	37	7.09	1.82	0.73	1.20	0.001
100.0 - 125.9	66	12.64	5.18	2.63	3.83	0.003
125.9 - 158.5	76	14.56	9.48	6.06	9.90	0.007
158.5 - 199.5	85	16.28	16.52	13.19	23.09	0.015
199.5 - 251.2	107	20.50	33.35	33.68	56.76	0.039
251.2 - 316.2	50	9.58	22.73	27.72	84.48	0.032
316.2 - 398.1	8	1.53	5.80	8.96	93.44	0.010
398.1 - 501.2	3	0.57	3.40	6.56	100.00	0.008
		522.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 160	MAXIMUM DIAMETER = 469.9
SURFACE MEAN = 177	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 192	TOTAL DROPS IN SAMPLE = 522.
SAUTER MEAN = 225	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 250	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 243	AVE. DROPS PER FRAME = 2.6
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.34

RELATIVE SPAN = (365.42 - 158.94) / 243.16 = 0.85
 ELAPSED TIME = 25 sec

B X

Table E3-04

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10129
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	22	1.95	0.15	0.03	0.03	0.000
25.1 - 31.6	77	6.81	0.81	0.21	0.25	0.000
31.6 - 39.8	103	9.12	1.67	0.54	0.79	0.001
39.8 - 50.1	118	10.44	2.87	1.14	1.93	0.001
50.1 - 63.1	160	14.16	5.97	2.96	4.89	0.003
63.1 - 79.4	172	15.22	10.51	6.66	11.54	0.008
79.4 - 100.0	196	17.35	18.94	15.07	26.61	0.017
100.0 - 125.9	151	13.36	22.54	22.30	48.92	0.026
125.9 - 158.5	93	8.23	21.44	26.36	75.28	0.030
158.5 - 199.5	32	2.83	11.56	17.76	93.03	0.020
199.5 - 251.2	5	0.44	2.77	5.28	98.32	0.006
251.2 - 316.2	1	0.09	0.76	1.68	100.00	0.002
	1130.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 77	MAXIMUM DIAMETER = 252.3
SURFACE MEAN = 86	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 94	TOTAL DROPS IN SAMPLE = 1130.
SAUTER MEAN = 113	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 130	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 127	AVE. DROPS PER FRAME = 5.7
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.39

RELATIVE SPAN = (192.46 - 76.43) / 127.37 = 0.91
 ELAPSED TIME = 24 sec

B X

Table E3-05

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10130
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 10.0 INCHES
 DIST FROM NOZZLE 49.0 INCHES
 AZIMUTHAL ANGLE 11.8 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	44	2.37	0.16	0.03	0.03	0.000
25.1 - 31.6	118	6.35	0.64	0.15	0.18	0.000
31.6 - 39.8	168	9.04	1.36	0.39	0.57	0.000
39.8 - 50.1	159	8.55	1.98	0.70	1.27	0.001
50.1 - 63.1	231	12.43	4.45	1.98	3.25	0.002
63.1 - 79.4	256	13.77	7.88	4.43	7.68	0.005
79.4 - 100.0	289	15.55	13.91	9.77	17.45	0.011
100.0 - 125.9	295	15.87	22.82	20.32	37.77	0.023
125.9 - 158.5	179	9.63	21.54	23.91	61.68	0.027
158.5 - 199.5	101	5.43	19.02	26.43	88.11	0.030
199.5 - 251.2	16	0.86	4.60	7.91	96.02	0.009
251.2 - 316.2	2	0.11	0.84	1.74	97.77	0.002
316.2 - 398.1	1	0.05	0.79	2.23	100.00	0.003
	1859.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	83	MAXIMUM DIAMETER =	360.9
SURFACE MEAN =	94	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	104	TOTAL DROPS IN SAMPLE =	1859.
SAUTER MEAN =	127	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	148	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	143	AVE. DROPS PER FRAME =	9.3
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.42

RELATIVE SPAN = (211.19 - 85.53) / 143.61 = 0.87
 ELAPSED TIME = 24 sec

B X

Table E3-06

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10131
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 20.0 INCHES
 DIST FROM NOZZLE 52.0 INCHES
 AZIMUTHAL ANGLE 22.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.55	0.01	0.00	0.00	0.000
25.1 - 31.6	7	1.28	0.02	0.00	0.00	0.000
31.6 - 39.8	16	2.93	0.07	0.01	0.01	0.000
39.8 - 50.1	15	2.74	0.10	0.01	0.02	0.000
50.1 - 63.1	18	3.29	0.19	0.03	0.05	0.000
63.1 - 79.4	28	5.12	0.47	0.10	0.15	0.000
79.4 - 100.0	39	7.13	1.04	0.27	0.42	0.000
100.0 - 125.9	41	7.50	1.68	0.54	0.97	0.001
125.9 - 158.5	50	9.14	3.28	1.35	2.31	0.002
158.5 - 199.5	66	12.07	6.95	3.62	5.93	0.004
199.5 - 251.2	82	14.99	13.31	8.60	14.53	0.010
251.2 - 316.2	110	20.11	28.00	22.67	37.20	0.026
316.2 - 398.1	37	6.76	14.79	15.01	52.21	0.017
398.1 - 501.2	22	4.02	14.17	18.21	70.43	0.021
501.2 - 631.0	9	1.65	8.73	13.81	84.24	0.016
631.0 - 794.3	3	0.55	4.65	9.24	93.48	0.011
794.3 - 1000.0	1	0.18	2.56	6.52	100.00	0.007
547.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	203	MAXIMUM DIAMETER =	887.2
SURFACE MEAN =	237	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	269	TOTAL DROPS IN SAMPLE =	547.
SAUTER MEAN =	347	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	426	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	386	AVE. DROPS PER FRAME =	2.7
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.47

RELATIVE SPAN = (730.39 - 228.18) / 386.57 = 1.30
 ELAPSED TIME = 24 sec

B X

Table E3-07

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10127 10128 10129 10130 10131

PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	48.0	48.0	48.0	48.0	48.0
RADIAL COORD	20.0	10.0	0.0	10.0	20.0
AZIMUTHAL ANGLE	22.6	11.8	0.0	11.8	22.6
CYLINDRICAL ANGLE	270.	270.	0.	90.	90.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	78	1.78	0.05	0.00	0.00	0.000
25.1 - 31.6	213	4.86	0.21	0.02	0.03	0.000
31.6 - 39.8	310	7.07	0.46	0.06	0.09	0.000
39.8 - 50.1	314	7.17	0.71	0.12	0.21	0.000
50.1 - 63.1	433	9.88	1.50	0.32	0.53	0.000
63.1 - 79.4	508	11.59	2.84	0.77	1.30	0.001
79.4 - 100.0	584	13.33	5.14	1.75	3.05	0.002
100.0 - 125.9	576	13.14	8.03	3.43	6.48	0.004
125.9 - 158.5	427	9.74	9.35	5.01	11.48	0.006
158.5 - 199.5	323	7.37	11.27	7.62	19.11	0.009
199.5 - 251.2	267	6.09	14.89	12.73	31.83	0.015
251.2 - 316.2	214	4.88	18.18	19.17	51.00	0.022
316.2 - 398.1	71	1.62	9.55	12.67	63.68	0.015
398.1 - 501.2	44	1.00	9.26	15.36	79.04	0.018
501.2 - 631.0	12	0.27	4.02	8.45	87.49	0.010
631.0 - 794.3	6	0.14	2.98	7.54	95.03	0.009
794.3 - 1000.0	2	0.05	1.56	4.97	100.00	0.006
4382.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	115	MAXIMUM DIAMETER =	887.2
SURFACE MEAN =	144	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	176	TOTAL DROPS IN SAMPLE =	4382.
SAUTER MEAN =	265	TOTAL OUT OF FOCUS =	10
WEIGHT MEAN =	363	TOTAL FRAMES IN SAMPLE =	1000
VOLUME MEDIAN =	313	AVE. DROPS PER FRAME =	4.4
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.63

RELATIVE SPAN = (682.73 - 149.91) / 313.17 = 1.70
 ELAPSED TIME = 135 sec

B X

Table E3-08

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10132
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 20.0 INCHES
 DIST FROM NOZZLE 52.0 INCHES
 AZIMUTHAL ANGLE 22.6 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.53	0.01	0.00	0.00	0.000
25.1 - 31.6	2	0.77	0.01	0.00	0.00	0.000
31.6 - 39.8	3	1.15	0.03	0.00	0.00	0.000
39.8 - 50.1	3	1.15	0.04	0.01	0.01	0.000
50.1 - 63.1	9	3.45	0.19	0.03	0.04	0.000
63.1 - 79.4	15	5.75	0.47	0.10	0.14	0.000
79.4 - 100.0	18	6.90	0.96	0.26	0.40	0.000
100.0 - 125.9	22	8.43	1.82	0.62	1.02	0.001
125.9 - 158.5	18	6.90	2.36	1.01	2.03	0.001
158.5 - 199.5	24	9.20	5.04	2.73	4.76	0.003
199.5 - 251.2	50	19.16	15.74	10.43	15.19	0.012
251.2 - 316.2	46	17.62	22.92	19.12	34.31	0.022
316.2 - 398.1	26	9.96	19.73	20.30	54.61	0.023
398.1 - 501.2	17	6.51	21.21	27.96	82.57	0.032
501.2 - 631.0	3	1.15	6.30	10.80	93.37	0.012
631.0 - 794.3	1	0.38	3.17	6.63	100.00	0.008
261.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	214	MAXIMUM DIAMETER =	708.5
SURFACE MEAN =	246	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	273	TOTAL DROPS IN SAMPLE =	261.
SAUTER MEAN =	338	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	391	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	381	AVE. DROPS PER FRAME =	1.3
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.43

RELATIVE SPAN = (588.92 - 231.20) / 381.08 = 0.94
 ELAPSED TIME = 43 sec

B X5

Table E3-09

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TEST NUMBER 10133

PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 10.0 INCHES
 DIST FROM NOZZLE 49.0 INCHES
 AZIMUTHAL ANGLE 11.8 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.35	0.01	0.00	0.00	0.000
25.1 - 31.6	12	2.08	0.07	0.01	0.01	0.000
31.6 - 39.8	14	2.43	0.12	0.02	0.03	0.000
39.8 - 50.1	19	3.29	0.25	0.05	0.08	0.000
50.1 - 63.1	35	6.07	0.70	0.18	0.26	0.000
63.1 - 79.4	42	7.28	1.35	0.43	0.69	0.000
79.4 - 100.0	65	11.27	3.47	1.42	2.10	0.002
100.0 - 125.9	76	13.17	6.26	3.18	5.28	0.004
125.9 - 158.5	81	14.04	10.39	6.59	11.87	0.008
158.5 - 199.5	100	17.33	20.23	16.10	27.97	0.018
199.5 - 251.2	79	13.69	24.53	24.15	52.12	0.028
251.2 - 316.2	33	5.72	15.82	19.38	71.50	0.022
316.2 - 398.1	16	2.77	12.78	20.26	91.76	0.023
398.1 - 501.2	3	0.52	4.02	8.24	100.00	0.009
577.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 145	MAXIMUM DIAMETER = 495.5
SURFACE MEAN = 164	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 183	TOTAL DROPS IN SAMPLE = 577.
SAUTER MEAN = 225	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 262	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 247	AVE. DROPS PER FRAME = 2.9
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.41

RELATIVE SPAN = (391.04 - 150.95) / 247.36 = 0.97
 ELAPSED TIME = 23 sec

B X5

Table E3-10

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10134
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	31	2.50	0.20	0.04	0.04	0.000
25.1 - 31.6	101	8.15	1.00	0.27	0.31	0.000
31.6 - 39.8	116	9.36	1.72	0.56	0.87	0.001
39.8 - 50.1	130	10.49	3.00	1.23	2.10	0.001
50.1 - 63.1	158	12.75	5.54	2.81	4.90	0.003
63.1 - 79.4	183	14.77	10.36	6.65	11.56	0.008
79.4 - 100.0	200	16.14	18.01	14.59	26.15	0.017
100.0 - 125.9	175	14.12	24.60	24.87	51.02	0.029
125.9 - 158.5	114	9.20	24.20	30.07	81.09	0.034
158.5 - 199.5	26	2.10	8.59	13.28	94.38	0.015
199.5 - 251.2	5	0.40	2.79	5.62	100.00	0.006
	1239.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	76	MAXIMUM DIAMETER =	238.9
SURFACE MEAN =	85	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	93	TOTAL DROPS IN SAMPLE =	1239.
SAUTER MEAN =	111	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	126	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	125	AVE. DROPS PER FRAME =	6.2
SAMPLE SIZE CHECK =	0.01	DEVIATION =	0.39

RELATIVE SPAN = (185.65 - 76.41) / 125.02 = 0.87
 ELAPSED TIME = 23 sec

B X5

Table 3-11

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10135
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 10.0 INCHES
 DIST FROM NOZZLE 49.0 INCHES
 AZIMUTHAL ANGLE 11.8 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	29	2.20	0.10	0.02	0.02	0.000
25.1 - 31.6	40	3.03	0.21	0.04	0.06	0.000
31.6 - 39.8	71	5.38	0.53	0.13	0.18	0.000
39.8 - 50.1	95	7.20	1.14	0.34	0.52	0.000
50.1 - 63.1	139	10.53	2.57	0.96	1.48	0.001
63.1 - 79.4	168	12.73	4.90	2.29	3.77	0.003
79.4 - 100.0	181	13.71	8.37	4.92	8.69	0.006
100.0 - 125.9	195	14.77	14.38	10.67	19.36	0.012
125.9 - 158.5	199	15.08	23.07	21.46	40.83	0.025
158.5 - 199.5	129	9.77	22.83	26.24	67.06	0.030
199.5 - 251.2	63	4.77	17.26	24.70	91.77	0.028
251.2 - 316.2	10	0.76	4.05	7.02	98.78	0.008
316.2 - 398.1	1	0.08	0.59	1.22	100.00	0.001
1320.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	101	MAXIMUM DIAMETER =	319.1
SURFACE MEAN =	114	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	126	TOTAL DROPS IN SAMPLE =	1320.
SAUTER MEAN =	153	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	173	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	174	AVE. DROPS PER FRAME =	6.6
SAMPLE SIZE CHECK =	0.01	DEVIATION =	0.41

RELATIVE SPAN = (247.63 - 104.12) / 174.12 = 0.82
 ELAPSED TIME = 23 sec

B X5

Table 3-12

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10136
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 20.0 INCHES
 DIST FROM NOZZLE 52.0 INCHES
 AZIMUTHAL ANGLE 22.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.38	0.00	0.00	0.00	0.000
25.1 - 31.6	7	1.33	0.02	0.00	0.00	0.000
31.6 - 39.8	12	2.28	0.06	0.01	0.01	0.000
39.8 - 50.1	12	2.28	0.09	0.01	0.02	0.000
50.1 - 63.1	20	3.80	0.23	0.04	0.05	0.000
63.1 - 79.4	43	8.17	0.80	0.16	0.22	0.000
79.4 - 100.0	44	8.37	1.28	0.32	0.54	0.000
100.0 - 125.9	54	10.27	2.54	0.81	1.35	0.001
125.9 - 158.5	51	9.70	3.82	1.54	2.89	0.002
158.5 - 199.5	73	13.88	8.63	4.38	7.27	0.005
199.5 - 251.2	64	12.17	11.65	7.33	14.60	0.008
251.2 - 316.2	76	14.45	21.66	17.05	31.65	0.020
316.2 - 398.1	35	6.65	15.76	15.61	47.27	0.018
398.1 - 501.2	19	3.61	14.63	18.91	66.18	0.022
501.2 - 631.0	9	1.71	9.03	13.26	79.44	0.015
631.0 - 794.3	4	0.76	7.05	13.89	93.33	0.016
794.3 - 1000.0	1	0.19	2.74	6.67	100.00	0.008
	526.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	192	MAXIMUM DIAMETER =	871.2
SURFACE MEAN =	229	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	266	TOTAL DROPS IN SAMPLE =	526.
SAUTER MEAN =	358	TOTAL OUT OF FOCUS =	3
WEIGHT MEAN =	447	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	413	AVE. DROPS PER FRAME =	2.6
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.53

RELATIVE SPAN = (754.09 - 221.68) / 413.72 = 1.29
 ELAPSED TIME = 27 sec

B X5

Table E3-13

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED:	10132	10133	10134	10135	10136
PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	48.0	48.0	48.0	48.0	48.0
RADIAL COORD	20.0	10.0	0.0	10.0	20.0
AZIMUTHAL ANGLE	22.6	11.8	0.0	11.8	22.6
CYLINDRICAL ANGLE	270.	270.	0.	90.	90.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	68	1.73	0.05	0.00	0.00	0.000
25.1 - 31.6	162	4.13	0.17	0.02	0.02	0.000
31.6 - 39.8	216	5.51	0.33	0.05	0.07	0.000
39.8 - 50.1	259	6.60	0.63	0.11	0.18	0.000
50.1 - 63.1	361	9.20	1.34	0.29	0.47	0.000
63.1 - 79.4	451	11.50	2.68	0.73	1.20	0.001
79.4 - 100.0	508	12.95	4.82	1.66	2.87	0.002
100.0 - 125.9	522	13.31	7.82	3.39	6.25	0.004
125.9 - 158.5	463	11.80	10.81	5.85	12.11	0.007
158.5 - 199.5	352	8.97	12.97	8.82	20.93	0.010
199.5 - 251.2	261	6.65	14.98	12.70	33.63	0.015
251.2 - 316.2	165	4.21	14.96	15.96	49.58	0.018
316.2 - 398.1	78	1.99	11.21	15.05	64.64	0.017
398.1 - 501.2	39	0.99	9.39	16.30	80.94	0.019
501.2 - 631.0	12	0.31	4.08	8.42	89.36	0.010
631.0 - 794.3	5	0.13	2.87	7.70	97.06	0.009
794.3 - 1000.0	1	0.03	0.89	2.94	100.00	0.003
3923.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	119	MAXIMUM DIAMETER =	871.2
SURFACE MEAN =	147	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	179	TOTAL DROPS IN SAMPLE =	3923.
SAUTER MEAN =	262	TOTAL OUT OF FOCUS =	10
WEIGHT MEAN =	358	TOTAL FRAMES IN SAMPLE =	1000
VOLUME MEDIAN =	318	AVE. DROPS PER FRAME =	3.9
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.62

RELATIVE SPAN = (643.65 - 148.28) / 318.54 = 1.56
 ELAPSED TIME = 139 sec

B X5

Table E3-14

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10127 10128 10129 10130 10131 10132 10133 10134 10135
10136

PRESSURE 0.0 - 56.0 PSI
CENTERLINE COORD 0.00 - 48.00 INCHES
RADIAL COORD 0.00 - 20.00 INCHES
AZIMUTHAL ANGLE 0.0 - 67.4 DEG
CYLINDRICAL ANGLE 0 - 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	146	1.76	0.05	0.00	0.00	0.000
25.1 - 31.6	375	4.52	0.19	0.02	0.03	0.000
31.6 - 39.8	526	6.33	0.40	0.06	0.08	0.000
39.8 - 50.1	573	6.90	0.67	0.12	0.20	0.000
50.1 - 63.1	794	9.56	1.43	0.31	0.50	0.000
63.1 - 79.4	959	11.55	2.76	0.75	1.25	0.001
79.4 - 100.0	1092	13.15	4.99	1.71	2.96	0.002
100.0 - 125.9	1098	13.22	7.92	3.41	6.37	0.004
125.9 - 158.5	890	10.72	10.06	5.41	11.78	0.006
158.5 - 199.5	675	8.13	12.10	8.20	19.98	0.009
199.5 - 251.2	528	6.36	14.93	12.71	32.70	0.015
251.2 - 316.2	379	4.56	16.62	17.62	50.32	0.020
316.2 - 398.1	149	1.79	10.35	13.82	64.14	0.016
398.1 - 501.2	83	1.00	9.32	15.82	79.96	0.018
501.2 - 631.0	24	0.29	4.05	8.43	88.39	0.010
631.0 - 794.3	11	0.13	2.92	7.62	96.01	0.009
794.3 - 1000.0	3	0.04	1.23	3.99	100.00	0.005
	8305.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 117	MAXIMUM DIAMETER = 887.2
SURFACE MEAN = 145	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 177	TOTAL DROPS IN SAMPLE = 8305.
SAUTER MEAN = 264	TOTAL OUT OF FOCUS = 20
WEIGHT MEAN = 360	TOTAL FRAMES IN SAMPLE = 2000
VOLUME MEDIAN = 315	AVE. DROPS PER FRAME = 4.2
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.62

RELATIVE SPAN = (663.49 - 149.04) / 315.16 = 1.63
ELAPSED TIME = 274 sec

B X5

Table E3-15

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10122
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 36.0 INCHES
 DIST FROM NOZZLE 102.5 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	1.23	0.01	0.00	0.00	0.000
25.1 - 31.6	0	0.00	0.00	0.00	0.00	0.000
31.6 - 39.8	2	0.82	0.01	0.00	0.00	0.000
39.8 - 50.1	5	2.06	0.03	0.00	0.00	0.000
50.1 - 63.1	5	2.06	0.05	0.01	0.01	0.000
63.1 - 79.4	7	2.88	0.12	0.02	0.03	0.000
79.4 - 100.0	10	4.12	0.28	0.06	0.09	0.000
100.0 - 125.9	10	4.12	0.39	0.10	0.18	0.000
125.9 - 158.5	8	3.29	0.52	0.16	0.35	0.000
158.5 - 199.5	24	9.88	2.44	0.97	1.32	0.001
199.5 - 251.2	12	4.94	1.90	0.95	2.27	0.001
251.2 - 316.2	21	8.64	5.46	3.48	5.75	0.004
316.2 - 398.1	44	18.11	18.32	14.78	20.52	0.017
398.1 - 501.2	60	24.69	37.19	36.65	57.17	0.042
501.2 - 631.0	29	11.93	28.43	35.16	92.33	0.040
631.0 - 794.3	3	1.23	4.85	7.67	100.00	0.009
	243.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	319	MAXIMUM DIAMETER =	738.0
SURFACE MEAN =	358	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	387	TOTAL DROPS IN SAMPLE =	243.
SAUTER MEAN =	450	TOTAL OUT OF FOCUS =	0
WEIGHT MEAN =	483	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	486	AVE. DROPS PER FRAME =	1.2
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.34

RELATIVE SPAN = (623.25 - 349.55) / 486.31 = 0.56
 ELAPSED TIME = 116 sec

B X5

Table E3-16

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10123
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 97.7 INCHES
 AZIMUTHAL ANGLE 10.6 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.28	0.00	0.00	0.00	0.000
25.1 - 31.6	2	0.57	0.01	0.00	0.00	0.000
31.6 - 39.8	3	0.85	0.02	0.00	0.00	0.000
39.8 - 50.1	11	3.13	0.11	0.02	0.02	0.000
50.1 - 63.1	5	1.42	0.08	0.01	0.04	0.000
63.1 - 79.4	16	4.55	0.40	0.10	0.13	0.000
79.4 - 100.0	10	2.84	0.40	0.12	0.25	0.000
100.0 - 125.9	32	9.09	2.05	0.78	1.02	0.001
125.9 - 158.5	34	9.66	3.48	1.66	2.68	0.002
158.5 - 199.5	50	14.20	8.16	4.92	7.60	0.006
199.5 - 251.2	58	16.48	14.93	11.29	18.88	0.013
251.2 - 316.2	74	21.02	30.02	28.49	47.38	0.033
316.2 - 398.1	44	12.50	27.02	31.53	78.90	0.036
398.1 - 501.2	8	2.27	7.59	10.98	89.88	0.013
501.2 - 631.0	4	1.14	5.71	10.12	100.00	0.012
	352.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 213	MAXIMUM DIAMETER = 539.0
SURFACE MEAN = 237	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 256	TOTAL DROPS IN SAMPLE = 352.
SAUTER MEAN = 300	TOTAL OUT OF FOCUS = 1
WEIGHT MEAN = 332	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 324	AVE. DROPS PER FRAME = 1.8
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.33

RELATIVE SPAN = (501.62 - 213.88) / 324.01 = 0.89
 ELAPSED TIME = 30 sec

B X5

Table E3-17

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10124
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	13	1.59	0.07	0.01	0.01	0.000
25.1 - 31.6	31	3.79	0.25	0.05	0.06	0.000
31.6 - 39.8	60	7.33	0.70	0.16	0.22	0.000
39.8 - 50.1	71	8.67	1.30	0.37	0.59	0.000
50.1 - 63.1	76	9.28	2.17	0.78	1.37	0.001
63.1 - 79.4	80	9.77	3.64	1.65	3.02	0.002
79.4 - 100.0	101	12.33	7.20	4.09	7.11	0.005
100.0 - 125.9	116	14.16	12.71	8.94	16.04	0.010
125.9 - 158.5	122	14.90	21.47	19.16	35.20	0.022
158.5 - 199.5	100	12.21	27.42	30.53	65.73	0.035
199.5 - 251.2	38	4.64	15.70	21.46	87.18	0.025
251.2 - 316.2	10	1.22	6.42	10.90	98.08	0.012
316.2 - 398.1	1	0.12	0.94	1.92	100.00	0.002
	819.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	103	MAXIMUM DIAMETER =	326.1
SURFACE MEAN =	117	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	130	TOTAL DROPS IN SAMPLE =	819.
SAUTER MEAN =	159	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	180	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	180	AVE. DROPS PER FRAME =	4.1
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.42

RELATIVE SPAN = (267.30 - 110.14) / 180.39 = 0.87
 ELAPSED TIME = 27 sec

B X5

Table E3-18

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10125
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 97.7 INCHES
 AZIMUTHAL ANGLE 10.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.38	0.01	0.00	0.00	0.000
25.1 - 31.6	26	3.31	0.12	0.02	0.02	0.000
31.6 - 39.8	29	3.69	0.20	0.03	0.05	0.000
39.8 - 50.1	47	5.99	0.50	0.10	0.15	0.000
50.1 - 63.1	60	7.64	1.00	0.26	0.41	0.000
63.1 - 79.4	74	9.43	2.06	0.68	1.09	0.001
79.4 - 100.0	98	12.48	4.13	1.67	2.76	0.002
100.0 - 125.9	92	11.72	6.37	3.30	6.06	0.004
125.9 - 158.5	99	12.61	10.84	7.06	13.11	0.008
158.5 - 199.5	94	11.97	15.63	12.56	25.67	0.014
199.5 - 251.2	89	11.34	23.65	24.04	49.71	0.028
251.2 - 316.2	56	7.13	22.63	28.32	78.04	0.032
316.2 - 398.1	14	1.78	8.59	13.23	91.26	0.015
398.1 - 501.2	3	0.38	2.83	5.38	96.64	0.006
501.2 - 631.0	1	0.13	1.43	3.36	100.00	0.004
785.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 133	MAXIMUM DIAMETER = 520.3
SURFACE MEAN = 155	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 174	TOTAL DROPS IN SAMPLE = 785.
SAUTER MEAN = 222	TOTAL OUT OF FOCUS = 3
WEIGHT MEAN = 258	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 251	AVE. DROPS PER FRAME = 3.9
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.47

RELATIVE SPAN = (390.04 - 146.19)/ 251.93 = 0.97
 ELAPSED TIME = 26 sec

B X5

Table E3-19

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10126
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 36.0 INCHES
 DIST FROM NOZZLE 102.5 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.41	0.00	0.00	0.00	0.000
25.1 - 31.6	2	0.83	0.01	0.00	0.00	0.000
31.6 - 39.8	4	1.66	0.02	0.00	0.00	0.000
39.8 - 50.1	7	2.90	0.05	0.00	0.01	0.000
50.1 - 63.1	10	4.15	0.12	0.01	0.02	0.000
63.1 - 79.4	9	3.73	0.15	0.02	0.04	0.000
79.4 - 100.0	12	4.98	0.35	0.06	0.11	0.000
100.0 - 125.9	20	8.30	0.92	0.21	0.32	0.000
125.9 - 158.5	17	7.05	1.27	0.37	0.69	0.000
158.5 - 199.5	15	6.22	1.66	0.60	1.29	0.001
199.5 - 251.2	25	10.37	4.60	2.15	3.44	0.002
251.2 - 316.2	16	6.64	4.77	2.82	6.26	0.003
316.2 - 398.1	26	10.79	12.60	9.51	15.77	0.011
398.1 - 501.2	47	19.50	32.81	29.73	45.50	0.034
501.2 - 631.0	23	9.54	25.08	28.38	73.87	0.033
631.0 - 794.3	5	2.07	9.02	13.15	87.02	0.015
794.3 - 1000.0	1	0.41	2.91	5.36	92.39	0.006
1000.0 - 1258.9	1	0.41	3.68	7.61	100.00	0.009
241.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 284	MAXIMUM DIAMETER = 1009.1
SURFACE MEAN = 338	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 382	TOTAL DROPS IN SAMPLE = 241.
SAUTER MEAN = 487	TOTAL OUT OF FOCUS = 4
WEIGHT MEAN = 557	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 524	AVE. DROPS PER FRAME = 1.2
SAMPLE SIZE CHECK = 0.08	DEVIATION = 0.45

RELATIVE SPAN = (904.11 - 355.39) / 524.17 = 1.05
 ELAPSED TIME = 68 sec

B X5

Table E3-20

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED:	10122	10123	10124	10125	10126
PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	96.0	96.0	96.0	96.0	96.0
RADIAL COORD	36.0	18.0	0.0	18.0	36.0
AZIMUTHAL ANGLE	20.6	10.6	0.0	10.6	20.6
CYLINDRICAL ANGLE	270.	270.	0.	90.	90.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	21	0.86	0.01	0.00	0.00	0.000
25.1 - 31.6	61	2.50	0.05	0.00	0.00	0.000
31.6 - 39.8	98	4.02	0.12	0.01	0.02	0.000
39.8 - 50.1	141	5.78	0.27	0.03	0.05	0.000
50.1 - 63.1	156	6.39	0.46	0.07	0.12	0.000
63.1 - 79.4	186	7.62	0.88	0.18	0.30	0.000
79.4 - 100.0	231	9.47	1.70	0.42	0.72	0.000
100.0 - 125.9	270	11.07	3.14	0.98	1.70	0.001
125.9 - 158.5	280	11.48	5.22	2.06	3.77	0.002
158.5 - 199.5	283	11.60	8.17	4.02	7.79	0.005
199.5 - 251.2	222	9.10	10.16	6.30	14.09	0.007
251.2 - 316.2	177	7.25	12.83	10.00	24.09	0.011
316.2 - 398.1	129	5.29	14.96	14.75	38.84	0.017
398.1 - 501.2	118	4.84	20.87	25.43	64.27	0.029
501.2 - 631.0	57	2.34	15.81	24.09	88.35	0.028
631.0 - 794.3	8	0.33	3.68	7.22	95.57	0.008
794.3 - 1000.0	1	0.04	0.74	1.83	97.40	0.002
1000.0 - 1258.9	1	0.04	0.93	2.60	100.00	0.003
	2440.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 168	MAXIMUM DIAMETER = 1009.1
SURFACE MEAN = 211	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 253	TOTAL DROPS IN SAMPLE = 2440.
SAUTER MEAN = 362	TOTAL OUT OF FOCUS = 10
WEIGHT MEAN = 448	TOTAL FRAMES IN SAMPLE = 1000
VOLUME MEDIAN = 446	AVE. DROPS PER FRAME = 2.4
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.62

RELATIVE SPAN = (666.03 - 219.89) / 446.85 = 1.00
 ELAPSED TIME = 267 sec

B X5

Table E3-21

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10137
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 36.0 INCHES
 DIST FROM NOZZLE 102.5 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
50.1 - 63.1	1	0.46	0.01	0.00	0.00	0.000
63.1 - 79.4	1	0.46	0.01	0.00	0.00	0.000
79.4 - 100.0	3	1.39	0.08	0.02	0.02	0.000
100.0 - 125.9	4	1.85	0.17	0.04	0.07	0.000
125.9 - 158.5	3	1.39	0.22	0.08	0.14	0.000
158.5 - 199.5	8	3.70	0.80	0.33	0.47	0.000
199.5 - 251.2	11	5.09	1.82	0.96	1.44	0.001
251.2 - 316.2	28	12.96	7.45	5.01	6.44	0.006
316.2 - 398.1	78	36.11	32.50	27.35	33.80	0.031
398.1 - 501.2	67	31.02	41.02	41.86	75.66	0.048
501.2 - 631.0	5	2.31	4.80	6.13	81.79	0.007
631.0 - 794.3	7	3.24	11.11	18.21	100.00	0.021
	216.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	361	MAXIMUM DIAMETER =	751.3
SURFACE MEAN =	379	MINIMUM DIAMETER =	59.2
VOLUME MEAN =	396	TOTAL DROPS IN SAMPLE =	216.
SAUTER MEAN =	430	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	464	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	445	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.18

RELATIVE SPAN = (685.63 - 336.14) / 445.25 = 0.78
 ELAPSED TIME = 111 sec

B X

Table E3-22

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10138
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 97.7 INCHES
 AZIMUTHAL ANGLE 10.6 DEG
 CYLINDRICAL ANGLE 270 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.33	0.01	0.00	0.00	0.000
25.1 - 31.6	11	1.83	0.05	0.01	0.01	0.000
31.6 - 39.8	13	2.17	0.08	0.01	0.02	0.000
39.8 - 50.1	13	2.17	0.13	0.02	0.04	0.000
50.1 - 63.1	29	4.83	0.44	0.10	0.14	0.000
63.1 - 79.4	40	6.67	1.00	0.29	0.43	0.000
79.4 - 100.0	34	5.67	1.29	0.46	0.89	0.001
100.0 - 125.9	65	10.83	3.93	1.77	2.66	0.002
125.9 - 158.5	92	15.33	8.70	4.90	7.56	0.006
158.5 - 199.5	107	17.83	16.44	11.82	19.38	0.014
199.5 - 251.2	104	17.33	24.93	22.41	41.79	0.026
251.2 - 316.2	62	10.33	23.19	26.00	67.79	0.030
316.2 - 398.1	20	3.33	11.53	16.04	83.83	0.018
398.1 - 501.2	7	1.17	6.22	10.72	94.54	0.012
501.2 - 631.0	0	0.00	0.00	0.00	94.54	0.000
631.0 - 794.3	1	0.17	2.08	5.46	100.00	0.006
600.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	165	MAXIMUM DIAMETER =	659.9
SURFACE MEAN =	186	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	206	TOTAL DROPS IN SAMPLE =	600.
SAUTER MEAN =	251	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	294	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	273	AVE. DROPS PER FRAME =	3.0
SAMPLE SIZE CHECK =	0.05	DEVIATION =	0.39

RELATIVE SPAN = (456.10 - 169.70) / 273.58 = 1.05
 ELAPSED TIME = 26 sec

B X

Table E3-23

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10139
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	8	1.58	0.03	0.00	0.00	0.000
25.1 - 31.6	11	2.17	0.07	0.01	0.01	0.000
31.6 - 39.8	24	4.74	0.21	0.03	0.05	0.000
39.8 - 50.1	19	3.75	0.25	0.05	0.09	0.000
50.1 - 63.1	24	4.74	0.48	0.12	0.21	0.000
63.1 - 79.4	29	5.73	0.96	0.30	0.51	0.000
79.4 - 100.0	33	6.52	1.74	0.68	1.19	0.001
100.0 - 125.9	61	12.06	5.02	2.45	3.63	0.003
125.9 - 158.5	67	13.24	8.58	5.22	8.85	0.006
158.5 - 199.5	84	16.60	17.25	13.29	22.14	0.015
199.5 - 251.2	76	15.02	24.60	23.78	45.92	0.027
251.2 - 316.2	51	10.08	25.80	31.22	77.14	0.036
316.2 - 398.1	17	3.36	12.73	18.73	95.87	0.021
398.1 - 501.2	2	0.40	2.28	4.13	100.00	0.005
	506.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	153	MAXIMUM DIAMETER =	440.0
SURFACE MEAN =	175	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	192	TOTAL DROPS IN SAMPLE =	506.
SAUTER MEAN =	233	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	259	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	260	AVE. DROPS PER FRAME =	2.5
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.40

RELATIVE SPAN = (372.33 - 163.42) / 260.85 = 0.80
 ELAPSED TIME = 35 sec

B X

Table E3-25

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10140
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 97.7 INCHES
 AZIMUTHAL ANGLE 10.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	5	0.80	0.01	0.00	0.00	0.000
25.1 - 31.6	15	2.39	0.07	0.01	0.01	0.000
31.6 - 39.8	27	4.31	0.19	0.03	0.04	0.000
39.8 - 50.1	20	3.19	0.21	0.04	0.08	0.000
50.1 - 63.1	33	5.26	0.54	0.13	0.21	0.000
63.1 - 79.4	46	7.34	1.19	0.35	0.56	0.000
79.4 - 100.0	55	8.77	2.23	0.83	1.39	0.001
100.0 - 125.9	71	11.32	4.71	2.24	3.63	0.003
125.9 - 158.5	77	12.28	8.00	4.77	8.40	0.005
158.5 - 199.5	95	15.15	15.19	11.24	19.64	0.013
199.5 - 251.2	89	14.19	22.80	21.33	40.97	0.024
251.2 - 316.2	66	10.53	26.22	30.55	71.52	0.035
316.2 - 398.1	23	3.67	13.85	19.84	91.37	0.023
398.1 - 501.2	5	0.80	4.78	8.63	100.00	0.010
	627.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	154	MAXIMUM DIAMETER =	468.3
SURFACE MEAN =	177	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	196	TOTAL DROPS IN SAMPLE =	627.
SAUTER MEAN =	241	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	272	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	272	AVE. DROPS PER FRAME =	3.1
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.43

RELATIVE SPAN = (392.51 - 166.16) / 272.75 = 0.83
 ELAPSED TIME = 28 sec

B X

Table E3-24

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10141
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 36.0 INCHES
 DIST FROM NOZZLE 102.5 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	0.89	0.01	0.00	0.00	0.000
25.1 - 31.6	5	1.12	0.02	0.00	0.00	0.000
31.6 - 39.8	8	1.79	0.04	0.00	0.01	0.000
39.8 - 50.1	5	1.12	0.04	0.01	0.01	0.000
50.1 - 63.1	8	1.79	0.09	0.02	0.03	0.000
63.1 - 79.4	24	5.36	0.45	0.10	0.12	0.000
79.4 - 100.0	28	6.25	0.85	0.23	0.35	0.000
100.0 - 125.9	30	6.70	1.41	0.48	0.83	0.001
125.9 - 158.5	50	11.16	3.82	1.65	2.48	0.002
158.5 - 199.5	62	13.84	7.66	4.20	6.69	0.005
199.5 - 251.2	57	12.72	10.55	7.09	13.78	0.008
251.2 - 316.2	92	20.54	27.41	23.36	37.14	0.027
316.2 - 398.1	45	10.04	21.39	23.04	60.18	0.026
398.1 - 501.2	21	4.69	14.77	19.36	79.54	0.022
501.2 - 631.0	7	1.56	8.06	13.48	93.02	0.015
631.0 - 794.3	2	0.45	3.43	6.98	100.00	0.008
	448.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	215	MAXIMUM DIAMETER =	709.8
SURFACE MEAN =	245	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	271	TOTAL DROPS IN SAMPLE =	448.
SAUTER MEAN =	334	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	385	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	364	AVE. DROPS PER FRAME =	2.2
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.41

RELATIVE SPAN = (601.09 - 226.79) / 364.43 = 1.03
 ELAPSED TIME = 28 sec

B X

Table E3-26

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10137 10138 10139 10140 10141

PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	96.0	96.0	96.0	96.0	96.0
RADIAL COORD	36.0	18.0	0.0	18.0	36.0
AZIMUTHAL ANGLE	20.6	10.6	0.0	10.6	20.6
CYLINDRICAL ANGLE	270.	270.	0.	90.	90.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	19	0.79	0.01	0.00	0.00	0.000
25.1 - 31.6	42	1.75	0.03	0.00	0.00	0.000
31.6 - 39.8	72	3.00	0.09	0.01	0.01	0.000
39.8 - 50.1	57	2.38	0.10	0.01	0.03	0.000
50.1 - 63.1	95	3.96	0.26	0.05	0.08	0.000
63.1 - 79.4	140	5.84	0.63	0.14	0.22	0.000
79.4 - 100.0	153	6.38	1.08	0.31	0.53	0.000
100.0 - 125.9	231	9.64	2.59	0.94	1.46	0.001
125.9 - 158.5	289	12.06	5.10	2.31	3.77	0.003
158.5 - 199.5	356	14.85	10.00	5.71	9.48	0.007
199.5 - 251.2	337	14.06	14.82	10.60	20.08	0.012
251.2 - 316.2	299	12.47	20.76	18.65	38.73	0.021
316.2 - 398.1	183	7.63	20.14	22.77	61.49	0.026
398.1 - 501.2	102	4.26	16.95	23.54	85.03	0.027
501.2 - 631.0	12	0.50	3.21	5.65	90.68	0.006
631.0 - 794.3	10	0.42	4.22	9.32	100.00	0.011
2397.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 187	MAXIMUM DIAMETER = 751.3
SURFACE MEAN = 218	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 246	TOTAL DROPS IN SAMPLE = 2397.
SAUTER MEAN = 315	TOTAL OUT OF FOCUS = 6
WEIGHT MEAN = 374	TOTAL FRAMES IN SAMPLE = 1000
VOLUME MEDIAN = 359	AVE. DROPS PER FRAME = 2.4
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.47

RELATIVE SPAN = (614.22 - 202.81) / 359.13 = 1.15
 ELAPSED TIME = 228 sec

B X

Table E3-27

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10122 10123 10124 10125 10126 10137 10138 10139 10140
10141

PRESSURE 0.0 - 56.0 PSI
 CENTERLINE COORD 0.00 - 96.00 INCHES
 RADIAL COORD 0.00 - 36.00 INCHES
 AZIMUTHAL ANGLE 0.0 - 69.4 DEG
 CYLINDRICAL ANGLE 0 - 90 DEG

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	40	0.83	0.01	0.00	0.00	0.000
25.1 - 31.6	103	2.13	0.04	0.00	0.00	0.000
31.6 - 39.8	170	3.51	0.10	0.01	0.02	0.000
39.8 - 50.1	198	4.09	0.18	0.02	0.04	0.000
50.1 - 63.1	251	5.19	0.36	0.06	0.10	0.000
63.1 - 79.4	326	6.74	0.75	0.16	0.26	0.000
79.4 - 100.0	384	7.94	1.38	0.37	0.63	0.000
100.0 - 125.9	501	10.36	2.86	0.96	1.59	0.001
125.9 - 158.5	569	11.76	5.16	2.18	3.77	0.002
158.5 - 199.5	639	13.21	9.10	4.83	8.59	0.006
199.5 - 251.2	559	11.56	12.55	8.35	16.94	0.010
251.2 - 316.2	476	9.84	16.89	14.12	31.07	0.016
316.2 - 398.1	312	6.45	17.61	18.57	49.64	0.021
398.1 - 501.2	220	4.55	18.86	24.53	74.17	0.028
501.2 - 631.0	69	1.43	9.37	15.30	89.46	0.018
631.0 - 794.3	18	0.37	3.96	8.22	97.68	0.009
794.3 - 1000.0	1	0.02	0.36	0.96	98.64	0.001
1000.0 - 1258.9	1	0.02	0.46	1.36	100.00	0.002
4837.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	177	MAXIMUM DIAMETER =	1009.1
SURFACE MEAN =	214	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	250	TOTAL DROPS IN SAMPLE =	4837.
SAUTER MEAN =	338	TOTAL OUT OF FOCUS =	16
WEIGHT MEAN =	412	TOTAL FRAMES IN SAMPLE =	2000
VOLUME MEDIAN =	399	AVE. DROPS PER FRAME =	2.4
SAMPLE SIZE CHECK =	0.01	DEVIATION =	0.55

RELATIVE SPAN = (640.94 - 210.05) / 399.76 = 1.08
 ELAPSED TIME = 495 sec

B X

Table E3-28

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10142
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 60.0 INCHES
 DIST FROM NOZZLE 76.8 INCHES
 AZIMUTHAL ANGLE 51.3 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.81	0.02	0.00	0.00	0.000
25.1 - 31.6	11	4.98	0.07	0.00	0.01	0.000
31.6 - 39.8	11	4.98	0.10	0.01	0.01	0.000
39.8 - 50.1	12	5.43	0.18	0.02	0.03	0.000
50.1 - 63.1	12	5.43	0.26	0.03	0.06	0.000
63.1 - 79.4	18	8.14	0.66	0.10	0.16	0.000
79.4 - 100.0	20	9.05	1.14	0.21	0.36	0.000
100.0 - 125.9	28	12.67	2.52	0.57	0.93	0.001
125.9 - 158.5	29	13.12	4.00	1.12	2.05	0.001
158.5 - 199.5	23	10.41	5.07	1.79	3.85	0.002
199.5 - 251.2	13	5.88	4.85	2.24	6.08	0.003
251.2 - 316.2	6	2.71	3.54	2.05	8.14	0.002
316.2 - 398.1	2	0.90	2.05	1.56	9.70	0.002
398.1 - 501.2	10	4.52	15.00	13.81	23.50	0.016
501.2 - 631.0	14	6.33	33.03	38.22	61.72	0.044
631.0 - 794.3	8	3.62	27.49	38.28	100.00	0.044
	221.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	180	MAXIMUM DIAMETER =	735.2
SURFACE MEAN =	251	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	316	TOTAL DROPS IN SAMPLE =	221.
SAUTER MEAN =	499	TOTAL OUT OF FOCUS =	0
WEIGHT MEAN =	574	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	600	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.70

RELATIVE SPAN = (711.08 - 401.31)/ 600.05 = 0.52
 ELAPSED TIME = 132 sec

B X5

Table E3-29

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10157
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 44.0 INCHES
 DIST FROM NOZZLE 65.1 INCHES
 AZIMUTHAL ANGLE 42.5 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.33	0.00	0.00	0.00	0.000
25.1 - 31.6	6	1.97	0.03	0.00	0.00	0.000
31.6 - 39.8	3	0.98	0.02	0.00	0.01	0.000
39.8 - 50.1	5	1.64	0.06	0.01	0.01	0.000
50.1 - 63.1	10	3.28	0.19	0.04	0.05	0.000
63.1 - 79.4	12	3.93	0.36	0.09	0.14	0.000
79.4 - 100.0	18	5.90	0.86	0.26	0.39	0.000
100.0 - 125.9	20	6.56	1.47	0.54	0.94	0.001
125.9 - 158.5	23	7.54	2.71	1.27	2.20	0.001
158.5 - 199.5	37	12.13	6.97	4.12	6.32	0.005
199.5 - 251.2	53	17.38	16.61	12.64	18.97	0.014
251.2 - 316.2	84	27.54	38.67	35.71	54.68	0.041
316.2 - 398.1	22	7.21	16.41	19.30	73.98	0.022
398.1 - 501.2	7	2.30	8.30	12.32	86.30	0.014
501.2 - 631.0	3	0.98	4.68	7.92	94.22	0.009
631.0 - 794.3	1	0.33	2.63	5.78	100.00	0.007
	305.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 211	MAXIMUM DIAMETER = 670.0
SURFACE MEAN = 236	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 257	TOTAL DROPS IN SAMPLE = 305.
SAUTER MEAN = 305	TOTAL OUT OF FOCUS = 5
WEIGHT MEAN = 346	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 310	AVE. DROPS PER FRAME = 1.5
SAMPLE SIZE CHECK = 0.06	DEVIATION = 0.31

RELATIVE SPAN = (559.50 - 219.64) / 310.14 = 1.10
 ELAPSED TIME = 32 sec

B X5

Table E3-30

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10143
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.84	0.01	0.00	0.00	0.000
25.1 - 31.6	7	1.97	0.04	0.00	0.00	0.000
31.6 - 39.8	10	2.81	0.08	0.01	0.01	0.000
39.8 - 50.1	8	2.25	0.09	0.01	0.03	0.000
50.1 - 63.1	18	5.06	0.33	0.06	0.09	0.000
63.1 - 79.4	20	5.62	0.62	0.15	0.23	0.000
79.4 - 100.0	27	7.58	1.33	0.39	0.62	0.000
100.0 - 125.9	33	9.27	2.53	0.93	1.55	0.001
125.9 - 158.5	34	9.55	4.16	1.93	3.48	0.002
158.5 - 199.5	39	10.96	7.41	4.28	7.76	0.005
199.5 - 251.2	68	19.10	20.69	15.13	22.88	0.017
251.2 - 316.2	53	14.89	25.02	22.75	45.63	0.026
316.2 - 398.1	22	6.18	16.66	19.23	64.85	0.022
398.1 - 501.2	9	2.53	10.74	15.50	80.35	0.018
501.2 - 631.0	3	0.84	5.29	9.31	89.67	0.011
631.0 - 794.3	2	0.56	4.98	10.33	100.00	0.012
		356.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	185	MAXIMUM DIAMETER =	654.2
SURFACE MEAN =	216	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	243	TOTAL DROPS IN SAMPLE =	356.
SAUTER MEAN =	310	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	367	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	335	AVE. DROPS PER FRAME =	1.8
SAMPLE SIZE CHECK =	0.05	DEVIATION =	0.44

RELATIVE SPAN = (631.74 - 210.61) / 335.75 = 1.25
 ELAPSED TIME = 26 sec

B X5

Table E3-31

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10158
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 34.0 INCHES
 DIST FROM NOZZLE 58.8 INCHES
 AZIMUTHAL ANGLE 35.3 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	6	0.66	0.02	0.00	0.00	0.000
25.1 - 31.6	28	3.09	0.13	0.02	0.02	0.000
31.6 - 39.8	28	3.09	0.20	0.04	0.06	0.000
39.8 - 50.1	35	3.86	0.38	0.09	0.15	0.000
50.1 - 63.1	76	8.38	1.26	0.37	0.52	0.000
63.1 - 79.4	60	6.62	1.63	0.60	1.12	0.001
79.4 - 100.0	92	10.14	3.87	1.78	2.90	0.002
100.0 - 125.9	129	14.22	8.63	5.01	7.91	0.006
125.9 - 158.5	158	17.42	16.78	12.28	20.19	0.014
158.5 - 199.5	178	19.63	28.76	25.98	46.17	0.030
199.5 - 251.2	88	9.70	22.69	25.90	72.06	0.030
251.2 - 316.2	22	2.43	9.31	13.66	85.72	0.016
316.2 - 398.1	4	0.44	2.48	4.36	90.08	0.005
398.1 - 501.2	2	0.22	2.27	5.43	95.50	0.006
501.2 - 631.0	1	0.11	1.59	4.50	100.00	0.005
	907.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 129	MAXIMUM DIAMETER = 554.0
SURFACE MEAN = 145	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 160	TOTAL DROPS IN SAMPLE = 907.
SAUTER MEAN = 196	TOTAL OUT OF FOCUS = 5
WEIGHT MEAN = 235	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 207	AVE. DROPS PER FRAME = 4.5
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.37

RELATIVE SPAN = (396.53 - 133.35) / 207.92 = 1.27
 ELAPSED TIME = 22 sec

B X5

Table E3-32

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10144
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 24.0 INCHES
 DIST FROM NOZZLE 53.7 INCHES
 AZIMUTHAL ANGLE 26.6 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	23	2.89	0.25	0.06	0.06	0.000
25.1 - 31.6	63	7.91	1.01	0.28	0.34	0.000
31.6 - 39.8	68	8.54	1.62	0.55	0.89	0.001
39.8 - 50.1	94	11.81	3.51	1.49	2.37	0.002
50.1 - 63.1	101	12.69	5.77	3.03	5.41	0.003
63.1 - 79.4	111	13.94	10.25	6.85	12.25	0.008
79.4 - 100.0	134	16.83	19.50	16.37	28.62	0.019
100.0 - 125.9	140	17.59	32.54	34.49	63.11	0.040
125.9 - 158.5	46	5.78	16.35	21.40	84.51	0.025
158.5 - 199.5	15	1.88	8.30	13.57	98.09	0.016
199.5 - 251.2	1	0.13	0.92	1.91	100.00	0.002
	796.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	74	MAXIMUM DIAMETER =	223.7
SURFACE MEAN =	82	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	90	TOTAL DROPS IN SAMPLE =	796.
SAUTER MEAN =	106	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	119	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	117	AVE. DROPS PER FRAME =	4.0
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.36

RELATIVE SPAN = (174.67 - 75.02) / 117.64 = 0.85
 ELAPSED TIME = 24 sec

B X5

Table E3-33

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10159
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 14.0 INCHES
 DIST FROM NOZZLE 50.0 INCHES
 AZIMUTHAL ANGLE 16.3 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	20	1.87	0.10	0.01	0.01	0.000
25.1 - 31.6	63	5.90	0.47	0.08	0.10	0.000
31.6 - 39.8	59	5.52	0.67	0.15	0.25	0.000
39.8 - 50.1	89	8.33	1.57	0.43	0.68	0.000
50.1 - 63.1	119	11.14	3.28	1.13	1.81	0.001
63.1 - 79.4	142	13.30	6.02	2.58	4.39	0.003
79.4 - 100.0	174	16.29	11.86	6.44	10.83	0.007
100.0 - 125.9	152	14.23	16.50	11.31	22.14	0.013
125.9 - 158.5	148	13.86	24.60	20.84	42.98	0.024
158.5 - 199.5	73	6.84	18.95	20.07	63.05	0.023
199.5 - 251.2	28	2.62	11.08	14.48	77.53	0.017
251.2 - 316.2	0	0.00	0.00	0.00	77.53	0.000
316.2 - 398.1	0	0.00	0.00	0.00	77.53	0.000
398.1 - 501.2	0	0.00	0.00	0.00	77.53	0.000
501.2 - 631.0	0	0.00	0.00	0.00	77.53	0.000
631.0 - 794.3	1	0.09	4.91	22.47	100.00	0.026
	1068.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 92	MAXIMUM DIAMETER = 761.4
SURFACE MEAN = 105	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 122	TOTAL DROPS IN SAMPLE = 1068.
SAUTER MEAN = 166	TOTAL OUT OF FOCUS = 5
WEIGHT MEAN = 289	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 173	AVE. DROPS PER FRAME = 5.3
SAMPLE SIZE CHECK = 0.22	DEVIATION = 0.47

RELATIVE SPAN = (704.39 - 97.99) / 173.57 = 3.49
 ELAPSED TIME = 22 sec

B X5

Table E3-34

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10145
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 -	25.1	2	0.37	0.00	0.00	0.00	0.000
25.1 -	31.6	19	3.53	0.06	0.01	0.01	0.000
31.6 -	39.8	16	2.97	0.08	0.01	0.01	0.000
39.8 -	50.1	20	3.71	0.15	0.02	0.03	0.000
50.1 -	63.1	36	6.68	0.42	0.07	0.10	0.000
63.1 -	79.4	34	6.31	0.65	0.14	0.24	0.000
79.4 -	100.0	47	8.72	1.36	0.36	0.61	0.000
100.0 -	125.9	44	8.16	1.95	0.64	1.25	0.001
125.9 -	158.5	39	7.24	2.84	1.20	2.45	0.001
158.5 -	199.5	51	9.46	5.86	3.11	5.56	0.004
199.5 -	251.2	56	10.39	10.23	6.85	12.41	0.008
251.2 -	316.2	89	16.51	25.65	21.62	34.02	0.025
316.2 -	398.1	57	10.58	24.78	25.60	59.63	0.029
398.1 -	501.2	18	3.34	12.19	15.72	75.35	0.018
501.2 -	631.0	9	1.67	10.11	16.78	92.13	0.019
631.0 -	794.3	2	0.37	3.69	7.87	100.00	0.009
		539.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	190	MAXIMUM DIAMETER =	772.3
SURFACE MEAN =	228	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	260	TOTAL DROPS IN SAMPLE =	539.
SAUTER MEAN =	339	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	398	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	370	AVE. DROPS PER FRAME =	2.7
SAMPLE SIZE CHECK =	0.05	DEVIATION =	0.48

RELATIVE SPAN = (614.27 - 236.12) / 370.35 = 1.02
 ELAPSED TIME = 25 sec

B X5

Table E3-35

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10160
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 14.0 INCHES
 DIST FROM NOZZLE 50.0 INCHES
 AZIMUTHAL ANGLE 16.3 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	13	1.35	0.05	0.01	0.01	0.000
25.1 - 31.6	24	2.49	0.14	0.02	0.03	0.000
31.6 - 39.8	39	4.05	0.34	0.06	0.08	0.000
39.8 - 50.1	46	4.78	0.63	0.13	0.22	0.000
50.1 - 63.1	89	9.25	1.88	0.49	0.71	0.001
63.1 - 79.4	96	9.98	3.26	1.08	1.78	0.001
79.4 - 100.0	133	13.83	7.04	2.91	4.69	0.003
100.0 - 125.9	174	18.09	14.69	7.66	12.36	0.009
125.9 - 158.5	197	20.48	25.75	16.71	29.07	0.019
158.5 - 199.5	112	11.64	22.80	18.47	47.54	0.021
199.5 - 251.2	31	3.22	10.01	10.23	57.76	0.012
251.2 - 316.2	4	0.42	1.99	2.51	60.27	0.003
316.2 - 398.1	1	0.10	0.88	1.47	61.74	0.002
398.1 - 501.2	1	0.10	1.51	3.32	65.05	0.004
501.2 - 631.0	0	0.00	0.00	0.00	65.05	0.000
631.0 - 794.3	1	0.10	3.40	11.17	76.23	0.013
794.3 - 1000.0	1	0.10	5.62	23.77	100.00	0.027
962.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 109	MAXIMUM DIAMETER = 920.5
SURFACE MEAN = 125	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 150	TOTAL DROPS IN SAMPLE = 962.
SAUTER MEAN = 217	TOTAL OUT OF FOCUS = 5
WEIGHT MEAN = 418	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 211	AVE. DROPS PER FRAME = 4.8
SAMPLE SIZE CHECK = 0.24	DEVIATION = 0.48

RELATIVE SPAN = (869.29 - 119.71) / 211.81 = 3.54
 ELAPSED TIME = 22 sec

B X5

Table E3-36

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10146
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 24.0 INCHES
 DIST FROM NOZZLE 53.7 INCHES
 AZIMUTHAL ANGLE 26.6 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.03	0.07	0.02	0.02	0.000
25.1 - 31.6	17	4.37	0.46	0.12	0.14	0.000
31.6 - 39.8	23	5.91	0.95	0.31	0.44	0.000
39.8 - 50.1	34	8.74	2.19	0.89	1.33	0.001
50.1 - 63.1	50	12.85	5.06	2.58	3.92	0.003
63.1 - 79.4	65	16.71	10.03	6.32	10.23	0.007
79.4 - 100.0	78	20.05	19.83	16.05	26.28	0.018
100.0 - 125.9	61	15.68	23.63	23.60	49.88	0.027
125.9 - 158.5	47	12.08	28.39	35.37	85.25	0.041
158.5 - 199.5	9	2.31	8.03	12.17	97.42	0.014
199.5 - 251.2	1	0.26	1.38	2.58	100.00	0.003
	389.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	83	MAXIMUM DIAMETER =	211.2
SURFACE MEAN =	91	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	97	TOTAL DROPS IN SAMPLE =	389.
SAUTER MEAN =	112	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	124	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	126	AVE. DROPS PER FRAME =	1.9
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.33

RELATIVE SPAN = (174.03 - 78.99) / 126.02 = 0.75
 ELAPSED TIME = 49 sec

B X5

Table E3-37

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10161
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 34.0 INCHES
 DIST FROM NOZZLE 58.8 INCHES
 AZIMUTHAL ANGLE 35.3 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	56	3.69	0.33	0.08	0.08	0.000
25.1 - 31.6	144	9.49	1.29	0.36	0.44	0.000
31.6 - 39.8	116	7.64	1.57	0.54	0.98	0.001
39.8 - 50.1	171	11.26	3.51	1.49	2.47	0.002
50.1 - 63.1	231	15.22	7.47	4.00	6.47	0.005
63.1 - 79.4	241	15.88	12.28	8.25	14.72	0.009
79.4 - 100.0	227	14.95	18.47	15.67	30.39	0.018
100.0 - 125.9	194	12.78	24.27	25.52	55.91	0.029
125.9 - 158.5	102	6.72	19.70	25.73	81.64	0.029
158.5 - 199.5	34	2.24	10.29	16.83	98.47	0.019
199.5 - 251.2	2	0.13	0.81	1.53	100.00	0.002
	1518.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 72	MAXIMUM DIAMETER = 200.8
SURFACE MEAN = 80	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 88	TOTAL DROPS IN SAMPLE = 1518.
SAUTER MEAN = 106	TOTAL OUT OF FOCUS = 5
WEIGHT MEAN = 120	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 120	AVE. DROPS PER FRAME = 7.6
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.40

RELATIVE SPAN = (178.65 - 71.29) / 120.69 = 0.89
 ELAPSED TIME = 22 sec

B X5

Table E3-38

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10147
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	10	1.08	0.03	0.00	0.00	0.000
25.1 - 31.6	21	2.27	0.08	0.01	0.01	0.000
31.6 - 39.8	33	3.56	0.19	0.03	0.05	0.000
39.8 - 50.1	35	3.78	0.30	0.06	0.11	0.000
50.1 - 63.1	65	7.01	0.90	0.25	0.36	0.000
63.1 - 79.4	71	7.66	1.58	0.54	0.90	0.001
79.4 - 100.0	83	8.95	2.91	1.25	2.15	0.001
100.0 - 125.9	122	13.16	6.63	3.56	5.71	0.004
125.9 - 158.5	127	13.70	11.04	7.50	13.21	0.009
158.5 - 199.5	160	17.26	22.04	18.85	32.06	0.022
199.5 - 251.2	122	13.16	25.81	27.35	59.42	0.031
251.2 - 316.2	65	7.01	21.17	27.82	87.24	0.032
316.2 - 398.1	11	1.19	5.76	9.60	96.84	0.011
398.1 - 501.2	2	0.22	1.56	3.16	100.00	0.004
		927.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	139	MAXIMUM DIAMETER =	427.6
SURFACE MEAN =	158	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	174	TOTAL DROPS IN SAMPLE =	927.
SAUTER MEAN =	210	TOTAL OUT OF FOCUS =	4
WEIGHT MEAN =	236	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	235	AVE. DROPS PER FRAME =	4.6
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.40

RELATIVE SPAN = (338.74 - 146.82) / 235.52 = 0.81
 ELAPSED TIME = 23 sec

B X5

Table E3-39

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10162
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 44.0 INCHES
 DIST FROM NOZZLE 65.1 INCHES
 AZIMUTHAL ANGLE 42.5 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.31	0.00	0.00	0.00	0.000
25.1 - 31.6	11	1.73	0.04	0.00	0.00	0.000
31.6 - 39.8	14	2.20	0.07	0.01	0.02	0.000
39.8 - 50.1	13	2.05	0.10	0.02	0.03	0.000
50.1 - 63.1	23	3.62	0.27	0.06	0.09	0.000
63.1 - 79.4	25	3.94	0.48	0.14	0.23	0.000
79.4 - 100.0	42	6.61	1.31	0.47	0.70	0.001
100.0 - 125.9	51	8.03	2.57	1.17	1.87	0.001
125.9 - 158.5	68	10.71	5.29	2.98	4.85	0.003
158.5 - 199.5	103	16.22	12.59	8.90	13.75	0.010
199.5 - 251.2	150	23.62	29.80	26.83	40.58	0.031
251.2 - 316.2	95	14.96	28.16	30.96	71.54	0.035
316.2 - 398.1	32	5.04	14.50	19.72	91.27	0.023
398.1 - 501.2	5	0.79	3.75	6.58	97.85	0.008
501.2 - 631.0	1	0.16	1.05	2.15	100.00	0.002
635.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 182	MAXIMUM DIAMETER = 519.7
SURFACE MEAN = 201	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 217	TOTAL DROPS IN SAMPLE = 635.
SAUTER MEAN = 252	TOTAL OUT OF FOCUS = 6
WEIGHT MEAN = 278	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 273	AVE. DROPS PER FRAME = 3.2
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.33

RELATIVE SPAN = (392.88 - 185.98) / 273.41 = 0.76
 ELAPSED TIME = 23 sec

B X5

Table E3-40

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89
 TEST NUMBER 10148
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 60.0 INCHES
 DIST FROM NOZZLE 76.8 INCHES
 AZIMUTHAL ANGLE 51.3 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.43	0.00	0.00	0.00	0.000
25.1 - 31.6	7	3.00	0.04	0.00	0.00	0.000
31.6 - 39.8	20	8.58	0.16	0.01	0.01	0.000
39.8 - 50.1	11	4.72	0.13	0.01	0.03	0.000
50.1 - 63.1	14	6.01	0.24	0.03	0.05	0.000
63.1 - 79.4	24	10.30	0.72	0.11	0.16	0.000
79.4 - 100.0	16	6.87	0.75	0.14	0.30	0.000
100.0 - 125.9	20	8.58	1.44	0.33	0.62	0.000
125.9 - 158.5	21	9.01	2.57	0.76	1.39	0.001
158.5 - 199.5	19	8.15	3.45	1.24	2.63	0.001
199.5 - 251.2	15	6.44	4.63	2.18	4.81	0.003
251.2 - 316.2	22	9.44	9.86	5.59	10.41	0.006
316.2 - 398.1	4	1.72	3.04	2.25	12.65	0.003
398.1 - 501.2	14	6.01	17.76	16.89	29.54	0.019
501.2 - 631.0	14	6.01	25.37	28.89	58.43	0.033
631.0 - 794.3	11	4.72	29.85	41.57	100.00	0.048
	233.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 200	MAXIMUM DIAMETER = 733.1
SURFACE MEAN = 270	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 330	TOTAL DROPS IN SAMPLE = 233.
SAUTER MEAN = 490	TOTAL OUT OF FOCUS = 4
WEIGHT MEAN = 558	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 598	AVE. DROPS PER FRAME = 1.2
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.66

RELATIVE SPAN = (711.85 - 312.49) / 598.63 = 0.67
 ELAPSED TIME = 84 sec

B X5

Table E3-41

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (2) TF16FCN.

TEST DATE 2/20/89

TESTS INCLUDED: 10142 10143 10144 10145 10146 10147 10148

PRESSURE 0.0 - 56.0 PSI

CENTERLINE COORD 0.00 - 48.00 INCHES

RADIAL COORD 0.00 - 60.00 INCHES

AZIMUTHAL ANGLE 0.0 - 38.7 DEG

CYLINDRICAL ANGLE 0 - 90 DEG

2 NOZZLES 4 FT. APART.

TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	47	1.36	0.03	0.00	0.00	0.000
25.1 - 31.6	145	4.19	0.12	0.01	0.01	0.000
31.6 - 39.8	181	5.23	0.22	0.02	0.04	0.000
39.8 - 50.1	214	6.18	0.40	0.05	0.09	0.000
50.1 - 63.1	296	8.55	0.87	0.15	0.24	0.000
63.1 - 79.4	343	9.91	1.63	0.35	0.59	0.000
79.4 - 100.0	405	11.70	3.04	0.82	1.42	0.001
100.0 - 125.9	448	12.94	5.25	1.78	3.20	0.002
125.9 - 158.5	343	9.91	6.37	2.72	5.92	0.003
158.5 - 199.5	316	9.13	9.30	5.00	10.91	0.006
199.5 - 251.2	276	7.97	12.89	8.73	19.64	0.010
251.2 - 316.2	235	6.79	17.14	14.51	34.15	0.017
316.2 - 398.1	96	2.77	11.02	11.70	45.85	0.013
398.1 - 501.2	53	1.53	9.93	13.46	59.31	0.015
501.2 - 631.0	40	1.16	11.76	19.97	79.28	0.023
631.0 - 794.3	23	0.66	10.03	20.72	100.00	0.024
	3461.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 137

SURFACE MEAN = 176

VOLUME MEAN = 218

SAUTER MEAN = 333

WEIGHT MEAN = 436

VOLUME MEDIAN = 430

SAMPLE SIZE CHECK = 0.01

MAXIMUM DIAMETER = 772.3

MINIMUM DIAMETER = 24.2

TOTAL DROPS IN SAMPLE = 3461.

TOTAL OUT OF FOCUS = 14

TOTAL FRAMES IN SAMPLE = 1400

AVE. DROPS PER FRAME = 2.5

DEVIATION = 0.68

RELATIVE SPAN = (704.62 - 193.07) / 430.20 = 1.19

ELAPSED TIME = 363 sec

B X5

Table E3-42

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10142 10143 10144 10145 10146 10147 10148 10157 10158 10159
10160 10161 10162PRESSURE 56.0 PSI
CENTERLINE COORD 48.0 INCHES
RADIAL COORD 0.00 - 60.00 INCHES
AZIMUTHAL ANGLE 0.0 - 51.3 DEG
CYLINDRICAL ANGLE 0 - 270 DEG2 NOZZLES 4 FT. APART.
TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	145	1.64	0.04	0.00	0.00	0.000
25.1 - 31.6	421	4.75	0.18	0.02	0.02	0.000
31.6 - 39.8	440	4.97	0.28	0.04	0.06	0.000
39.8 - 50.1	573	6.47	0.57	0.09	0.15	0.000
50.1 - 63.1	844	9.53	1.30	0.27	0.42	0.000
63.1 - 79.4	919	10.38	2.26	0.58	1.00	0.001
79.4 - 100.0	1091	12.32	4.26	1.38	2.38	0.002
100.0 - 125.9	1168	13.19	7.16	2.90	5.28	0.003
125.9 - 158.5	1039	11.73	10.00	5.08	10.35	0.006
158.5 - 199.5	853	9.63	12.91	8.23	18.58	0.009
199.5 - 251.2	628	7.09	15.33	12.40	30.98	0.014
251.2 - 316.2	440	4.97	16.66	16.78	47.76	0.019
316.2 - 398.1	155	1.75	9.20	11.62	59.38	0.013
398.1 - 501.2	68	0.77	6.66	10.77	70.15	0.012
501.2 - 631.0	45	0.51	6.80	13.68	83.83	0.016
631.0 - 794.3	26	0.29	5.98	14.82	98.65	0.017
794.3 - 1000.0	1	0.01	0.41	1.35	100.00	0.002
8856.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 122	MAXIMUM DIAMETER = 920.5
SURFACE MEAN = 152	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 186	TOTAL DROPS IN SAMPLE = 8856.
SAUTER MEAN = 279	TOTAL OUT OF FOCUS = 45
WEIGHT MEAN = 385	TOTAL FRAMES IN SAMPLE = 2600
VOLUME MEDIAN = 331	AVE. DROPS PER FRAME = 3.4
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.63

RELATIVE SPAN = (697.60 - 156.61) / 331.91 = 1.63
 ELAPSED TIME = 506 sec

B X5

Table E3-43

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10149
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 60.0 INCHES
 DIST FROM NOZZLE 113.2 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 - 31.6	1	0.43	0.00	0.00	0.00	0.000
31.6 - 39.8	2	0.87	0.01	0.00	0.00	0.000
39.8 - 50.1	3	1.30	0.02	0.00	0.00	0.000
50.1 - 63.1	4	1.73	0.04	0.01	0.01	0.000
63.1 - 79.4	4	1.73	0.08	0.01	0.02	0.000
79.4 - 100.0	7	3.03	0.20	0.04	0.06	0.000
100.0 - 125.9	5	2.16	0.23	0.06	0.13	0.000
125.9 - 158.5	12	5.19	0.95	0.33	0.46	0.000
158.5 - 199.5	22	9.52	2.71	1.18	1.64	0.001
199.5 - 251.2	19	8.23	3.80	2.11	3.76	0.002
251.2 - 316.2	32	13.85	10.19	7.15	10.91	0.008
316.2 - 398.1	65	28.14	31.76	27.56	38.47	0.032
398.1 - 501.2	38	16.45	27.62	29.28	67.75	0.034
501.2 - 631.0	15	6.49	18.60	25.81	93.56	0.030
631.0 - 794.3	2	0.87	3.78	6.44	100.00	0.007
	231.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 310	MAXIMUM DIAMETER = 733.1
SURFACE MEAN = 340	MINIMUM DIAMETER = 31.2
VOLUME MEAN = 365	TOTAL DROPS IN SAMPLE = 231.
SAUTER MEAN = 418	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 456	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 442	AVE. DROPS PER FRAME = 1.2
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.30

RELATIVE SPAN = (613.75 - 310.35) / 442.91 = 0.69
 ELAPSED TIME = 98 sec

B X5

Table E3-44

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10150
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 104.8 INCHES
 AZIMUTHAL ANGLE 23.6 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.19	0.00	0.00	0.00	0.000
25.1 - 31.6	6	1.14	0.03	0.00	0.00	0.000
31.6 - 39.8	12	2.27	0.09	0.01	0.02	0.000
39.8 - 50.1	17	3.22	0.19	0.04	0.05	0.000
50.1 - 63.1	28	5.30	0.49	0.11	0.17	0.000
63.1 - 79.4	42	7.95	1.21	0.37	0.53	0.000
79.4 - 100.0	45	8.52	1.92	0.71	1.24	0.001
100.0 - 125.9	47	8.90	3.45	1.67	2.92	0.002
125.9 - 158.5	46	8.71	5.20	3.13	6.04	0.004
158.5 - 199.5	102	19.32	18.09	13.63	19.68	0.016
199.5 - 251.2	94	17.80	25.30	23.48	43.15	0.027
251.2 - 316.2	64	12.12	27.55	32.35	75.50	0.037
316.2 - 398.1	23	4.36	15.58	22.98	98.48	0.026
398.1 - 501.2	1	0.19	0.90	1.52	100.00	0.002
	528.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	165	MAXIMUM DIAMETER =	404.0
SURFACE MEAN =	185	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	201	TOTAL DROPS IN SAMPLE =	528.
SAUTER MEAN =	239	TOTAL OUT OF FOCUS =	0
WEIGHT MEAN =	263	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	266	AVE. DROPS PER FRAME =	2.6
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.37

RELATIVE SPAN = (368.22 - 174.84) / 266.88 = 0.72
 ELAPSED TIME = 25 sec

B X5

Table E3-45

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10151
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 24.0 INCHES
 DIST FROM NOZZLE 99.0 INCHES
 AZIMUTHAL ANGLE 14.0 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.39	0.01	0.00	0.00	0.000
25.1 - 31.6	12	2.33	0.08	0.01	0.01	0.000
31.6 - 39.8	12	2.33	0.13	0.02	0.02	0.000
39.8 - 50.1	22	4.26	0.37	0.06	0.08	0.000
50.1 - 63.1	45	8.72	1.18	0.22	0.30	0.000
63.1 - 79.4	43	8.33	1.82	0.43	0.73	0.000
79.4 - 100.0	62	12.02	4.04	1.19	1.92	0.001
100.0 - 125.9	70	13.57	7.20	2.66	4.58	0.003
125.9 - 158.5	112	21.71	18.43	8.62	13.19	0.010
158.5 - 199.5	83	16.09	20.68	11.89	25.08	0.014
199.5 - 251.2	40	7.75	15.79	11.41	36.49	0.013
251.2 - 316.2	5	0.97	2.71	2.28	38.78	0.003
316.2 - 398.1	0	0.00	0.00	0.00	38.78	0.000
398.1 - 501.2	1	0.19	1.85	2.88	41.66	0.003
501.2 - 631.0	2	0.39	4.46	7.63	49.29	0.009
631.0 - 794.3	4	0.78	15.73	35.90	85.19	0.041
794.3 - 1000.0	1	0.19	5.51	14.81	100.00	0.017
516.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	128	MAXIMUM DIAMETER =	823.8
SURFACE MEAN =	154	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	194	TOTAL DROPS IN SAMPLE =	516.
SAUTER MEAN =	306	TOTAL OUT OF FOCUS =	0
WEIGHT MEAN =	497	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	634	AVE. DROPS PER FRAME =	2.6
SAMPLE SIZE CHECK =	0.15	DEVIATION =	0.79

RELATIVE SPAN = (804.31 - 149.23) / 634.75 = 1.03
 ELAPSED TIME = 30 sec

B X5

Table E3-46

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10152
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 6.0 INCHES
 DIST FROM NOZZLE 96.2 INCHES
 AZIMUTHAL ANGLE 3.6 DEG
 CYLINDRICAL ANGLE 270 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	5	0.67	0.01	0.00	0.00	0.000
25.1 - 31.6	35	4.70	0.15	0.02	0.02	0.000
31.6 - 39.8	24	3.23	0.16	0.02	0.04	0.000
39.8 - 50.1	39	5.24	0.40	0.07	0.12	0.000
50.1 - 63.1	56	7.53	0.89	0.21	0.32	0.000
63.1 - 79.4	66	8.87	1.63	0.47	0.79	0.001
79.4 - 100.0	83	11.16	3.22	1.17	1.96	0.001
100.0 - 125.9	79	10.62	4.94	2.27	4.23	0.003
125.9 - 158.5	90	12.10	8.82	5.08	9.31	0.006
158.5 - 199.5	106	14.25	16.43	11.90	21.20	0.014
199.5 - 251.2	75	10.08	18.50	16.90	38.10	0.019
251.2 - 316.2	49	6.59	19.08	21.88	59.98	0.025
316.2 - 398.1	26	3.49	15.75	22.51	82.49	0.026
398.1 - 501.2	11	1.48	10.01	17.51	100.00	0.020
744.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 140	MAXIMUM DIAMETER = 468.3
SURFACE MEAN = 166	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 189	TOTAL DROPS IN SAMPLE = 744.
SAUTER MEAN = 248	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 290	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 288	AVE. DROPS PER FRAME = 3.7
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.51

RELATIVE SPAN = (428.45 - 161.71) / 288.32 = 0.93
 ELAPSED TIME = 24 sec

B X5

Table E3-47

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10153
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 6.0 INCHES
 DIST FROM NOZZLE 96.2 INCHES
 AZIMUTHAL ANGLE 3.6 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.51	0.01	0.00	0.00	0.000
25.1 - 31.6	8	1.35	0.03	0.00	0.00	0.000
31.6 - 39.8	15	2.53	0.08	0.01	0.01	0.000
39.8 - 50.1	25	4.22	0.22	0.03	0.05	0.000
50.1 - 63.1	24	4.05	0.33	0.06	0.11	0.000
63.1 - 79.4	30	5.06	0.65	0.16	0.27	0.000
79.4 - 100.0	62	10.46	2.06	0.63	0.90	0.001
100.0 - 125.9	49	8.26	2.63	1.02	1.92	0.001
125.9 - 158.5	73	12.31	5.86	2.79	4.71	0.003
158.5 - 199.5	94	15.85	12.36	7.51	12.22	0.009
199.5 - 251.2	98	16.53	19.97	15.11	27.34	0.017
251.2 - 316.2	55	9.27	17.47	16.50	43.84	0.019
316.2 - 398.1	37	6.24	18.96	22.73	66.56	0.026
398.1 - 501.2	14	2.36	10.77	15.84	82.40	0.018
501.2 - 631.0	5	0.84	6.42	12.15	94.55	0.014
631.0 - 794.3	1	0.17	2.20	5.45	100.00	0.006
593.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 174	MAXIMUM DIAMETER = 733.8
SURFACE MEAN = 203	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 230	TOTAL DROPS IN SAMPLE = 593.
SAUTER MEAN = 296	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 358	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 340	AVE. DROPS PER FRAME = 3.0
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.48

RELATIVE SPAN = (580.93 - 190.08) / 340.00 = 1.15
 ELAPSED TIME = 24 sec

B X5

Table E3-48

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10154
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 24.0 INCHES
 DIST FROM NOZZLE 99.0 INCHES
 AZIMUTHAL ANGLE 14.0 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.57	0.01	0.00	0.00	0.000
25.1 - 31.6	5	1.42	0.03	0.00	0.00	0.000
31.6 - 39.8	1	0.28	0.01	0.00	0.00	0.000
39.8 - 50.1	13	3.70	0.19	0.03	0.03	0.000
50.1 - 63.1	14	3.99	0.31	0.06	0.09	0.000
63.1 - 79.4	22	6.27	0.86	0.21	0.30	0.000
79.4 - 100.0	42	11.97	2.54	0.77	1.08	0.001
100.0 - 125.9	34	9.69	3.19	1.21	2.29	0.001
125.9 - 158.5	53	15.10	7.95	3.81	6.10	0.004
158.5 - 199.5	48	13.68	11.20	6.70	12.79	0.008
199.5 - 251.2	66	18.80	25.02	19.06	31.86	0.022
251.2 - 316.2	35	9.97	19.93	18.59	50.44	0.021
316.2 - 398.1	4	1.14	3.89	4.76	55.20	0.005
398.1 - 501.2	4	1.14	6.32	9.80	65.00	0.011
501.2 - 631.0	7	1.99	15.27	27.77	92.77	0.032
631.0 - 794.3	1	0.28	3.26	7.23	100.00	0.008
	351.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 169	MAXIMUM DIAMETER = 665.6
SURFACE MEAN = 196	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 226	TOTAL DROPS IN SAMPLE = 351.
SAUTER MEAN = 300	TOTAL OUT OF FOCUS = 3
WEIGHT MEAN = 378	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 314	AVE. DROPS PER FRAME = 1.8
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.46

RELATIVE SPAN = (618.68 - 184.82) / 314.84 = 1.38
 ELAPSED TIME = 42 sec

B X5

Table E3-49

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10155
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 104.8 INCHES
 AZIMUTHAL ANGLE 23.6 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	1.11	0.04	0.00	0.00	0.000
25.1 - 31.6	36	4.44	0.23	0.03	0.04	0.000
31.6 - 39.8	41	5.06	0.37	0.06	0.10	0.000
39.8 - 50.1	42	5.19	0.60	0.13	0.22	0.000
50.1 - 63.1	79	9.75	1.75	0.45	0.68	0.001
63.1 - 79.4	82	10.12	2.89	0.94	1.62	0.001
79.4 - 100.0	101	12.47	5.63	2.30	3.92	0.003
100.0 - 125.9	114	14.07	9.96	5.10	9.03	0.006
125.9 - 158.5	121	14.94	16.61	10.67	19.70	0.012
158.5 - 199.5	100	12.35	21.51	17.32	37.02	0.020
199.5 - 251.2	58	7.16	19.85	20.14	57.16	0.023
251.2 - 316.2	23	2.84	12.07	15.17	72.33	0.017
316.2 - 398.1	2	0.25	1.77	2.92	75.25	0.003
398.1 - 501.2	1	0.12	1.13	2.06	77.31	0.002
501.2 - 631.0	0	0.00	0.00	0.00	77.31	0.000
631.0 - 794.3	0	0.00	0.00	0.00	77.31	0.000
794.3 - 1000.0	1	0.12	5.57	22.69	100.00	0.026
	810.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	114	MAXIMUM DIAMETER =	902.0
SURFACE MEAN =	134	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	158	TOTAL DROPS IN SAMPLE =	810.
SAUTER MEAN =	221	TOTAL OUT OF FOCUS =	4
WEIGHT MEAN =	366	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	233	AVE. DROPS PER FRAME =	4.1
SAMPLE SIZE CHECK =	0.23	DEVIATION =	0.51

RELATIVE SPAN = (856.24 - 129.75) / 233.98 = 3.10
 ELAPSED TIME = 25 sec

B X5

Table E3-50

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89
 TEST NUMBER 10156
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 60.0 INCHES
 DIST FROM NOZZLE 113.2 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

2 NOZZLES 4 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	1.01	0.01	0.00	0.00	0.000
25.1 - 31.6	3	1.01	0.01	0.00	0.00	0.000
31.6 - 39.8	6	2.01	0.03	0.00	0.01	0.000
39.8 - 50.1	6	2.01	0.06	0.01	0.01	0.000
50.1 - 63.1	12	4.03	0.18	0.03	0.04	0.000
63.1 - 79.4	13	4.36	0.29	0.06	0.10	0.000
79.4 - 100.0	8	2.68	0.29	0.07	0.17	0.000
100.0 - 125.9	21	7.05	1.14	0.36	0.53	0.000
125.9 - 158.5	38	12.75	3.29	1.30	1.83	0.001
158.5 - 199.5	14	4.70	2.01	1.01	2.84	0.001
199.5 - 251.2	22	7.38	5.06	3.25	6.09	0.004
251.2 - 316.2	51	17.11	17.99	14.30	20.40	0.016
316.2 - 398.1	61	20.47	34.24	34.39	54.78	0.039
398.1 - 501.2	34	11.41	27.65	33.42	88.21	0.038
501.2 - 631.0	6	2.01	7.76	11.79	100.00	0.014
	298.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	243	MAXIMUM DIAMETER =	579.6
SURFACE MEAN =	277	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	302	TOTAL DROPS IN SAMPLE =	298.
SAUTER MEAN =	360	TOTAL OUT OF FOCUS =	4
WEIGHT MEAN =	388	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	389	AVE. DROPS PER FRAME =	1.5
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.37

RELATIVE SPAN = (513.01 - 276.06) / 389.72 = 0.61
 ELAPSED TIME = 44 sec

B X5

Table D3-51

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (2) TF16FCN

TEST DATE 2/20/89

TESTS INCLUDED: 10149 10150 10151 10152 10153 10154 10155 10156

PRESSURE 0.0 - 56.0 PSI

CENTERLINE COORD 0.00 - 96.00 INCHES

RADIAL COORD 0.00 - 60.00 INCHES

AZIMUTHAL ANGLE 0.0 - 58.0 DEG

CYLINDRICAL ANGLE 0 - 90 DEG

2 NOZZLES 4 FT. APART.

TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	25	0.61	0.01	0.00	0.00	0.000
25.1 - 31.6	106	2.60	0.06	0.01	0.01	0.000
31.6 - 39.8	113	2.78	0.10	0.01	0.02	0.000
39.8 - 50.1	167	4.10	0.23	0.03	0.05	0.000
50.1 - 63.1	262	6.44	0.55	0.10	0.15	0.000
63.1 - 79.4	302	7.42	1.02	0.24	0.39	0.000
79.4 - 100.0	410	10.07	2.15	0.63	1.02	0.001
100.0 - 125.9	419	10.29	3.51	1.30	2.32	0.001
125.9 - 158.5	545	13.39	7.15	3.31	5.63	0.004
158.5 - 199.5	569	13.98	11.78	6.85	12.49	0.008
199.5 - 251.2	472	11.59	15.44	11.30	23.78	0.013
251.2 - 316.2	314	7.71	16.20	14.88	38.67	0.017
316.2 - 398.1	218	5.35	18.17	21.20	59.87	0.024
398.1 - 501.2	104	2.55	12.95	18.48	78.35	0.021
501.2 - 631.0	35	0.86	7.15	13.07	91.41	0.015
631.0 - 794.3	8	0.20	2.56	5.85	97.27	0.007
794.3 - 1000.0	2	0.05	0.97	2.73	100.00	0.003
4071.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	161	MAXIMUM DIAMETER =	902.0
SURFACE MEAN =	194	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	226	TOTAL DROPS IN SAMPLE =	4071.
SAUTER MEAN =	308	TOTAL OUT OF FOCUS =	13
WEIGHT MEAN =	384	TOTAL FRAMES IN SAMPLE =	1600
VOLUME MEDIAN =	362	AVE. DROPS PER FRAME =	2.5
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.55

RELATIVE SPAN = (616.45 - 187.11) / 362.08 = 1.19
ELAPSED TIME = 312 sec

B X5

Table E3-52

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10277
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 270 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	3.38	0.01	0.00	0.00	0.000
25.1 - 31.6	5	2.42	0.01	0.00	0.00	0.000
31.6 - 39.8	4	1.93	0.01	0.00	0.00	0.000
39.8 - 50.1	0	0.00	0.00	0.00	0.00	0.000
50.1 - 63.1	2	0.97	0.01	0.00	0.00	0.000
63.1 - 79.4	3	1.45	0.04	0.01	0.01	0.000
79.4 - 100.0	2	0.97	0.05	0.01	0.02	0.000
100.0 - 125.9	5	2.42	0.17	0.04	0.06	0.000
125.9 - 158.5	2	0.97	0.11	0.03	0.09	0.000
158.5 - 199.5	6	2.90	0.48	0.17	0.26	0.000
199.5 - 251.2	11	5.31	1.43	0.64	0.90	0.001
251.2 - 316.2	10	4.83	2.05	1.15	2.05	0.001
316.2 - 398.1	17	8.21	5.73	4.12	6.17	0.005
398.1 - 501.2	73	35.27	40.23	36.91	43.08	0.042
501.2 - 631.0	54	26.09	41.14	44.35	87.43	0.051
631.0 - 794.3	5	2.42	6.85	9.93	97.36	0.011
794.3 - 1000.0	1	0.48	1.67	2.64	100.00	0.003
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		207.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	392	MAXIMUM DIAMETER =	798.2
SURFACE MEAN =	429	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	452	TOTAL DROPS IN SAMPLE =	207.
SAUTER MEAN =	502	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	525	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	526	AVE. DROPS PER FRAME =	1.0
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.25

RELATIVE SPAN = (671.40 - 421.55) / 526.08 = 0.47
 ELAPSED TIME = 233 sec

B X5

Table E3-53

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10276
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 270 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.55	0.01	0.00	0.00	0.000
25.1 - 31.6	12	2.21	0.06	0.01	0.01	0.000
31.6 - 39.8	13	2.39	0.09	0.01	0.02	0.000
39.8 - 50.1	17	3.12	0.18	0.03	0.05	0.000
50.1 - 63.1	36	6.62	0.63	0.14	0.19	0.000
63.1 - 79.4	35	6.43	0.93	0.25	0.43	0.000
79.4 - 100.0	51	9.37	2.20	0.74	1.18	0.001
100.0 - 125.9	61	11.21	4.14	1.76	2.94	0.002
125.9 - 158.5	59	10.85	6.16	3.25	6.19	0.004
158.5 - 199.5	71	13.05	12.08	8.12	14.31	0.009
199.5 - 251.2	106	19.49	27.25	22.54	36.86	0.026
251.2 - 316.2	50	9.19	20.44	21.31	58.17	0.024
316.2 - 398.1	20	3.68	12.48	16.06	74.23	0.018
398.1 - 501.2	4	0.74	3.94	6.36	80.58	0.007
501.2 - 631.0	5	0.92	7.09	13.71	94.29	0.016
631.0 - 794.3	1	0.18	2.32	5.71	100.00	0.007
-----	544.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	161	MAXIMUM DIAMETER =	664.0
SURFACE MEAN =	187	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	211	TOTAL DROPS IN SAMPLE =	544.
SAUTER MEAN =	269	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	325	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	292	AVE. DROPS PER FRAME =	2.7
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.44

RELATIVE SPAN = (589.35 - 180.80) / 292.98 = 1.39
 ELAPSED TIME = 26 sec

B X5

Table E3-54

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10275
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 270 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	6	1.01	0.02	0.00	0.00	0.000
25.1 - 31.6	14	2.35	0.06	0.01	0.01	0.000
31.6 - 39.8	13	2.18	0.08	0.01	0.02	0.000
39.8 - 50.1	30	5.03	0.29	0.04	0.06	0.000
50.1 - 63.1	29	4.87	0.42	0.08	0.14	0.000
63.1 - 79.4	43	7.21	1.03	0.24	0.38	0.000
79.4 - 100.0	52	8.72	1.98	0.59	0.97	0.001
100.0 - 125.9	74	12.42	4.39	1.63	2.60	0.002
125.9 - 158.5	78	13.09	7.49	3.54	6.13	0.004
158.5 - 199.5	93	15.60	13.78	8.08	14.22	0.009
199.5 - 251.2	73	12.25	17.47	13.00	27.22	0.015
251.2 - 316.2	56	9.40	20.09	18.36	45.58	0.021
316.2 - 398.1	20	3.36	11.17	12.69	58.27	0.015
398.1 - 501.2	8	1.34	8.00	12.16	70.43	0.014
501.2 - 631.0	3	0.50	4.73	9.02	79.45	0.010
631.0 - 794.3	4	0.67	9.00	20.55	100.00	0.024
-----		596.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	159	MAXIMUM DIAMETER =	755.2
SURFACE MEAN =	190	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	222	TOTAL DROPS IN SAMPLE =	596.
SAUTER MEAN =	306	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	402	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	344	AVE. DROPS PER FRAME =	3.0
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.54

RELATIVE SPAN = (695.53 - 181.19) / 344.89 = 1.49
 ELAPSED TIME = 29 sec

B X5

Table E3-55

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10274
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	11	0.76	0.02	0.00	0.00	0.000
25.1 - 31.6	54	3.75	0.12	0.01	0.01	0.000
31.6 - 39.8	65	4.51	0.21	0.03	0.04	0.000
39.8 - 50.1	46	3.19	0.23	0.04	0.08	0.000
50.1 - 63.1	100	6.94	0.76	0.16	0.24	0.000
63.1 - 79.4	129	8.96	1.57	0.42	0.66	0.000
79.4 - 100.0	151	10.49	2.96	1.01	1.67	0.001
100.0 - 125.9	176	12.22	5.43	2.31	3.98	0.003
125.9 - 158.5	192	13.33	9.28	4.95	8.92	0.006
158.5 - 199.5	212	14.72	15.97	10.63	19.55	0.012
199.5 - 251.2	139	9.65	16.58	13.89	33.44	0.016
251.2 - 316.2	88	6.11	16.33	17.05	50.49	0.020
316.2 - 398.1	43	2.99	12.56	16.45	66.93	0.019
398.1 - 501.2	26	1.81	11.64	18.85	85.78	0.022
501.2 - 631.0	7	0.49	4.85	9.78	95.56	0.011
631.0 - 794.3	0	0.00	0.00	0.00	95.56	0.000
794.3 - 1000.0	1	0.07	1.50	4.44	100.00	0.005
-----	1440.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 143	MAXIMUM DIAMETER = 794.7
SURFACE MEAN = 170	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 198	TOTAL DROPS IN SAMPLE = 1440.
SAUTER MEAN = 269	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 338	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 314	AVE. DROPS PER FRAME = 7.2
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.54

RELATIVE SPAN = (555.25 - 163.88) / 314.51 = 1.24
 ELAPSED TIME = 34 sec

B X5

Table E3-56

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10278
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	0.67	0.02	0.00	0.00	0.000
25.1 - 31.6	38	2.81	0.10	0.01	0.02	0.000
31.6 - 39.8	38	2.81	0.15	0.02	0.04	0.000
39.8 - 50.1	51	3.77	0.31	0.06	0.10	0.000
50.1 - 63.1	88	6.51	0.84	0.22	0.32	0.000
63.1 - 79.4	108	7.99	1.62	0.53	0.85	0.001
79.4 - 100.0	128	9.47	3.04	1.25	2.10	0.001
100.0 - 125.9	184	13.61	6.91	3.57	5.67	0.004
125.9 - 158.5	215	15.90	12.65	8.18	13.84	0.009
158.5 - 199.5	238	17.60	22.22	18.08	31.93	0.021
199.5 - 251.2	145	10.72	20.94	21.20	53.13	0.024
251.2 - 316.2	80	5.92	17.98	22.70	75.83	0.026
316.2 - 398.1	21	1.55	7.60	12.20	88.03	0.014
398.1 - 501.2	8	0.59	4.66	9.43	97.47	0.011
501.2 - 631.0	1	0.07	0.97	2.53	100.00	0.003
-----	1352.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 139	MAXIMUM DIAMETER = 574.2
SURFACE MEAN = 158	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 176	TOTAL DROPS IN SAMPLE = 1352.
SAUTER MEAN = 220	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 260	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 244	AVE. DROPS PER FRAME = 6.8
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.42

RELATIVE SPAN = (418.50 - 145.74) / 244.39 = 1.12
 ELAPSED TIME = 28 sec

R X5

Table E3-57

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10279
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 90 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	10	1.36	0.03	0.00	0.00	0.000
25.1 - 31.6	34	4.61	0.17	0.01	0.02	0.000
31.6 - 39.8	38	5.15	0.29	0.03	0.05	0.000
39.8 - 50.1	30	4.07	0.34	0.04	0.09	0.000
50.1 - 63.1	54	7.32	0.95	0.15	0.24	0.000
63.1 - 79.4	74	10.03	2.08	0.42	0.66	0.000
79.4 - 100.0	71	9.62	3.11	0.78	1.45	0.001
100.0 - 125.9	119	16.12	8.30	2.64	4.08	0.003
125.9 - 158.5	113	15.31	12.73	5.14	9.22	0.006
158.5 - 199.5	97	13.14	17.20	8.71	17.93	0.010
199.5 - 251.2	60	8.13	16.23	10.15	28.08	0.012
251.2 - 316.2	24	3.25	10.60	8.48	36.56	0.010
316.2 - 398.1	7	0.95	5.07	5.19	41.75	0.006
398.1 - 501.2	1	0.14	0.90	1.02	42.76	0.001
501.2 - 631.0	2	0.27	2.94	4.25	47.02	0.005
631.0 - 794.3	2	0.27	5.68	11.46	58.48	0.013
794.3 - 1000.0	0	0.00	0.00	0.00	58.48	0.000
1000.0 - 1258.9	2	0.27	13.39	41.52	100.00	0.048
-----	738.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	125	MAXIMUM DIAMETER =	1142.9
SURFACE MEAN =	156	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	205	TOTAL DROPS IN SAMPLE =	738.
SAUTER MEAN =	354	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	658	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	673	AVE. DROPS PER FRAME =	3.7
SAMPLE SIZE CHECK =	0.23	DEVIATION =	0.81

RELATIVE SPAN = (1113.31 - 162.98) / 673.26 = 1.41
 ELAPSED TIME = 26 sec -79-

B X5

Table E3-58

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10280
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 90 DEG

4 NOZZLES 2 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.42	0.00	0.00	0.00	0.000
25.1 - 31.6	3	1.25	0.01	0.00	0.00	0.000
31.6 - 39.8	3	1.25	0.01	0.00	0.00	0.000
39.8 - 50.1	4	1.67	0.02	0.00	0.00	0.000
50.1 - 63.1	6	2.50	0.06	0.01	0.01	0.000
63.1 - 79.4	11	4.58	0.16	0.02	0.04	0.000
79.4 - 100.0	6	2.50	0.15	0.03	0.06	0.000
100.0 - 125.9	8	3.33	0.31	0.07	0.14	0.000
125.9 - 158.5	11	4.58	0.65	0.19	0.33	0.000
158.5 - 199.5	10	4.17	0.96	0.37	0.71	0.000
199.5 - 251.2	20	8.33	3.02	1.46	2.17	0.002
251.2 - 316.2	23	9.58	5.71	3.54	5.71	0.004
316.2 - 398.1	23	9.58	8.79	6.77	12.48	0.008
398.1 - 501.2	80	33.33	48.47	46.92	59.41	0.054
501.2 - 631.0	25	10.42	22.89	27.30	86.70	0.031
631.0 - 794.3	5	2.08	6.74	9.71	96.41	0.011
794.3 - 1000.0	1	0.42	2.03	3.59	100.00	0.004
-----		240.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	329	MAXIMUM DIAMETER =	821.2
SURFACE MEAN =	371	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	400	TOTAL DROPS IN SAMPLE =	240.
SAUTER MEAN =	465	TOTAL OUT OF FOCUS =	2
WEIGHT MEAN =	498	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	488	AVE. DROPS PER FRAME =	1.2
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.32

RELATIVE SPAN = (684.15 - 372.93) / 488.60 = 0.64
 ELAPSED TIME = 86 sec

B X5

Table E3-59

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (4) TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED: 10274 10275 10276 10277 10278 10279 10280

PRESSURE 56.0 PSI

CENTERLINE COORD 96.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 39.1 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

4 NOZZLES 2 FT. APART.

TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	47	0.92	0.01	0.00	0.00	0.000
25.1 - 31.6	160	3.13	0.07	0.01	0.01	0.000
31.6 - 39.8	174	3.40	0.11	0.01	0.02	0.000
39.8 - 50.1	178	3.48	0.18	0.02	0.04	0.000
50.1 - 63.1	315	6.16	0.49	0.08	0.12	0.000
63.1 - 79.4	403	7.88	1.00	0.21	0.33	0.000
79.4 - 100.0	461	9.01	1.82	0.48	0.80	0.001
100.0 - 125.9	627	12.25	3.90	1.28	2.08	0.001
125.9 - 158.5	670	13.09	6.57	2.70	4.78	0.003
158.5 - 199.5	727	14.21	11.23	5.80	10.58	0.007
199.5 - 251.2	554	10.83	13.35	8.61	19.20	0.010
251.2 - 316.2	331	6.47	12.51	10.11	29.31	0.012
316.2 - 398.1	151	2.95	9.06	9.22	38.53	0.011
398.1 - 501.2	200	3.91	19.70	25.67	64.21	0.029
501.2 - 631.0	97	1.90	13.88	21.81	86.02	0.025
631.0 - 794.3	17	0.33	4.01	8.09	94.11	0.009
794.3 - 1000.0	3	0.06	0.94	2.19	96.30	0.003
1000.0 - 1258.9	2	0.04	1.17	3.70	100.00	0.004
-----	5117.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 162
 SURFACE MEAN = 200
 VOLUME MEAN = 240
 SAUTER MEAN = 347
 WEIGHT MEAN = 448
 VOLUME MEDIAN = 447
 SAMPLE SIZE CHECK = 0.02

MAXIMUM DIAMETER = 1142.9
 MINIMUM DIAMETER = 24.2
 TOTAL DROPS IN SAMPLE = 5117.
 TOTAL OUT OF FOCUS = 12
 TOTAL FRAMES IN SAMPLE = 1400
 AVE. DROPS PER FRAME = 3.7
 DEVIATION = 0.63

RELATIVE SPAN = (708.50 - 196.28) / 447.73 = 1.14

ELAPSED TIME = 462 sec

C123

B X5

Table E3-60

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10220
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	3.20	0.02	0.00	0.00	0.000
25.1 - 31.6	16	7.31	0.07	0.00	0.00	0.000
31.6 - 39.8	12	5.48	0.08	0.01	0.01	0.000
39.8 - 50.1	11	5.02	0.11	0.01	0.02	0.000
50.1 - 63.1	17	7.76	0.26	0.03	0.04	0.000
63.1 - 79.4	17	7.76	0.42	0.05	0.09	0.000
79.4 - 100.0	14	6.39	0.58	0.09	0.18	0.000
100.0 - 125.9	16	7.31	1.02	0.20	0.38	0.000
125.9 - 158.5	18	8.22	1.86	0.46	0.85	0.001
158.5 - 199.5	22	10.05	3.29	0.98	1.83	0.001
199.5 - 251.2	14	6.39	3.33	1.25	3.08	0.001
251.2 - 316.2	6	2.74	2.15	0.99	4.07	0.001
316.2 - 398.1	5	2.28	3.09	1.88	5.95	0.002
398.1 - 501.2	9	4.11	10.26	8.44	14.39	0.010
501.2 - 631.0	20	9.13	30.80	29.47	43.86	0.034
631.0 - 794.3	8	3.65	18.61	21.88	65.73	0.025
794.3 - 1000.0	7	3.20	24.04	34.27	100.00	0.039
-----	219.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	211	MAXIMUM DIAMETER =	877.7
SURFACE MEAN =	302	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	376	TOTAL DROPS IN SAMPLE =	219.
SAUTER MEAN =	582	TOTAL OUT OF FOCUS =	77
WEIGHT MEAN =	655	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	679	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.68

RELATIVE SPAN = (855.97 - 455.80) / 679.82 = 0.59
 ELAPSED TIME = 136 sec

B X5

Table E3-61

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10221
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	6	2.69	0.01	0.00	0.00	0.000
25.1 - 31.6	17	7.62	0.05	0.00	0.00	0.000
31.6 - 39.8	13	5.83	0.06	0.00	0.01	0.000
39.8 - 50.1	10	4.48	0.06	0.00	0.01	0.000
50.1 - 63.1	15	6.73	0.16	0.02	0.03	0.000
63.1 - 79.4	9	4.04	0.15	0.02	0.04	0.000
79.4 - 100.0	12	5.38	0.30	0.04	0.09	0.000
100.0 - 125.9	11	4.93	0.45	0.09	0.18	0.000
125.9 - 158.5	11	4.93	0.68	0.16	0.34	0.000
158.5 - 199.5	12	5.38	1.29	0.40	0.73	0.000
199.5 - 251.2	11	4.93	1.91	0.75	1.48	0.001
251.2 - 316.2	8	3.59	2.14	1.04	2.53	0.001
316.2 - 398.1	13	5.83	5.25	3.15	5.67	0.004
398.1 - 501.2	21	9.42	14.88	11.78	17.45	0.013
501.2 - 631.0	37	16.59	40.30	39.62	57.07	0.045
631.0 - 794.3	11	4.93	17.23	20.30	77.37	0.023
794.3 - 1000.0	5	2.24	11.72	16.84	94.21	0.019
1000.0 - 1258.9	1	0.45	3.37	5.79	100.00	0.007
-----	223.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	278	MAXIMUM DIAMETER =	1011.6
SURFACE MEAN =	369	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	431	TOTAL DROPS IN SAMPLE =	223.
SAUTER MEAN =	588	TOTAL OUT OF FOCUS =	77
WEIGHT MEAN =	644	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	614	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.55

RELATIVE SPAN = (947.92 - 447.14) / 614.94 = 0.81
 ELAPSED TIME = 93 sec

B X5

Table E3-62

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10222
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	23	9.62	0.05	0.00	0.00	0.000
25.1 - 31.6	4	1.67	0.01	0.00	0.00	0.000
31.6 - 39.8	10	4.18	0.05	0.00	0.01	0.000
39.8 - 50.1	6	2.51	0.05	0.00	0.01	0.000
50.1 - 63.1	15	6.28	0.19	0.02	0.03	0.000
63.1 - 79.4	12	5.02	0.25	0.04	0.07	0.000
79.4 - 100.0	15	6.28	0.49	0.09	0.16	0.000
100.0 - 125.9	13	5.44	0.61	0.13	0.29	0.000
125.9 - 158.5	15	6.28	1.19	0.34	0.63	0.000
158.5 - 199.5	10	4.18	1.23	0.43	1.06	0.000
199.5 - 251.2	12	5.02	2.39	1.07	2.13	0.001
251.2 - 316.2	15	6.28	4.66	2.60	4.73	0.003
316.2 - 398.1	15	6.28	7.52	5.34	10.06	0.006
398.1 - 501.2	36	15.06	27.40	23.94	34.01	0.027
501.2 - 631.0	28	11.72	33.30	36.29	70.30	0.042
631.0 - 794.3	9	3.77	17.73	24.86	95.16	0.028
794.3 - 1000.0	1	0.42	2.87	4.84	100.00	0.006
-----		239.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	252	MAXIMUM DIAMETER =	853.4
SURFACE MEAN =	325	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	377	TOTAL DROPS IN SAMPLE =	239.
SAUTER MEAN =	505	TOTAL OUT OF FOCUS =	78
WEIGHT MEAN =	555	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	566	AVE. DROPS PER FRAME =	1.2
SAMPLE SIZE CHECK =	0.05	DEVIATION =	0.55

RELATIVE SPAN = (761.37 - 397.35) / 566.35 = 0.64
 ELAPSED TIME = 102 sec

B X5

Table E3-63

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10223
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	16	5.82	0.03	0.00	0.00	0.000
25.1 - 31.6	6	2.18	0.02	0.00	0.00	0.000
31.6 - 39.8	10	3.64	0.05	0.00	0.01	0.000
39.8 - 50.1	14	5.09	0.10	0.01	0.01	0.000
50.1 - 63.1	18	6.55	0.19	0.02	0.03	0.000
63.1 - 79.4	21	7.64	0.38	0.05	0.09	0.000
79.4 - 100.0	23	8.36	0.64	0.11	0.19	0.000
100.0 - 125.9	18	6.55	0.78	0.17	0.36	0.000
125.9 - 158.5	15	5.45	0.97	0.25	0.61	0.000
158.5 - 199.5	18	6.55	1.91	0.63	1.25	0.001
199.5 - 251.2	6	2.18	1.04	0.44	1.69	0.001
251.2 - 316.2	14	5.09	3.81	2.03	3.72	0.002
316.2 - 398.1	22	8.00	10.16	7.04	10.76	0.008
398.1 - 501.2	28	10.18	19.83	17.00	27.76	0.019
501.2 - 631.0	32	11.64	34.99	37.37	65.13	0.043
631.0 - 794.3	11	4.00	17.51	22.55	87.68	0.026
794.3 - 1000.0	3	1.09	7.61	12.32	100.00	0.014
-----	275.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 244	MAXIMUM DIAMETER = 884.9
SURFACE MEAN = 324	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 382	TOTAL DROPS IN SAMPLE = 275.
SAUTER MEAN = 529	TOTAL OUT OF FOCUS = 78
WEIGHT MEAN = 584	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 587	AVE. DROPS PER FRAME = 1.4
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.58

RELATIVE SPAN = (811.54 - 391.82) / 587.48 = 0.71
 ELAPSED TIME = 69 sec

B X5

Table E3-64

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10224
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	2.63	0.02	0.00	0.00	0.000
25.1 - 31.6	14	5.26	0.05	0.00	0.00	0.000
31.6 - 39.8	7	2.63	0.04	0.00	0.01	0.000
39.8 - 50.1	14	5.26	0.12	0.01	0.02	0.000
50.1 - 63.1	15	5.64	0.18	0.02	0.03	0.000
63.1 - 79.4	29	10.90	0.58	0.08	0.11	0.000
79.4 - 100.0	22	8.27	0.67	0.11	0.22	0.000
100.0 - 125.9	15	5.64	0.75	0.16	0.38	0.000
125.9 - 158.5	17	6.39	1.22	0.31	0.69	0.000
158.5 - 199.5	19	7.14	2.24	0.73	1.41	0.001
199.5 - 251.2	19	7.14	3.57	1.45	2.87	0.002
251.2 - 316.2	16	6.02	4.94	2.58	5.45	0.003
316.2 - 398.1	9	3.38	4.67	3.16	8.61	0.004
398.1 - 501.2	19	7.14	15.06	12.63	21.24	0.014
501.2 - 631.0	32	12.03	39.22	40.92	62.16	0.047
631.0 - 794.3	8	3.01	15.62	20.57	82.73	0.024
794.3 - 1000.0	4	1.50	11.07	17.27	100.00	0.020
-----		266.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 231	MAXIMUM DIAMETER = 895.0
SURFACE MEAN = 314	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 377	TOTAL DROPS IN SAMPLE = 266.
SAUTER MEAN = 547	TOTAL OUT OF FOCUS = 80
WEIGHT MEAN = 613	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 602	AVE. DROPS PER FRAME = 1.3
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.61

RELATIVE SPAN = (837.61 - 413.62) / 602.19 = 0.70
 ELAPSED TIME = 68 sec

B X5

Table E3-65

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10225
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36'.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	23	5.31	0.11	0.01	0.01	0.000
25.1 - 31.6	15	3.46	0.11	0.01	0.02	0.000
31.6 - 39.8	25	5.77	0.28	0.03	0.04	0.000
39.8 - 50.1	30	6.93	0.49	0.06	0.10	0.000
50.1 - 63.1	42	9.70	1.09	0.17	0.27	0.000
63.1 - 79.4	47	10.85	1.92	0.37	0.64	0.000
79.4 - 100.0	58	13.39	3.81	0.92	1.56	0.001
100.0 - 125.9	63	14.55	6.55	2.00	3.56	0.002
125.9 - 158.5	30	6.93	4.76	1.79	5.35	0.002
158.5 - 199.5	38	8.78	9.73	4.66	10.00	0.005
199.5 - 251.2	24	5.54	9.63	5.77	15.77	0.007
251.2 - 316.2	9	2.08	6.06	4.70	20.47	0.005
316.2 - 398.1	8	1.85	7.83	7.33	27.80	0.008
398.1 - 501.2	14	3.23	23.30	28.43	56.23	0.033
501.2 - 631.0	3	0.69	7.28	10.70	66.93	0.012
631.0 - 794.3	4	0.92	17.03	33.07	100.00	0.038
-----	433.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 123	MAXIMUM DIAMETER = 761.4
SURFACE MEAN = 168	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 219	TOTAL DROPS IN SAMPLE = 433.
SAUTER MEAN = 372	TOTAL OUT OF FOCUS = 83
WEIGHT MEAN = 495	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 482	AVE. DROPS PER FRAME = 2.2
SAMPLE SIZE CHECK = 0.10	DEVIATION = 0.74

RELATIVE SPAN = (724.75 - 199.49) / 482.32 = 1.09
 ELAPSED TIME = 31 sec

B X5

Table E3-66

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10226
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	3.05	0.04	0.00	0.00	0.000
25.1 - 31.6	16	5.42	0.12	0.01	0.01	0.000
31.6 - 39.8	14	4.75	0.15	0.01	0.02	0.000
39.8 - 50.1	14	4.75	0.23	0.02	0.05	0.000
50.1 - 63.1	31	10.51	0.79	0.10	0.15	0.000
63.1 - 79.4	29	9.83	1.19	0.19	0.34	0.000
79.4 - 100.0	42	14.24	2.75	0.56	0.89	0.001
100.0 - 125.9	33	11.19	3.26	0.81	1.70	0.001
125.9 - 158.5	28	9.49	4.86	1.60	3.30	0.002
158.5 - 199.5	24	8.14	6.01	2.37	5.68	0.003
199.5 - 251.2	18	6.10	7.34	3.70	9.38	0.004
251.2 - 316.2	7	2.37	4.62	2.96	12.34	0.003
316.2 - 398.1	7	2.37	7.01	5.52	17.86	0.006
398.1 - 501.2	5	1.69	8.39	8.58	26.43	0.010
501.2 - 631.0	14	4.75	36.26	45.95	72.38	0.053
631.0 - 794.3	4	1.36	16.97	27.62	100.00	0.032
-----	295.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 144	MAXIMUM DIAMETER = 779.3
SURFACE MEAN = 202	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 263	TOTAL DROPS IN SAMPLE = 295.
SAUTER MEAN = 444	TOTAL OUT OF FOCUS = 85
WEIGHT MEAN = 543	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 579	AVE. DROPS PER FRAME = 1.5
SAMPLE SIZE CHECK = 0.09	DEVIATION = 0.75

RELATIVE SPAN = (727.49 - 265.10) / 579.80 = 0.80
 ELAPSED TIME = 41 sec

B X5

Table E3-67

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10227
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	19	5.16	0.08	0.00	0.00	0.000
25.1 - 31.6	22	5.98	0.13	0.01	0.01	0.000
31.6 - 39.8	22	5.98	0.21	0.02	0.03	0.000
39.8 - 50.1	32	8.70	0.45	0.04	0.07	0.000
50.1 - 63.1	34	9.24	0.74	0.08	0.15	0.000
63.1 - 79.4	48	13.04	1.65	0.23	0.39	0.000
79.4 - 100.0	40	10.87	2.22	0.40	0.78	0.000
100.0 - 125.9	44	11.96	3.86	0.87	1.66	0.001
125.9 - 158.5	39	10.60	5.13	1.42	3.07	0.002
158.5 - 199.5	21	5.71	4.46	1.57	4.64	0.002
199.5 - 251.2	8	2.17	2.66	1.17	5.81	0.001
251.2 - 316.2	4	1.09	2.25	1.28	7.09	0.001
316.2 - 398.1	5	1.36	4.33	3.06	10.15	0.004
398.1 - 501.2	9	2.45	12.54	11.32	21.47	0.013
501.2 - 631.0	11	2.99	24.16	27.28	48.74	0.031
631.0 - 794.3	8	2.17	24.88	33.51	82.26	0.038
794.3 - 1000.0	2	0.54	10.26	17.74	100.00	0.020
-----	368.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 131	MAXIMUM DIAMETER = 925.1
SURFACE MEAN = 199	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 271	TOTAL DROPS IN SAMPLE = 368.
SAUTER MEAN = 503	TOTAL OUT OF FOCUS = 87
WEIGHT MEAN = 615	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 638	AVE. DROPS PER FRAME = 1.8
SAMPLE SIZE CHECK = 0.11	DEVIATION = 0.79

RELATIVE SPAN = (852.09 - 394.33) / 638.06 = 0.72
 ELAPSED TIME = 43 sec

B X5

Table E3-68

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10228
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -36".

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	67	30.04	0.17	0.01	0.01	0.000	
25.1 - 31.6	9	4.04	0.03	0.00	0.01	0.000	
31.6 - 39.8	7	3.14	0.04	0.00	0.01	0.000	
39.8 - 50.1	7	3.14	0.07	0.00	0.01	0.000	
50.1 - 63.1	12	5.38	0.17	0.01	0.03	0.000	
63.1 - 79.4	13	5.83	0.28	0.03	0.06	0.000	
79.4 - 100.0	12	5.38	0.43	0.06	0.12	0.000	
100.0 - 125.9	12	5.38	0.63	0.11	0.23	0.000	
125.9 - 158.5	12	5.38	1.03	0.22	0.45	0.000	
158.5 - 199.5	10	4.48	1.43	0.40	0.85	0.000	
199.5 - 251.2	9	4.04	2.10	0.75	1.59	0.001	
251.2 - 316.2	3	1.35	1.02	0.44	2.03	0.000	
316.2 - 398.1	2	0.90	1.22	0.70	2.73	0.001	
398.1 - 501.2	6	2.69	5.50	3.88	6.60	0.004	
501.2 - 631.0	19	8.52	28.19	25.29	31.89	0.029	
631.0 - 794.3	16	7.17	35.23	38.58	70.46	0.044	
794.3 - 1000.0	7	3.14	22.45	29.54	100.00	0.034	
-----		223.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	200	MAXIMUM DIAMETER =	911.2
SURFACE MEAN =	320	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	405	TOTAL DROPS IN SAMPLE =	223.
SAUTER MEAN =	652	TOTAL OUT OF FOCUS =	88
WEIGHT MEAN =	704	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	718	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.05	DEVIATION =	0.72

RELATIVE SPAN = (874.33 - 532.54) / 719.00 = 0.48
 ELAPSED TIME = 162 sec

B X5

Table E3-69

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89

TESTS INCLUDED: 10220 10221 10222 10223 10224 10225 10226 10227 10228

PRESSURE 56.0 PSI

CENTERLINE COORD 48.0 INCHES

RADIAL COORD 0.00 - 54.00 INCHES

AZIMUTHAL ANGLE 0.0 - 48.4 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

Y AXIS = -36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	177	6.97	0.05	0.00	0.00	0.000
25.1 - 31.6	119	4.68	0.06	0.00	0.01	0.000
31.6 - 39.8	120	4.72	0.09	0.01	0.01	0.000
39.8 - 50.1	138	5.43	0.15	0.01	0.02	0.000
50.1 - 63.1	199	7.83	0.33	0.03	0.06	0.000
63.1 - 79.4	225	8.85	0.59	0.08	0.14	0.000
79.4 - 100.0	238	9.37	0.99	0.17	0.30	0.000
100.0 - 125.9	225	8.85	1.47	0.31	0.61	0.000
125.9 - 158.5	185	7.28	1.89	0.49	1.10	0.001
158.5 - 199.5	174	6.85	2.80	0.92	2.02	0.001
199.5 - 251.2	121	4.76	3.13	1.30	3.32	0.001
251.2 - 316.2	82	3.23	3.38	1.78	5.09	0.002
316.2 - 398.1	86	3.38	5.71	3.80	8.89	0.004
398.1 - 501.2	147	5.79	15.65	13.19	22.08	0.015
501.2 - 631.0	196	7.71	32.44	34.07	56.14	0.039
631.0 - 794.3	79	3.11	19.95	25.88	82.03	0.030
794.3 - 1000.0	29	1.14	10.81	16.98	99.01	0.019
1000.0 - 1258.9	1	0.04	0.53	0.99	100.00	0.001
-----	2541.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 191

SURFACE MEAN = 275

VOLUME MEAN = 345

SAUTER MEAN = 541

WEIGHT MEAN = 616

VOLUME MEDIAN = 613

SAMPLE SIZE CHECK = 0.01

MAXIMUM DIAMETER = 1011.6

MINIMUM DIAMETER = 24.2

TOTAL DROPS IN SAMPLE = 2541.

TOTAL OUT OF FOCUS = 733

TOTAL FRAMES IN SAMPLE = 1800

AVE. DROPS PER FRAME = 1.4

DEVIATION = 0.68

RELATIVE SPAN = (889.81 - 410.14) / 613.18 = 0.78

ELAPSED TIME = 745 sec

B X5

C112

Table E3-70

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10198
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	12	5.53	0.05	0.00	0.00	0.000
25.1 - 31.6	19	8.76	0.11	0.01	0.01	0.000
31.6 - 39.8	18	8.29	0.15	0.01	0.02	0.000
39.8 - 50.1	10	4.61	0.14	0.01	0.03	0.000
50.1 - 63.1	25	11.52	0.52	0.04	0.07	0.000
63.1 - 79.4	19	8.76	0.61	0.06	0.13	0.000
79.4 - 100.0	21	9.68	1.08	0.15	0.28	0.000
100.0 - 125.9	21	9.68	1.70	0.29	0.57	0.000
125.9 - 158.5	12	5.53	1.52	0.32	0.89	0.000
158.5 - 199.5	19	8.76	3.90	1.06	1.95	0.001
199.5 - 251.2	6	2.76	1.90	0.64	2.59	0.001
251.2 - 316.2	5	2.30	2.66	1.16	3.76	0.001
316.2 - 398.1	2	0.92	1.72	0.95	4.71	0.001
398.1 - 501.2	5	2.30	6.99	4.92	9.63	0.006
501.2 - 631.0	9	4.15	17.68	14.88	24.50	0.017
631.0 - 794.3	6	2.76	17.71	18.21	42.71	0.021
794.3 - 1000.0	7	3.23	33.96	44.79	87.50	0.051
1000.0 - 1258.9	1	0.46	7.61	12.50	100.00	0.014
-----	217.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 166	MAXIMUM DIAMETER = 1088.4
SURFACE MEAN = 267	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 362	TOTAL DROPS IN SAMPLE = 217.
SAUTER MEAN = 662	TOTAL OUT OF FOCUS = 31
WEIGHT MEAN = 771	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 835	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.12	DEVIATION = 0.80

RELATIVE SPAN = (1018.02 - 505.91) / 835.55 = 0.61
 ELAPSED TIME = 137 sec

B X5

Table E3-71

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10199
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18'.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 - 31.6	1	0.44	0.00	0.00	0.00	0.000
31.6 - 39.8	2	0.89	0.01	0.00	0.00	0.000
39.8 - 50.1	2	0.89	0.02	0.00	0.00	0.000
50.1 - 63.1	3	1.33	0.03	0.00	0.01	0.000
63.1 - 79.4	7	3.11	0.13	0.02	0.03	0.000
79.4 - 100.0	2	0.89	0.06	0.01	0.04	0.000
100.0 - 125.9	4	1.78	0.18	0.05	0.09	0.000
125.9 - 158.5	6	2.67	0.43	0.15	0.24	0.000
158.5 - 199.5	9	4.00	1.09	0.50	0.74	0.001
199.5 - 251.2	13	5.78	2.39	1.35	2.09	0.002
251.2 - 316.2	35	15.56	10.02	7.05	9.14	0.008
316.2 - 398.1	66	29.33	29.78	26.34	35.48	0.030
398.1 - 501.2	66	29.33	45.32	49.44	84.91	0.057
501.2 - 631.0	8	3.56	9.15	12.89	97.81	0.015
631.0 - 794.3	1	0.44	1.41	2.19	100.00	0.003
-----	225.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 331	MAXIMUM DIAMETER = 632.0
SURFACE MEAN = 354	MINIMUM DIAMETER = 31.2
VOLUME MEAN = 371	TOTAL DROPS IN SAMPLE = 225.
SAUTER MEAN = 406	TOTAL OUT OF FOCUS = 31
WEIGHT MEAN = 427	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 435	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.23

RELATIVE SPAN = (550.99 - 321.09) / 435.82 = 0.53
 ELAPSED TIME = 74 sec

B X5

TYPE FOR
 REVISION

Table E3-72

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10200
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	5	1.57	0.01	0.00	0.00	0.000
25.1 - 31.6	5	1.57	0.02	0.00	0.00	0.000
31.6 - 39.8	5	1.57	0.03	0.00	0.01	0.000
39.8 - 50.1	6	1.89	0.05	0.01	0.01	0.000
50.1 - 63.1	13	4.09	0.19	0.03	0.04	0.000
63.1 - 79.4	13	4.09	0.29	0.05	0.09	0.000
79.4 - 100.0	13	4.09	0.47	0.11	0.20	0.000
100.0 - 125.9	29	9.12	1.54	0.44	0.64	0.001
125.9 - 158.5	23	7.23	1.91	0.68	1.33	0.001
158.5 - 199.5	29	9.12	4.07	1.89	3.22	0.002
199.5 - 251.2	48	15.09	10.58	6.15	9.37	0.007
251.2 - 316.2	58	18.24	20.03	14.57	23.95	0.017
316.2 - 398.1	33	10.38	17.07	15.23	39.18	0.017
398.1 - 501.2	23	7.23	19.88	22.90	62.07	0.026
501.2 - 631.0	12	3.77	17.40	25.99	88.07	0.030
631.0 - 794.3	2	0.63	3.59	5.92	93.99	0.007
794.3 - 1000.0	1	0.31	2.88	6.01	100.00	0.007
-----	318.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	229	MAXIMUM DIAMETER =	813.3
SURFACE MEAN =	268	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	304	TOTAL DROPS IN SAMPLE =	318.
SAUTER MEAN =	389	TOTAL OUT OF FOCUS =	31
WEIGHT MEAN =	455	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	449	AVE. DROPS PER FRAME =	1.6
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.48

RELATIVE SPAN = (681.34 - 255.21) / 449.78 = 0.95
 ELAPSED TIME = 35 sec

B X5

Table E3-73

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10201
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.68	0.01	0.00	0.00	0.000
25.1 - 31.6	5	1.13	0.01	0.00	0.00	0.000
31.6 - 39.8	3	0.68	0.01	0.00	0.00	0.000
39.8 - 50.1	6	1.36	0.04	0.00	0.01	0.000
50.1 - 63.1	11	2.49	0.11	0.02	0.03	0.000
63.1 - 79.4	15	3.39	0.23	0.05	0.07	0.000
79.4 - 100.0	20	4.52	0.50	0.13	0.20	0.000
100.0 - 125.9	27	6.11	1.05	0.34	0.53	0.000
125.9 - 158.5	27	6.11	1.63	0.64	1.18	0.001
158.5 - 199.5	48	10.86	4.85	2.49	3.67	0.003
199.5 - 251.2	73	16.52	11.68	7.53	11.20	0.009
251.2 - 316.2	101	22.85	25.14	20.22	31.42	0.023
316.2 - 398.1	59	13.35	21.81	21.37	52.79	0.024
398.1 - 501.2	28	6.33	16.89	21.16	73.95	0.024
501.2 - 631.0	13	2.94	12.16	18.97	92.91	0.022
631.0 - 794.3	3	0.68	3.89	7.09	100.00	0.008
-----	442.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	241	MAXIMUM DIAMETER =	659.3
SURFACE MEAN =	271	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	296	TOTAL DROPS IN SAMPLE =	442.
SAUTER MEAN =	355	TOTAL OUT OF FOCUS =	33
WEIGHT MEAN =	403	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	388	AVE. DROPS PER FRAME =	2.2
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.37

RELATIVE SPAN = (611.01 - 245.39) / 388.64 = 0.94
 ELAPSED TIME = 29 sec

B X5

Table E3-74

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10202
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18'.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 -	25.1	5	0.61	0.01	0.00	0.00	0.000
25.1 -	31.6	15	1.84	0.03	0.00	0.00	0.000
31.6 -	39.8	12	1.47	0.04	0.00	0.01	0.000
39.8 -	50.1	25	3.07	0.13	0.02	0.03	0.000
50.1 -	63.1	36	4.42	0.28	0.05	0.08	0.000
63.1 -	79.4	60	7.36	0.74	0.17	0.24	0.000
79.4 -	100.0	64	7.85	1.24	0.36	0.60	0.000
100.0 -	125.9	63	7.73	1.96	0.71	1.31	0.001
125.9 -	158.5	64	7.85	3.08	1.39	2.69	0.002
158.5 -	199.5	93	11.41	7.16	4.08	6.77	0.005
199.5 -	251.2	120	14.72	14.45	10.30	17.07	0.012
251.2 -	316.2	145	17.79	27.81	24.98	42.05	0.029
316.2 -	398.1	81	9.94	24.23	27.16	69.21	0.031
398.1 -	501.2	22	2.70	10.54	14.97	84.18	0.017
501.2 -	631.0	7	0.86	4.85	8.27	92.44	0.009
631.0 -	794.3	3	0.37	3.45	7.56	100.00	0.009
-----		815.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	194	MAXIMUM DIAMETER =	716.3
SURFACE MEAN =	225	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	252	TOTAL DROPS IN SAMPLE =	815.
SAUTER MEAN =	316	TOTAL OUT OF FOCUS =	36
WEIGHT MEAN =	366	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	342	AVE. DROPS PER FRAME =	4.1
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.43

RELATIVE SPAN = (590.77 - 219.87) / 342.57 = 1.08
 ELAPSED TIME = 34 sec

B X5

Table E3-75

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10203
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	0.97	0.01	0.00	0.00	0.000
25.1 - 31.6	14	1.95	0.03	0.00	0.00	0.000
31.6 - 39.8	14	1.95	0.04	0.00	0.01	0.000
39.8 - 50.1	29	4.04	0.14	0.02	0.02	0.000
50.1 - 63.1	32	4.46	0.26	0.04	0.06	0.000
63.1 - 79.4	38	5.29	0.46	0.09	0.15	0.000
79.4 - 100.0	41	5.71	0.78	0.19	0.35	0.000
100.0 - 125.9	49	6.82	1.42	0.43	0.78	0.000
125.9 - 158.5	71	9.89	3.41	1.33	2.11	0.002
158.5 - 199.5	94	13.09	6.98	3.38	5.49	0.004
199.5 - 251.2	94	13.09	10.99	6.69	12.18	0.008
251.2 - 316.2	102	14.21	19.02	14.61	26.79	0.017
316.2 - 398.1	77	10.72	22.47	21.63	48.42	0.025
398.1 - 501.2	38	5.29	17.27	20.76	69.18	0.024
501.2 - 631.0	12	1.67	8.64	13.06	82.25	0.015
631.0 - 794.3	5	0.70	5.41	10.02	92.26	0.011
794.3 - 1000.0	0	0.00	0.00	0.00	92.26	0.000
1000.0 - 1258.9	1	0.14	2.67	7.74	100.00	0.009
-----	718.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 206	MAXIMUM DIAMETER = 1074.9
SURFACE MEAN = 245	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 281	TOTAL DROPS IN SAMPLE = 718.
SAUTER MEAN = 371	TOTAL OUT OF FOCUS = 51
WEIGHT MEAN = 463	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 406	AVE. DROPS PER FRAME = 3.6
SAMPLE SIZE CHECK = 0.08	DEVIATION = 0.49

RELATIVE SPAN = (755.79 - 237.28) / 406.43 = 1.28
 ELAPSED TIME = 34 sec

B X5

Table E3-76

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10204
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.36	0.00	0.00	0.00	0.000
25.1 - 31.6	17	2.07	0.03	0.00	0.00	0.000
31.6 - 39.8	20	2.43	0.06	0.01	0.01	0.000
39.8 - 50.1	21	2.55	0.09	0.01	0.02	0.000
50.1 - 63.1	25	3.04	0.17	0.03	0.05	0.000
63.1 - 79.4	44	5.35	0.47	0.09	0.14	0.000
79.4 - 100.0	55	6.68	0.94	0.24	0.38	0.000
100.0 - 125.9	66	8.02	1.74	0.55	0.93	0.001
125.9 - 158.5	77	9.36	3.21	1.27	2.20	0.001
158.5 - 199.5	105	12.76	6.76	3.33	5.53	0.004
199.5 - 251.2	133	16.16	14.15	8.95	14.48	0.010
251.2 - 316.2	123	14.95	19.93	15.56	30.03	0.018
316.2 - 398.1	72	8.75	18.31	17.88	47.91	0.020
398.1 - 501.2	38	4.62	15.10	18.48	66.39	0.021
501.2 - 631.0	15	1.82	9.65	15.01	81.40	0.017
631.0 - 794.3	9	1.09	9.39	18.60	100.00	0.021
-----	823.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 206	MAXIMUM DIAMETER = 794.3
SURFACE MEAN = 242	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 276	TOTAL DROPS IN SAMPLE = 823.
SAUTER MEAN = 360	TOTAL OUT OF FOCUS = 56
WEIGHT MEAN = 436	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 410	AVE. DROPS PER FRAME = 4.1
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.49

RELATIVE SPAN = (705.99 - 229.92) / 410.29 = 1.16
 ELAPSED TIME = 35 sec

R X5

Table E3-77

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10205
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	15	1.30	0.01	0.00	0.00	0.000
25.1 - 31.6	26	2.25	0.04	0.00	0.00	0.000
31.6 - 39.8	31	2.68	0.07	0.01	0.01	0.000
39.8 - 50.1	41	3.55	0.14	0.02	0.03	0.000
50.1 - 63.1	67	5.80	0.35	0.06	0.09	0.000
63.1 - 79.4	66	5.71	0.55	0.11	0.20	0.000
79.4 - 100.0	97	8.40	1.32	0.35	0.55	0.000
100.0 - 125.9	86	7.45	1.87	0.63	1.18	0.001
125.9 - 158.5	103	8.92	3.47	1.45	2.62	0.002
158.5 - 199.5	113	9.78	5.95	3.10	5.72	0.004
199.5 - 251.2	172	14.89	14.71	9.77	15.49	0.011
251.2 - 316.2	169	14.63	22.46	18.59	34.08	0.021
316.2 - 398.1	108	9.35	22.04	22.63	56.71	0.026
398.1 - 501.2	36	3.12	11.74	15.27	71.97	0.017
501.2 - 631.0	17	1.47	8.44	13.49	85.46	0.015
631.0 - 794.3	6	0.52	4.43	8.60	94.06	0.010
794.3 - 1000.0	2	0.17	2.40	5.94	100.00	0.007
-----	1155.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 191	MAXIMUM DIAMETER = 856.1
SURFACE MEAN = 228	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 261	TOTAL DROPS IN SAMPLE = 1155.
SAUTER MEAN = 343	TOTAL OUT OF FOCUS = 60
WEIGHT MEAN = 415	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 376	AVE. DROPS PER FRAME = 5.8
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.49

RELATIVE SPAN = (714.39 - 227.01) / 376.08 = 1.30
 ELAPSED TIME = 36 sec

B X5

Table E3-78

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10206
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	0.62	0.01	0.00	0.00	0.000
25.1 - 31.6	32	2.21	0.05	0.01	0.01	0.000
31.6 - 39.8	40	2.76	0.09	0.01	0.02	0.000
39.8 - 50.1	51	3.51	0.17	0.03	0.04	0.000
50.1 - 63.1	78	5.38	0.42	0.08	0.13	0.000
63.1 - 79.4	87	6.00	0.73	0.18	0.31	0.000
79.4 - 100.0	105	7.24	1.36	0.42	0.73	0.000
100.0 - 125.9	122	8.41	2.55	1.00	1.74	0.001
125.9 - 158.5	186	12.82	6.26	3.13	4.87	0.004
158.5 - 199.5	184	12.68	9.84	6.20	11.07	0.007
199.5 - 251.2	239	16.47	20.01	15.80	26.87	0.018
251.2 - 316.2	173	11.92	22.16	21.64	48.51	0.025
316.2 - 398.1	101	6.96	20.75	25.65	74.16	0.029
398.1 - 501.2	33	2.27	10.08	15.17	89.34	0.017
501.2 - 631.0	11	0.76	5.52	10.66	100.00	0.012
-----	1451.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 176	MAXIMUM DIAMETER = 622.3
SURFACE MEAN = 204	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 228	TOTAL DROPS IN SAMPLE = 1451.
SAUTER MEAN = 287	TOTAL OUT OF FOCUS = 62
WEIGHT MEAN = 330	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 321	AVE. DROPS PER FRAME = 7.3
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.45

RELATIVE SPAN = (508.36 - 193.91) / 321.45 = 0.98
 ELAPSED TIME = 37 sec

B X5

Table E3-79

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10207
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18'.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.25	0.00	0.00	0.00	0.000
25.1 - 31.6	11	1.38	0.02	0.00	0.00	0.000
31.6 - 39.8	10	1.25	0.03	0.00	0.01	0.000
39.8 - 50.1	17	2.13	0.08	0.01	0.02	0.000
50.1 - 63.1	29	3.63	0.20	0.04	0.05	0.000
63.1 - 79.4	32	4.00	0.36	0.08	0.14	0.000
79.4 - 100.0	40	5.00	0.72	0.21	0.35	0.000
100.0 - 125.9	54	6.75	1.51	0.55	0.89	0.001
125.9 - 158.5	80	10.00	3.66	1.70	2.59	0.002
158.5 - 199.5	87	10.88	6.21	3.59	6.19	0.004
199.5 - 251.2	172	21.50	19.87	14.63	20.82	0.017
251.2 - 316.2	140	17.50	24.37	22.03	42.85	0.025
316.2 - 398.1	88	11.00	23.85	26.93	69.78	0.031
398.1 - 501.2	28	3.50	11.90	16.83	86.61	0.019
501.2 - 631.0	8	1.00	5.28	9.31	95.92	0.011
631.0 - 794.3	2	0.25	1.93	4.08	100.00	0.005
-----	800.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	211	MAXIMUM DIAMETER =	684.1
SURFACE MEAN =	237	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	260	TOTAL DROPS IN SAMPLE =	800.
SAUTER MEAN =	312	TOTAL OUT OF FOCUS =	63
WEIGHT MEAN =	354	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	340	AVE. DROPS PER FRAME =	4.0
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.37

RELATIVE SPAN = (546.51 - 218.56) / 340.13 = 0.96
 ELAPSED TIME = 36 sec

B X5

Table E3-80

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10208
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.64	0.01	0.00	0.00	0.000
25.1 - 31.6	5	1.07	0.02	0.00	0.00	0.000
31.6 - 39.8	12	2.56	0.06	0.01	0.01	0.000
39.8 - 50.1	8	1.71	0.06	0.01	0.02	0.000
50.1 - 63.1	18	3.84	0.22	0.04	0.06	0.000
63.1 - 79.4	24	5.12	0.48	0.11	0.17	0.000
79.4 - 100.0	18	3.84	0.56	0.16	0.33	0.000
100.0 - 125.9	34	7.25	1.67	0.61	0.94	0.001
125.9 - 158.5	42	8.96	3.29	1.52	2.46	0.002
158.5 - 199.5	60	12.79	7.36	4.26	6.72	0.005
199.5 - 251.2	95	20.26	18.33	13.33	20.06	0.015
251.2 - 316.2	61	13.01	18.08	16.30	36.36	0.019
316.2 - 398.1	63	13.43	29.34	33.19	69.54	0.038
398.1 - 501.2	22	4.69	16.23	23.10	92.64	0.026
501.2 - 631.0	4	0.85	4.31	7.36	100.00	0.008
-----	469.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 210	MAXIMUM DIAMETER = 556.1
SURFACE MEAN = 238	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 260	TOTAL DROPS IN SAMPLE = 469.
SAUTER MEAN = 313	TOTAL OUT OF FOCUS = 71
WEIGHT MEAN = 348	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 354	AVE. DROPS PER FRAME = 2.3
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.40

RELATIVE SPAN = (489.68 - 216.92) / 354.10 = 0.77
 ELAPSED TIME = 33 sec

B X5

Table E3-81

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10209
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18'.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	20	7.75	0.06	0.00	0.00	0.000
25.1 - 31.6	7	2.71	0.03	0.00	0.01	0.000
31.6 - 39.8	2	0.78	0.01	0.00	0.01	0.000
39.8 - 50.1	3	1.16	0.03	0.00	0.01	0.000
50.1 - 63.1	14	5.43	0.20	0.03	0.04	0.000
63.1 - 79.4	5	1.94	0.12	0.02	0.06	0.000
79.4 - 100.0	8	3.10	0.30	0.07	0.14	0.000
100.0 - 125.9	11	4.26	0.69	0.22	0.35	0.000
125.9 - 158.5	7	2.71	0.71	0.28	0.63	0.000
158.5 - 199.5	16	6.20	2.49	1.23	1.86	0.001
199.5 - 251.2	24	9.30	5.99	3.74	5.60	0.004
251.2 - 316.2	44	17.05	18.21	14.65	20.24	0.017
316.2 - 398.1	70	27.13	43.18	42.41	62.66	0.049
398.1 - 501.2	24	9.30	22.20	26.69	89.34	0.031
501.2 - 631.0	2	0.78	2.69	3.87	93.22	0.004
631.0 - 794.3	0	0.00	0.00	0.00	93.22	0.000
794.3 - 1000.0	1	0.39	3.10	6.78	100.00	0.008
-----	258.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	244	MAXIMUM DIAMETER =	796.1
SURFACE MEAN =	281	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	306	TOTAL DROPS IN SAMPLE =	258.
SAUTER MEAN =	363	TOTAL OUT OF FOCUS =	73
WEIGHT MEAN =	398	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	380	AVE. DROPS PER FRAME =	1.3
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.35

RELATIVE SPAN = (521.50 - 278.69) / 380.21 = 0.64
 ELAPSED TIME = 93 sec

B X5

Table E3-82

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10210
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = -18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	28	10.04	0.09	0.00	0.00	0.000
25.1 - 31.6	12	4.30	0.06	0.00	0.01	0.000
31.6 - 39.8	16	5.73	0.11	0.01	0.01	0.000
39.8 - 50.1	13	4.66	0.14	0.01	0.02	0.000
50.1 - 63.1	14	5.02	0.23	0.02	0.05	0.000
63.1 - 79.4	12	4.30	0.32	0.04	0.08	0.000
79.4 - 100.0	25	8.96	1.07	0.16	0.25	0.000
100.0 - 125.9	29	10.39	1.95	0.37	0.62	0.000
125.9 - 158.5	21	7.53	2.27	0.55	1.17	0.001
158.5 - 199.5	34	12.19	5.81	1.77	2.93	0.002
199.5 - 251.2	30	10.75	7.95	3.01	5.94	0.003
251.2 - 316.2	9	3.23	3.80	1.82	7.76	0.002
316.2 - 398.1	3	1.08	1.86	1.07	8.83	0.001
398.1 - 501.2	11	3.94	12.21	9.47	18.30	0.011
501.2 - 631.0	9	3.23	15.63	15.16	33.46	0.017
631.0 - 794.3	6	2.15	15.48	18.26	51.72	0.021
794.3 - 1000.0	6	2.15	25.37	38.44	90.16	0.044
1000.0 - 1258.9	1	0.36	5.66	9.84	100.00	0.011
-----	279.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 177	MAXIMUM DIAMETER = 1037.2
SURFACE MEAN = 261	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 343	TOTAL DROPS IN SAMPLE = 279.
SAUTER MEAN = 596	TOTAL OUT OF FOCUS = 74
WEIGHT MEAN = 732	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 780	AVE. DROPS PER FRAME = 1.4
SAMPLE SIZE CHECK = 0.10	DEVIATION = 0.77

RELATIVE SPAN = (999.27 - 414.02) / 780.25 = 0.75
 ELAPSED TIME = 114 sec

B X5

Table E3-83

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89

TESTS INCLUDED: 10198 10199 10200 10201 10202 10203 10204 10205 10206 10207
10208 10209 10210

PRESSURE 56.0 PSI

CENTERLINE COORD 48.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 58.4 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

Y AXIS = -18°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	112	1.41	0.01	0.00	0.00	0.000
25.1 - 31.6	169	2.12	0.03	0.00	0.00	0.000
31.6 - 39.8	185	2.32	0.05	0.01	0.01	0.000
39.8 - 50.1	232	2.91	0.10	0.01	0.02	0.000
50.1 - 63.1	365	4.58	0.25	0.04	0.06	0.000
63.1 - 79.4	422	5.29	0.46	0.09	0.15	0.000
79.4 - 100.0	509	6.39	0.89	0.22	0.38	0.000
100.0 - 125.9	595	7.47	1.63	0.51	0.89	0.001
125.9 - 158.5	719	9.02	3.15	1.25	2.13	0.001
158.5 - 199.5	891	11.18	6.16	3.06	5.20	0.004
199.5 - 251.2	1219	15.29	13.42	8.43	13.63	0.010
251.2 - 316.2	1165	14.62	19.94	15.62	29.25	0.018
316.2 - 398.1	823	10.33	21.95	21.45	50.70	0.025
398.1 - 501.2	374	4.69	15.69	19.24	69.94	0.022
501.2 - 631.0	127	1.59	8.44	13.03	82.97	0.015
631.0 - 794.3	43	0.54	4.31	8.17	91.14	0.009
794.3 - 1000.0	17	0.21	2.77	6.69	97.83	0.008
1000.0 - 1258.9	3	0.04	0.74	2.17	100.00	0.002
-----	7970.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 203
SURFACE MEAN = 241
VOLUME MEAN = 276
SAUTER MEAN = 362
WEIGHT MEAN = 445
VOLUME MEDIAN = 395
SAMPLE SIZE CHECK = 0.01

MAXIMUM DIAMETER = 1088.4
MINIMUM DIAMETER = 24.2
TOTAL DROPS IN SAMPLE = 7970.
TOTAL OUT OF FOCUS = 672
TOTAL FRAMES IN SAMPLE = 2600
AVE. DROPS PER FRAME = 3.1
DEVIATION = 0.48

RELATIVE SPAN = (770.11 - 233.28) / 395.79 = 1.36

ELAPSED TIME = 727 sec

B X5

C110

Table E3-84

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10163
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.89	0.00	0.00	0.00	0.000
25.1 - 31.6	9	4.02	0.03	0.00	0.00	0.000
31.6 - 39.8	6	2.68	0.02	0.00	0.00	0.000
39.8 - 50.1	12	5.36	0.08	0.01	0.01	0.000
50.1 - 63.1	19	8.48	0.18	0.02	0.02	0.000
63.1 - 79.4	18	8.04	0.28	0.03	0.06	0.000
79.4 - 100.0	11	4.91	0.28	0.04	0.10	0.000
100.0 - 125.9	20	8.93	0.82	0.16	0.25	0.000
125.9 - 158.5	13	5.80	0.81	0.19	0.44	0.000
158.5 - 199.5	8	3.57	0.82	0.24	0.69	0.000
199.5 - 251.2	6	2.68	0.95	0.35	1.04	0.000
251.2 - 316.2	8	3.57	1.86	0.83	1.87	0.001
316.2 - 398.1	13	5.80	4.94	2.81	4.68	0.003
398.1 - 501.2	25	11.16	16.14	12.04	16.72	0.014
501.2 - 631.0	33	14.73	32.64	30.10	46.82	0.035
631.0 - 794.3	14	6.25	21.27	24.21	71.04	0.028
794.3 - 1000.0	5	2.23	11.83	16.77	87.81	0.019
1000.0 - 1258.9	2	0.89	7.05	12.19	100.00	0.014
224.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 283	MAXIMUM DIAMETER = 1074.9
SURFACE MEAN = 374	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 440	TOTAL DROPS IN SAMPLE = 224.
SAUTER MEAN = 608	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 680	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 654	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.56

RELATIVE SPAN = (1013.81 - 456.70) / 654.27 = 0.85
 ELAPSED TIME = 79 sec

B X5

Table E3-85

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10164
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 - 31.6	3	1.19	0.02	0.00	0.00	0.000
31.6 - 39.8	3	1.19	0.03	0.00	0.01	0.000
39.8 - 50.1	3	1.19	0.04	0.01	0.01	0.000
50.1 - 63.1	6	2.37	0.12	0.02	0.03	0.000
63.1 - 79.4	11	4.35	0.35	0.08	0.12	0.000
79.4 - 100.0	7	2.77	0.39	0.13	0.24	0.000
100.0 - 125.9	16	6.32	1.34	0.53	0.77	0.001
125.9 - 158.5	13	5.14	1.76	0.87	1.65	0.001
158.5 - 199.5	28	11.07	6.03	3.79	5.43	0.004
199.5 - 251.2	55	21.74	19.13	15.31	20.74	0.018
251.2 - 316.2	64	25.30	34.42	34.21	54.95	0.039
316.2 - 398.1	41	16.21	32.78	39.75	94.70	0.046
398.1 - 501.2	3	1.19	3.59	5.30	100.00	0.006
	253.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	225	MAXIMUM DIAMETER =	440.2
SURFACE MEAN =	243	MINIMUM DIAMETER =	27.9
VOLUME MEAN =	257	TOTAL DROPS IN SAMPLE =	253.
SAUTER MEAN =	288	TOTAL OUT OF FOCUS =	1
WEIGHT MEAN =	304	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	309	AVE. DROPS PER FRAME =	1.3
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.27

RELATIVE SPAN = (389.62 - 221.60) / 309.25 = 0.54
 ELAPSED TIME = 55 sec

B X5

Table E3-86

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10165
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.43	0.00	0.00	0.00	0.000
25.1 - 31.6	14	3.04	0.05	0.00	0.00	0.000
31.6 - 39.8	12	2.60	0.07	0.01	0.01	0.000
39.8 - 50.1	25	5.42	0.21	0.03	0.04	0.000
50.1 - 63.1	21	4.56	0.28	0.05	0.09	0.000
63.1 - 79.4	26	5.64	0.54	0.12	0.20	0.000
79.4 - 100.0	44	9.54	1.42	0.37	0.58	0.000
100.0 - 125.9	37	8.03	2.01	0.69	1.27	0.001
125.9 - 158.5	42	9.11	3.56	1.53	2.79	0.002
158.5 - 199.5	44	9.54	5.69	3.00	5.79	0.003
199.5 - 251.2	57	12.36	12.31	8.41	14.20	0.010
251.2 - 316.2	53	11.50	17.94	15.37	29.57	0.018
316.2 - 398.1	54	11.71	28.17	29.88	59.45	0.034
398.1 - 501.2	22	4.77	16.88	21.76	81.22	0.025
501.2 - 631.0	7	1.52	8.80	14.48	95.69	0.017
631.0 - 794.3	1	0.22	2.06	4.31	100.00	0.005
	461.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 190	MAXIMUM DIAMETER = 702.3
SURFACE MEAN = 228	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 259	TOTAL DROPS IN SAMPLE = 461.
SAUTER MEAN = 335	TOTAL OUT OF FOCUS = 1
WEIGHT MEAN = 384	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 376	AVE. DROPS PER FRAME = 2.3
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.49

RELATIVE SPAN = (578.90 - 229.55) / 376.02 = 0.93
 ELAPSED TIME = 27 sec

B X5

Table E3-87

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10166
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	12	1.17	0.03	0.00	0.00	0.000
25.1 - 31.6	31	3.02	0.13	0.02	0.02	0.000
31.6 - 39.8	47	4.59	0.29	0.05	0.07	0.000
39.8 - 50.1	56	5.46	0.54	0.11	0.18	0.000
50.1 - 63.1	87	8.49	1.27	0.33	0.52	0.000
63.1 - 79.4	95	9.27	2.22	0.74	1.26	0.001
79.4 - 100.0	104	10.15	3.93	1.67	2.93	0.002
100.0 - 125.9	140	13.66	8.42	4.51	7.44	0.005
125.9 - 158.5	165	16.10	15.29	10.18	17.62	0.012
158.5 - 199.5	159	15.51	23.18	19.35	36.98	0.022
199.5 - 251.2	69	6.73	15.90	16.69	53.66	0.019
251.2 - 316.2	37	3.61	13.05	16.94	70.61	0.019
316.2 - 398.1	16	1.56	8.98	14.71	85.32	0.017
398.1 - 501.2	6	0.59	5.62	11.93	97.25	0.014
501.2 - 631.0	1	0.10	1.17	2.75	100.00	0.003
1025.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 125	MAXIMUM DIAMETER = 504.3
SURFACE MEAN = 145	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 165	TOTAL DROPS IN SAMPLE = 1025.
SAUTER MEAN = 214	TOTAL OUT OF FOCUS = 3
WEIGHT MEAN = 262	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 240	AVE. DROPS PER FRAME = 5.1
SAMPLE SIZE CHECK = 0.03	DEVIATION = 0.48

RELATIVE SPAN = (437.34 - 136.22) / 240.44 = 1.25
 ELAPSED TIME = 22 sec

B X5

Table E3-88

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
TEST NUMBER 10167
PRESSURE 56.0 PSI
CENTERLINE COORD 48.0 INCHES
RADIAL COORD 30.0 INCHES
DIST FROM NOZZLE 56.6 INCHES
AZIMUTHAL ANGLE 32.0 DEG
CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	41	1.43	0.05	0.01	0.01	0.000
25.1 - 31.6	164	5.73	0.29	0.04	0.04	0.000
31.6 - 39.8	175	6.11	0.46	0.08	0.12	0.000
39.8 - 50.1	210	7.33	0.86	0.17	0.29	0.000
50.1 - 63.1	327	11.42	2.09	0.53	0.82	0.001
63.1 - 79.4	338	11.80	3.41	1.08	1.90	0.001
79.4 - 100.0	406	14.18	6.58	2.63	4.53	0.003
100.0 - 125.9	341	11.91	8.59	4.29	8.82	0.005
125.9 - 158.5	323	11.28	12.86	8.08	16.89	0.009
158.5 - 199.5	238	8.31	14.94	11.77	28.66	0.013
199.5 - 251.2	146	5.10	14.48	14.34	43.01	0.016
251.2 - 316.2	81	2.83	12.53	15.50	58.51	0.018
316.2 - 398.1	51	1.78	12.68	19.89	78.39	0.023
398.1 - 501.2	15	0.52	5.66	10.96	89.35	0.013
501.2 - 631.0	8	0.28	4.52	10.65	100.00	0.012
	2864.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	108	MAXIMUM DIAMETER =	561.3
SURFACE MEAN =	132	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	158	TOTAL DROPS IN SAMPLE =	2864.
SAUTER MEAN =	226	TOTAL OUT OF FOCUS =	5
WEIGHT MEAN =	292	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	281	AVE. DROPS PER FRAME =	14.3
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.61

RELATIVE SPAN = (504.86 - 131.62) / 281.16 = 1.33
ELAPSED TIME = 30 sec

B X5

Table E3-89

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10168
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	42	1.28	0.04	0.01	0.01	0.000
25.1 - 31.6	143	4.35	0.23	0.03	0.04	0.000
31.6 - 39.8	173	5.26	0.42	0.07	0.11	0.000
39.8 - 50.1	213	6.48	0.79	0.17	0.28	0.000
50.1 - 63.1	324	9.85	1.88	0.51	0.80	0.001
63.1 - 79.4	387	11.77	3.53	1.21	2.01	0.001
79.4 - 100.0	499	15.18	7.26	3.14	5.15	0.004
100.0 - 125.9	490	14.90	11.08	5.97	11.12	0.007
125.9 - 158.5	411	12.50	14.59	9.86	20.98	0.011
158.5 - 199.5	292	8.88	16.43	13.96	34.94	0.016
199.5 - 251.2	165	5.02	14.59	15.56	50.50	0.018
251.2 - 316.2	95	2.89	13.64	18.55	69.05	0.021
316.2 - 398.1	31	0.94	6.75	11.28	80.32	0.013
398.1 - 501.2	17	0.52	5.67	11.73	92.05	0.013
501.2 - 631.0	6	0.18	3.10	7.95	100.00	0.009
	3288.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	109	MAXIMUM DIAMETER =	563.7
SURFACE MEAN =	130	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	152	TOTAL DROPS IN SAMPLE =	3288.
SAUTER MEAN =	209	TOTAL OUT OF FOCUS =	6
WEIGHT MEAN =	271	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	249	AVE. DROPS PER FRAME =	16.4
SAMPLE SIZE CHECK =	0.02	DEVIATION =	0.56

RELATIVE SPAN = (482.47 - 121.96) / 249.64 = 1.44
 ELAPSED TIME = 33 sec

B X5

Table E3-90

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10169
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	42	1.13	0.04	0.00	0.00	0.000
25.1 - 31.6	200	5.36	0.32	0.04	0.05	0.000
31.6 - 39.8	238	6.38	0.57	0.09	0.13	0.000
39.8 - 50.1	261	6.99	0.94	0.18	0.32	0.000
50.1 - 63.1	464	12.43	2.66	0.65	0.97	0.001
63.1 - 79.4	512	13.72	4.64	1.43	2.40	0.002
79.4 - 100.0	568	15.22	8.18	3.18	5.59	0.004
100.0 - 125.9	552	14.79	12.47	6.08	11.67	0.007
125.9 - 158.5	381	10.21	13.50	8.24	19.91	0.009
158.5 - 199.5	244	6.54	13.39	10.17	30.09	0.012
199.5 - 251.2	140	3.75	12.09	11.54	41.62	0.013
251.2 - 316.2	69	1.85	9.52	11.48	53.11	0.013
316.2 - 398.1	38	1.02	8.50	13.04	66.15	0.015
398.1 - 501.2	8	0.21	2.86	5.53	71.68	0.006
501.2 - 631.0	10	0.27	5.68	13.88	85.56	0.016
631.0 - 794.3	5	0.13	4.63	14.44	100.00	0.017
3732.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 100	MAXIMUM DIAMETER = 787.7
SURFACE MEAN = 122	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 151	TOTAL DROPS IN SAMPLE = 3732.
SAUTER MEAN = 232	TOTAL OUT OF FOCUS = 9
WEIGHT MEAN = 355	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 298	AVE. DROPS PER FRAME = 18.7
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.66

RELATIVE SPAN = (678.08 - 119.96) / 298.71 = 1.87
 ELAPSED TIME = 34 sec

B X5

Table E3-91

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10170
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	48	1.33	0.04	0.00	0.00	0.000
25.1 - 31.6	191	5.28	0.23	0.03	0.03	0.000
31.6 - 39.8	174	4.81	0.32	0.05	0.08	0.000
39.8 - 50.1	227	6.27	0.63	0.12	0.20	0.000
50.1 - 63.1	389	10.75	1.70	0.40	0.60	0.000
63.1 - 79.4	371	10.25	2.61	0.78	1.38	0.001
79.4 - 100.0	466	12.88	5.16	1.93	3.31	0.002
100.0 - 125.9	477	13.18	8.37	3.95	7.26	0.005
125.9 - 158.5	430	11.88	11.66	6.83	14.09	0.008
158.5 - 199.5	383	10.58	16.44	12.12	26.21	0.014
199.5 - 251.2	241	6.66	16.22	14.97	41.18	0.017
251.2 - 316.2	112	3.09	11.88	13.77	54.95	0.016
316.2 - 398.1	72	1.99	11.55	16.45	71.40	0.019
398.1 - 501.2	25	0.69	7.09	13.43	84.83	0.015
501.2 - 631.0	10	0.28	4.09	9.31	94.14	0.011
631.0 - 794.3	3	0.08	2.01	5.86	100.00	0.007
3619.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 117	MAXIMUM DIAMETER = 753.3
SURFACE MEAN = 142	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 169	TOTAL DROPS IN SAMPLE = 3619.
SAUTER MEAN = 241	TOTAL OUT OF FOCUS = 14
WEIGHT MEAN = 322	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 293	AVE. DROPS PER FRAME = 18.1
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.60

RELATIVE SPAN = (571.27 - 140.71) / 293.27 = 1.47
 ELAPSED TIME = 38 sec

B X5

Table E3-92

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10171
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	34	1.05	0.03	0.00	0.00	0.000
25.1 - 31.6	102	3.15	0.15	0.02	0.03	0.000
31.6 - 39.8	121	3.74	0.27	0.05	0.08	0.000
39.8 - 50.1	180	5.56	0.62	0.15	0.23	0.000
50.1 - 63.1	254	7.84	1.37	0.41	0.64	0.000
63.1 - 79.4	322	9.94	2.77	1.04	1.68	0.001
79.4 - 100.0	412	12.72	5.63	2.68	4.36	0.003
100.0 - 125.9	530	16.37	11.37	6.77	11.13	0.008
125.9 - 158.5	520	16.06	17.47	13.02	24.15	0.015
158.5 - 199.5	402	12.42	21.18	19.78	43.93	0.023
199.5 - 251.2	238	7.35	19.80	23.25	67.18	0.027
251.2 - 316.2	88	2.72	11.13	16.09	83.28	0.018
316.2 - 398.1	27	0.83	5.40	9.81	93.08	0.011
398.1 - 501.2	7	0.22	2.17	4.89	97.97	0.006
501.2 - 631.0	1	0.03	0.63	2.03	100.00	0.002
3238.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 119	MAXIMUM DIAMETER = 614.5
SURFACE MEAN = 135	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 152	TOTAL DROPS IN SAMPLE = 3238.
SAUTER MEAN = 191	TOTAL OUT OF FOCUS = 17
WEIGHT MEAN = 230	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 214	AVE. DROPS PER FRAME = 16.2
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.44

RELATIVE SPAN = (371.32 - 122.62) / 214.02 = 1.16
 ELAPSED TIME = 34 sec

B X5

Table E3-93

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10172
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	29	1.23	0.04	0.00	0.00	0.000
25.1 - 31.6	121	5.12	0.23	0.03	0.03	0.000
31.6 - 39.8	116	4.91	0.33	0.05	0.07	0.000
39.8 - 50.1	158	6.69	0.68	0.12	0.19	0.000
50.1 - 63.1	212	8.97	1.43	0.31	0.51	0.000
63.1 - 79.4	274	11.60	2.92	0.80	1.30	0.001
79.4 - 100.0	302	12.78	5.17	1.79	3.09	0.002
100.0 - 125.9	340	14.39	9.10	3.94	7.03	0.005
125.9 - 158.5	322	13.63	13.48	7.30	14.33	0.008
158.5 - 199.5	217	9.18	14.30	9.73	24.06	0.011
199.5 - 251.2	139	5.88	14.34	12.19	36.25	0.014
251.2 - 316.2	70	2.96	11.52	12.37	48.62	0.014
316.2 - 398.1	32	1.35	8.42	11.42	60.04	0.013
398.1 - 501.2	18	0.76	7.02	11.61	71.64	0.013
501.2 - 631.0	10	0.42	6.68	14.43	86.07	0.017
631.0 - 794.3	1	0.04	1.14	3.19	89.27	0.004
794.3 - 1000.0	2	0.08	3.20	10.73	100.00	0.012
2363.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 115	MAXIMUM DIAMETER = 937.8
SURFACE MEAN = 141	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 174	TOTAL DROPS IN SAMPLE = 2363.
SAUTER MEAN = 262	TOTAL OUT OF FOCUS = 18
WEIGHT MEAN = 388	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 326	AVE. DROPS PER FRAME = 11.8
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.64

RELATIVE SPAN = (803.90 - 141.08) / 326.06 = 2.03
 ELAPSED TIME = 29 sec

B X5

Table E3-94

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10173
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	0.92	0.02	0.00	0.00	0.000
25.1 - 31.6	32	3.27	0.13	0.02	0.02	0.000
31.6 - 39.8	36	3.67	0.22	0.03	0.05	0.000
39.8 - 50.1	47	4.80	0.43	0.09	0.14	0.000
50.1 - 63.1	71	7.24	1.03	0.26	0.40	0.000
63.1 - 79.4	83	8.47	1.88	0.59	0.99	0.001
79.4 - 100.0	110	11.22	3.98	1.58	2.57	0.002
100.0 - 125.9	141	14.39	8.14	4.07	6.64	0.005
125.9 - 158.5	161	16.43	14.85	9.38	16.02	0.011
158.5 - 199.5	154	15.71	21.99	17.30	33.31	0.020
199.5 - 251.2	74	7.55	16.15	15.71	49.02	0.018
251.2 - 316.2	36	3.67	12.59	15.51	64.53	0.018
316.2 - 398.1	20	2.04	11.02	17.04	81.57	0.020
398.1 - 501.2	3	0.31	2.53	4.82	86.39	0.006
501.2 - 631.0	2	0.20	2.94	7.38	93.77	0.008
631.0 - 794.3	1	0.10	2.09	6.23	100.00	0.007
	980.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	129	MAXIMUM DIAMETER =	680.2
SURFACE MEAN =	150	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	172	TOTAL DROPS IN SAMPLE =	980.
SAUTER MEAN =	227	TOTAL OUT OF FOCUS =	18
WEIGHT MEAN =	295	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	255	AVE. DROPS PER FRAME =	4.9
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.49

RELATIVE SPAN = (562.28 - 140.13) / 255.40 = 1.65
 ELAPSED TIME = 22 sec

B X5

Table E3-95

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10174
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.01	0.01	0.00	0.00	0.000
25.1 - 31.6	7	1.77	0.02	0.00	0.00	0.000
31.6 - 39.8	11	2.78	0.05	0.01	0.01	0.000
39.8 - 50.1	15	3.79	0.11	0.01	0.02	0.000
50.1 - 63.1	23	5.81	0.26	0.04	0.06	0.000
63.1 - 79.4	21	5.30	0.36	0.07	0.13	0.000
79.4 - 100.0	23	5.81	0.66	0.16	0.28	0.000
100.0 - 125.9	27	6.82	1.21	0.37	0.65	0.000
125.9 - 158.5	21	5.30	1.40	0.51	1.16	0.001
158.5 - 199.5	35	8.84	4.02	1.93	3.10	0.002
199.5 - 251.2	35	8.84	6.23	3.73	6.83	0.004
251.2 - 316.2	61	15.40	17.93	13.82	20.65	0.016
316.2 - 398.1	66	16.67	28.06	26.01	46.66	0.030
398.1 - 501.2	28	7.07	18.53	21.43	68.09	0.025
501.2 - 631.0	16	4.04	16.75	24.39	92.47	0.028
631.0 - 794.3	3	0.76	4.40	7.53	100.00	0.009
396.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	227	MAXIMUM DIAMETER =	664.6
SURFACE MEAN =	269	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	302	TOTAL DROPS IN SAMPLE =	396.
SAUTER MEAN =	379	TOTAL OUT OF FOCUS =	21
WEIGHT MEAN =	424	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	415	AVE. DROPS PER FRAME =	2.0
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.45

RELATIVE SPAN = (618.23 - 271.93) / 415.24 = 0.83
 ELAPSED TIME = 28 sec

B X5

Table E3-96

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89
 TEST NUMBER 10175
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.95	0.01	0.00	0.00	0.000
25.1 - 31.6	18	8.53	0.07	0.00	0.00	0.000
31.6 - 39.8	20	9.48	0.12	0.01	0.01	0.000
39.8 - 50.1	11	5.21	0.09	0.01	0.02	0.000
50.1 - 63.1	21	9.95	0.29	0.03	0.05	0.000
63.1 - 79.4	16	7.58	0.36	0.05	0.09	0.000
79.4 - 100.0	16	7.58	0.57	0.09	0.18	0.000
100.0 - 125.9	18	8.53	1.02	0.20	0.39	0.000
125.9 - 158.5	8	3.79	0.65	0.16	0.55	0.000
158.5 - 199.5	7	3.32	1.02	0.33	0.88	0.000
199.5 - 251.2	4	1.90	0.89	0.36	1.23	0.000
251.2 - 316.2	2	0.95	0.59	0.27	1.50	0.000
316.2 - 398.1	4	1.90	2.26	1.44	2.94	0.002
398.1 - 501.2	20	9.48	19.21	15.97	18.91	0.018
501.2 - 631.0	28	13.27	39.27	39.43	58.34	0.045
631.0 - 794.3	15	7.11	29.90	35.67	94.01	0.041
794.3 - 1000.0	1	0.47	3.69	5.99	100.00	0.007
	211.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 233	MAXIMUM DIAMETER = 923.0
SURFACE MEAN = 330	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 396	TOTAL DROPS IN SAMPLE = 211.
SAUTER MEAN = 569	TOTAL OUT OF FOCUS = 21
WEIGHT MEAN = 607	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 611	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.06	DEVIATION = 0.62

RELATIVE SPAN = (777.80 - 463.19) / 611.37 = 0.51
 ELAPSED TIME = 131 sec

B X5

Table E3-97

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/22/89

TESTS INCLUDED: 10163 10164 10165 10166 10167 10168 10169 10170 10171
10172 10173 10174 10175

PRESSURE 0.0 - 56.0 PSI
CENTERLINE COORD 0.00 - 48.00 INCHES
RADIAL COORD 0.00 - 78.00 INCHES
AZIMUTHAL ANGLE 0.0 - 31.6 DEG
CYLINDRICAL ANGLE 0 - 90 DEG

8 NOZZLES 1 FT. APART
TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	267	1.18	0.03	0.00	0.00	0.000
25.1 - 31.6	1035	4.57	0.18	0.02	0.02	0.000
31.6 - 39.8	1132	5.00	0.30	0.04	0.06	0.000
39.8 - 50.1	1418	6.26	0.57	0.09	0.15	0.000
50.1 - 63.1	2218	9.79	1.40	0.28	0.44	0.000
63.1 - 79.4	2474	10.92	2.48	0.63	1.07	0.001
79.4 - 100.0	2968	13.10	4.73	1.53	2.60	0.002
100.0 - 125.9	3129	13.81	7.84	3.17	5.77	0.004
125.9 - 158.5	2810	12.40	11.02	5.58	11.34	0.006
158.5 - 199.5	2211	9.76	13.66	8.67	20.01	0.010
199.5 - 251.2	1369	6.04	13.34	10.64	30.65	0.012
251.2 - 316.2	776	3.43	12.00	12.06	42.71	0.014
316.2 - 398.1	465	2.05	11.17	13.98	56.69	0.016
398.1 - 501.2	197	0.87	7.59	12.06	68.75	0.014
501.2 - 631.0	132	0.58	8.04	16.01	84.76	0.018
631.0 - 794.3	43	0.19	4.01	9.88	94.64	0.011
794.3 - 1000.0	8	0.04	1.20	3.73	98.37	0.004
1000.0 - 1258.9	2	0.01	0.44	1.63	100.00	0.002
22654.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 120	MAXIMUM DIAMETER = 1074.9
SURFACE MEAN = 149	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 184	TOTAL DROPS IN SAMPLE = 22654.
SAUTER MEAN = 281	TOTAL OUT OF FOCUS = 134
WEIGHT MEAN = 399	TOTAL FRAMES IN SAMPLE = 2600
VOLUME MEDIAN = 359	AVE. DROPS PER FRAME = 8.7
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.66

RELATIVE SPAN = (715.14 - 151.83) / 359.45 = 1.57
ELAPSED TIME = 562 sec

B x5

Table E3-98

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10185
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.89	0.02	0.00	0.00	0.000
25.1 - 31.6	12	5.66	0.09	0.01	0.01	0.000
31.6 - 39.8	9	4.25	0.10	0.01	0.01	0.000
39.8 - 50.1	13	6.13	0.22	0.02	0.03	0.000
50.1 - 63.1	13	6.13	0.33	0.04	0.07	0.000
63.1 - 79.4	15	7.08	0.62	0.09	0.16	0.000
79.4 - 100.0	16	7.55	1.05	0.19	0.34	0.000
100.0 - 125.9	22	10.38	2.30	0.52	0.86	0.001
125.9 - 158.5	25	11.79	4.22	1.21	2.07	0.001
158.5 - 199.5	32	15.09	8.36	2.97	5.05	0.003
199.5 - 251.2	17	8.02	6.60	2.87	7.92	0.003
251.2 - 316.2	10	4.72	6.92	4.01	11.93	0.005
316.2 - 398.1	2	0.94	1.79	1.17	13.10	0.001
398.1 - 501.2	4	1.89	6.62	5.98	19.07	0.007
501.2 - 631.0	9	4.25	21.61	23.34	42.41	0.027
631.0 - 794.3	6	2.83	22.31	29.93	72.33	0.034
794.3 - 1000.0	3	1.42	16.85	27.67	100.00	0.032
212.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	172	MAXIMUM DIAMETER =	839.5
SURFACE MEAN =	239	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	306	TOTAL DROPS IN SAMPLE =	212.
SAUTER MEAN =	502	TOTAL OUT OF FOCUS =	9
WEIGHT MEAN =	614	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	677	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.10	DEVIATION =	0.74

RELATIVE SPAN = (824.51 - 286.44) / 677.40 = 0.79
 ELAPSED TIME = 212 sec

B X5

Table E3-99

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10186
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	1.34	0.01	0.00	0.00	0.000
25.1 - 31.6	6	2.68	0.02	0.00	0.00	0.000
31.6 - 39.8	7	3.12	0.04	0.00	0.01	0.000
39.8 - 50.1	6	2.68	0.05	0.01	0.01	0.000
50.1 - 63.1	10	4.46	0.14	0.02	0.03	0.000
63.1 - 79.4	7	3.12	0.15	0.03	0.06	0.000
79.4 - 100.0	16	7.14	0.56	0.12	0.17	0.000
100.0 - 125.9	14	6.25	0.79	0.21	0.38	0.000
125.9 - 158.5	16	7.14	1.36	0.44	0.82	0.001
158.5 - 199.5	12	5.36	1.78	0.76	1.58	0.001
199.5 - 251.2	13	5.80	2.94	1.55	3.13	0.002
251.2 - 316.2	9	4.02	3.29	2.21	5.33	0.003
316.2 - 398.1	42	18.75	25.35	21.87	27.20	0.025
398.1 - 501.2	49	21.87	42.69	44.19	71.39	0.051
501.2 - 631.0	13	5.80	18.22	23.96	95.35	0.027
631.0 - 794.3	1	0.45	2.61	4.65	100.00	0.005
	224.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 266	MAXIMUM DIAMETER = 764.3
SURFACE MEAN = 316	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 350	TOTAL DROPS IN SAMPLE = 224.
SAUTER MEAN = 429	TOTAL OUT OF FOCUS = 9
WEIGHT MEAN = 462	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 460	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.42

RELATIVE SPAN = (602.61 - 345.62) / 460.35 = 0.56
 ELAPSED TIME = 83 sec

B X5

Table E3-100

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10187
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.65	0.01	0.00	0.00	0.000
25.1 - 31.6	7	2.26	0.03	0.00	0.00	0.000
31.6 - 39.8	6	1.94	0.04	0.00	0.01	0.000
39.8 - 50.1	5	1.61	0.04	0.00	0.01	0.000
50.1 - 63.1	18	5.81	0.25	0.03	0.04	0.000
63.1 - 79.4	18	5.81	0.41	0.07	0.11	0.000
79.4 - 100.0	21	6.77	0.74	0.16	0.27	0.000
100.0 - 125.9	21	6.77	1.17	0.31	0.58	0.000
125.9 - 158.5	22	7.10	1.92	0.64	1.22	0.001
158.5 - 199.5	24	7.74	3.35	1.40	2.62	0.002
199.5 - 251.2	27	8.71	5.93	3.12	5.74	0.004
251.2 - 316.2	61	19.68	21.66	14.50	20.24	0.017
316.2 - 398.1	49	15.81	25.04	20.10	40.34	0.023
398.1 - 501.2	16	5.16	13.65	14.21	54.55	0.016
501.2 - 631.0	8	2.58	10.51	13.49	68.04	0.015
631.0 - 794.3	3	0.97	5.82	9.06	77.10	0.010
794.3 - 1000.0	0	0.00	0.00	0.00	77.10	0.000
1000.0 - 1258.9	2	0.65	9.44	22.90	100.00	0.026
	310.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 228	MAXIMUM DIAMETER = 1074.4
SURFACE MEAN = 273	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 318	TOTAL DROPS IN SAMPLE = 310.
SAUTER MEAN = 431	TOTAL OUT OF FOCUS = 9
WEIGHT MEAN = 563	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 468	AVE. DROPS PER FRAME = 1.5
SAMPLE SIZE CHECK = 0.12	DEVIATION = 0.51

RELATIVE SPAN = (1043.62 - 278.02) / 468.95 = 1.63
 ELAPSED TIME = 31 sec

B X5

Table E3-101

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10188
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 - 31.6	22	4.45	0.07	0.01	0.01	0.000
31.6 - 39.8	14	2.83	0.07	0.01	0.01	0.000
39.8 - 50.1	12	2.43	0.10	0.01	0.02	0.000
50.1 - 63.1	41	8.30	0.47	0.07	0.10	0.000
63.1 - 79.4	32	6.48	0.60	0.12	0.21	0.000
79.4 - 100.0	41	8.30	1.20	0.29	0.50	0.000
100.0 - 125..	41	8.30	2.00	0.62	1.12	0.001
125.9 - 158.5	51	10.32	3.88	1.50	2.62	0.002
158.5 - 199.5	39	7.89	4.57	2.20	4.82	0.003
199.5 - 251.2	58	11.74	11.18	6.88	11.70	0.008
251.2 - 316.2	59	11.94	17.85	13.77	25.47	0.016
316.2 - 398.1	45	9.11	19.95	18.63	44.10	0.021
398.1 - 501.2	23	4.66	16.01	18.74	62.83	0.021
501.2 - 631.0	11	2.23	12.46	18.61	81.45	0.021
631.0 - 794.3	5	1.01	9.59	18.55	100.00	0.021
	494.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	190	MAXIMUM DIAMETER =	750.8
SURFACE MEAN =	233	MINIMUM DIAMETER =	27.9
VOLUME MEAN =	272	TOTAL DROPS IN SAMPLE =	494.
SAUTER MEAN =	372	TOTAL OUT OF FOCUS =	9
WEIGHT MEAN =	447	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	432	AVE. DROPS PER FRAME =	2.5
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.56

RELATIVE SPAN = (686.68 - 241.15)/ 432.00 = 1.03
 ELAPSED TIME = 25 sec

B X5

Table E3-102

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10189
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.33	0.00	0.00	0.00	0.000
25.1 - 31.6	10	1.66	0.02	0.00	0.00	0.000
31.6 - 39.8	10	1.66	0.04	0.00	0.01	0.000
39.8 - 50.1	9	1.49	0.05	0.01	0.01	0.000
50.1 - 63.1	24	3.98	0.22	0.04	0.05	0.000
63.1 - 79.4	27	4.48	0.39	0.08	0.14	0.000
79.4 - 100.0	29	4.81	0.64	0.17	0.31	0.000
100.0 - 125.9	42	6.97	1.54	0.54	0.84	0.001
125.9 - 158.5	55	9.12	3.07	1.31	2.15	0.002
158.5 - 199.5	72	11.94	6.52	3.55	5.71	0.004
199.5 - 251.2	105	17.41	14.81	10.08	15.78	0.012
251.2 - 316.2	122	20.23	28.04	24.33	40.12	0.028
316.2 - 398.1	68	11.28	23.76	25.40	65.52	0.029
398.1 - 501.2	19	3.15	10.75	14.62	80.14	0.017
501.2 - 631.0	6	1.00	5.74	10.18	90.32	0.012
631.0 - 794.3	3	0.50	4.42	9.68	100.00	0.011
	603.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	212	MAXIMUM DIAMETER =	774.2
SURFACE MEAN =	241	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	267	TOTAL DROPS IN SAMPLE =	603.
SAUTER MEAN =	329	TOTAL OUT OF FOCUS =	10
WEIGHT MEAN =	387	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	350	AVE. DROPS PER FRAME =	3.0
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.39

RELATIVE SPAN = (626.70 - 226.53) / 350.67 = 1.14
 ELAPSED TIME = 27 sec

B X5

Table E3-103

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10190
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.32	0.00	0.00	0.00	0.000
25.1 - 31.6	15	2.42	0.04	0.00	0.00	0.000
31.6 - 39.8	9	1.45	0.04	0.00	0.01	0.000
39.8 - 50.1	19	3.06	0.11	0.01	0.02	0.000
50.1 - 63.1	27	4.35	0.24	0.04	0.06	0.000
63.1 - 79.4	31	4.99	0.42	0.09	0.15	0.000
79.4 - 100.0	45	7.25	1.03	0.27	0.42	0.000
100.0 - 125.9	48	7.73	1.72	0.57	0.99	0.001
125.9 - 158.5	68	10.95	3.93	1.65	2.64	0.002
158.5 - 199.5	56	9.02	4.97	2.58	5.22	0.003
199.5 - 251.2	96	15.46	13.39	8.73	13.95	0.010
251.2 - 316.2	90	14.49	20.00	16.44	30.39	0.019
316.2 - 398.1	78	12.56	27.28	28.17	58.56	0.032
398.1 - 501.2	23	3.70	13.04	17.12	75.69	0.020
501.2 - 631.0	11	1.77	9.48	15.33	91.02	0.018
631.0 - 794.3	3	0.48	4.30	8.98	100.00	0.010
621.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	204	MAXIMUM DIAMETER =	768.6
SURFACE MEAN =	239	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	270	TOTAL DROPS IN SAMPLE =	621.
SAUTER MEAN =	344	TOTAL OUT OF FOCUS =	15
WEIGHT MEAN =	403	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	376	AVE. DROPS PER FRAME =	3.1
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.45

RELATIVE SPAN = (622.17 - 232.35) / 376.61 = 1.04
 ELAPSED TIME = 28 sec

B X5

Table E3-104

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10191
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	0.64	0.01	0.00	0.00	0.000
25.1 - 31.6	16	2.57	0.04	0.00	0.00	0.000
31.6 - 39.8	16	2.57	0.07	0.01	0.01	0.000
39.8 - 50.1	18	2.89	0.11	0.01	0.03	0.000
50.1 - 63.1	39	6.26	0.37	0.06	0.09	0.000
63.1 - 79.4	43	6.90	0.66	0.14	0.23	0.000
79.4 - 100.0	58	9.31	1.36	0.35	0.58	0.000
100.0 - 125.9	48	7.70	1.81	0.60	1.18	0.001
125.9 - 158.5	53	8.51	3.09	1.27	2.46	0.001
158.5 - 199.5	72	11.56	7.03	3.74	6.20	0.004
199.5 - 251.2	55	8.83	8.28	5.47	11.66	0.006
251.2 - 316.2	88	14.13	21.42	18.00	29.66	0.021
316.2 - 398.1	74	11.88	27.74	28.90	58.56	0.033
398.1 - 501.2	26	4.17	15.51	20.42	78.98	0.023
501.2 - 631.0	12	1.93	10.94	17.76	96.75	0.020
631.0 - 794.3	1	0.16	1.55	3.25	100.00	0.004
	623.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	193	MAXIMUM DIAMETER =	718.8
SURFACE MEAN =	231	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	263	TOTAL DROPS IN SAMPLE =	623.
SAUTER MEAN =	341	TOTAL OUT OF FOCUS =	21
WEIGHT MEAN =	392	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	377	AVE. DROPS PER FRAME =	3.1
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.48

RELATIVE SPAN = (581.27 - 237.52) / 377.36 = 0.91
 ELAPSED TIME = 27 sec

B X5

Table E3-105

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10192
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	6	0.81	0.01	0.00	0.00	0.000
25.1 - 31.6	15	2.03	0.03	0.00	0.00	0.000
31.6 - 39.8	13	1.76	0.04	0.00	0.01	0.000
39.8 - 50.1	23	3.11	0.12	0.02	0.02	0.000
50.1 - 63.1	37	5.01	0.31	0.05	0.08	0.000
63.1 - 79.4	51	6.90	0.66	0.14	0.22	0.000
79.4 - 100.0	44	5.95	0.93	0.25	0.46	0.000
100.0 - 125.9	62	8.39	2.04	0.68	1.14	0.001
125.9 - 158.5	75	10.15	3.98	1.69	2.83	0.002
158.5 - 199.5	79	10.69	6.61	3.51	6.34	0.004
199.5 - 251.2	103	13.94	13.54	9.03	15.38	0.010
251.2 - 316.2	127	17.19	26.23	21.94	37.32	0.025
316.2 - 398.1	76	10.28	24.70	25.88	63.20	0.030
398.1 - 501.2	18	2.44	8.93	11.58	74.78	0.013
501.2 - 631.0	6	0.81	5.03	8.43	83.21	0.010
631.0 - 794.3	2	0.27	2.54	5.29	88.50	0.006
794.3 - 1000.0	2	0.27	4.29	11.50	100.00	0.013
	739.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	195	MAXIMUM DIAMETER =	924.2
SURFACE MEAN =	229	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	261	TOTAL DROPS IN SAMPLE =	739.
SAUTER MEAN =	340	TOTAL OUT OF FOCUS =	23
WEIGHT MEAN =	428	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	359	AVE. DROPS PER FRAME =	3.7
SAMPLE SIZE CHECK =	0.06	DEVIATION =	0.46

RELATIVE SPAN = (811.04 - 224.61) / 359.36 = 1.63
 ELAPSED TIME = 27 sec

B X5

Table E3-106

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10193
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	0.25	0.00	0.00	0.00	0.000
25.1 - 31.6	31	2.63	0.04	0.00	0.00	0.000
31.6 - 39.8	28	2.37	0.06	0.01	0.01	0.000
39.8 - 50.1	34	2.88	0.11	0.01	0.02	0.000
50.1 - 63.1	54	4.58	0.28	0.04	0.07	0.000
63.1 - 79.4	85	7.20	0.68	0.13	0.20	0.000
79.4 - 100.0	103	8.73	1.35	0.34	0.54	0.000
100.0 - 125.9	101	8.56	2.11	0.67	1.21	0.001
125.9 - 158.5	144	12.20	4.59	1.80	3.01	0.002
158.5 - 199.5	135	11.44	6.96	3.46	6.47	0.004
199.5 - 251.2	137	11.61	11.13	6.95	13.42	0.008
251.2 - 316.2	148	12.54	18.89	14.79	28.21	0.017
316.2 - 398.1	95	8.05	18.72	18.21	46.42	0.021
398.1 - 501.2	50	4.24	15.35	18.65	65.06	0.021
501.2 - 631.0	24	2.03	12.37	19.45	84.51	0.022
631.0 - 794.3	5	0.42	4.00	7.84	92.35	0.009
794.3 - 1000.0	3	0.25	3.33	7.65	100.00	0.009
		1180.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	190	MAXIMUM DIAMETER =	838.2
SURFACE MEAN =	229	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	267	TOTAL DROPS IN SAMPLE =	1180.
SAUTER MEAN =	362	TOTAL OUT OF FOCUS =	27
WEIGHT MEAN =	445	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	418	AVE. DROPS PER FRAME =	5.9
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.54

RELATIVE SPAN = (742.92 - 228.95) / 418.82 = 1.23
 ELAPSED TIME = 33 sec

B X5

Table E3-107

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10194
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.34	0.00	0.00	0.00	0.000
25.1 - 31.6	13	2.18	0.04	0.00	0.00	0.000
31.6 - 39.8	15	2.52	0.07	0.01	0.01	0.000
39.8 - 50.1	21	3.52	0.14	0.02	0.03	0.000
50.1 - 63.1	22	3.69	0.23	0.04	0.07	0.000
63.1 - 79.4	32	5.37	0.55	0.13	0.20	0.000
79.4 - 100.0	40	6.71	1.07	0.31	0.51	0.000
100.0 - 125.9	53	8.89	2.33	0.87	1.39	0.001
125.9 - 158.5	57	9.56	3.75	1.72	3.10	0.002
158.5 - 199.5	74	12.42	7.91	4.62	7.72	0.005
199.5 - 251.2	70	11.74	11.98	8.85	16.57	0.010
251.2 - 316.2	117	19.63	31.05	28.57	45.14	0.033
316.2 - 398.1	54	9.06	21.78	24.69	69.83	0.028
398.1 - 501.2	21	3.52	13.41	19.15	88.98	0.022
501.2 - 631.0	4	0.67	4.09	7.38	96.36	0.008
631.0 - 794.3	1	0.17	1.61	3.64	100.00	0.004
596.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 195	MAXIMUM DIAMETER = 699.5
SURFACE MEAN = 225	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 250	TOTAL DROPS IN SAMPLE = 596.
SAUTER MEAN = 310	TOTAL OUT OF FOCUS = 30
WEIGHT MEAN = 353	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 333	AVE. DROPS PER FRAME = 3.0
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.41

RELATIVE SPAN = (517.90 - 215.69) / 333.75 = 0.91
 ELAPSED TIME = 26 sec

B X5

Table E3-108

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10195
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.34	0.00	0.00	0.00	0.000
25.1 - 31.6	8	2.73	0.03	0.00	0.00	0.000
31.6 - 39.8	7	2.39	0.04	0.00	0.01	0.000
39.8 - 50.1	5	1.71	0.05	0.01	0.01	0.000
50.1 - 63.1	7	2.39	0.09	0.01	0.03	0.000
63.1 - 79.4	15	5.12	0.34	0.07	0.09	0.000
79.4 - 100.0	14	4.78	0.53	0.13	0.22	0.000
100.0 - 125.9	13	4.44	0.77	0.24	0.46	0.000
125.9 - 158.5	22	7.51	2.06	0.81	1.27	0.001
158.5 - 199.5	33	11.26	4.74	2.31	3.58	0.003
199.5 - 251.2	33	11.26	7.56	4.65	8.23	0.005
251.2 - 316.2	42	14.33	15.78	12.42	20.65	0.014
316.2 - 398.1	61	20.82	34.35	33.09	53.73	0.038
398.1 - 501.2	25	8.53	21.60	25.78	79.52	0.030
501.2 - 631.0	5	1.71	7.66	12.15	91.67	0.014
631.0 - 794.3	2	0.68	4.40	8.33	100.00	0.010
293.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	239	MAXIMUM DIAMETER =	714.8
SURFACE MEAN =	275	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	303	TOTAL DROPS IN SAMPLE =	293.
SAUTER MEAN =	369	TOTAL OUT OF FOCUS =	31
WEIGHT MEAN =	414	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	391	AVE. DROPS PER FRAME =	1.5
SAMPLE SIZE CHECK =	0.04	DEVIATION =	0.38

RELATIVE SPAN = (612.48 - 263.75) / 391.26 = 0.89
 ELAPSED TIME = 37 sec

B X5

Table E3-109

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10196
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 66.0 INCHES
 DIST FROM NOZZLE 81.6 INCHES
 AZIMUTHAL ANGLE 54.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.44	0.00	0.00	0.00	0.000
25.1 - 31.6	8	3.56	0.02	0.00	0.00	0.000
31.6 - 39.8	4	1.78	0.02	0.00	0.00	0.000
39.8 - 50.1	9	4.00	0.06	0.01	0.01	0.000
50.1 - 63.1	12	5.33	0.11	0.01	0.02	0.000
63.1 - 79.4	7	3.11	0.10	0.01	0.03	0.000
79.4 - 100.0	7	3.11	0.16	0.03	0.06	0.000
100.0 - 125.9	11	4.89	0.43	0.10	0.16	0.000
125.9 - 158.5	14	6.22	0.89	0.26	0.42	0.000
158.5 - 199.5	12	5.33	1.15	0.40	0.82	0.000
199.5 - 251.2	9	4.00	1.37	0.61	1.43	0.001
251.2 - 316.2	7	3.11	1.69	0.94	2.37	0.001
316.2 - 398.1	18	8.00	7.24	5.22	7.59	0.006
398.1 - 501.2	61	27.11	38.45	34.57	42.16	0.040
501.2 - 631.0	34	15.11	31.66	34.62	76.78	0.040
631.0 - 794.3	11	4.89	16.63	23.22	100.00	0.027
		225.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	321	MAXIMUM DIAMETER =	774.8
SURFACE MEAN =	380	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	418	TOTAL DROPS IN SAMPLE =	225.
SAUTER MEAN =	506	TOTAL OUT OF FOCUS =	31
WEIGHT MEAN =	539	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	535	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.39

RELATIVE SPAN = (713.88 - 413.12) / 535.12 = 0.56
 ELAPSED TIME = 97 sec

B X5

Table E3-110

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10197
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 91.6 INCHES
 AZIMUTHAL ANGLE 58.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	5	2.33	0.02	0.00	0.00	0.000
25.1 - 31.6	8	3.72	0.04	0.00	0.00	0.000
31.6 - 39.8	12	5.58	0.08	0.00	0.01	0.000
39.8 - 50.1	15	6.98	0.16	0.01	0.02	0.000
50.1 - 63.1	19	8.84	0.31	0.03	0.05	0.000
63.1 - 79.4	17	7.91	0.47	0.06	0.10	0.000
79.4 - 100.0	13	6.05	0.57	0.08	0.18	0.000
100.0 - 125.9	22	10.23	1.48	0.27	0.45	0.000
125.9 - 158.5	28	13.02	2.99	0.69	1.14	0.001
158.5 - 199.5	21	9.77	3.59	1.04	2.18	0.001
199.5 - 251.2	11	5.12	2.94	1.06	3.24	0.001
251.2 - 316.2	9	4.19	3.91	1.81	5.05	0.002
316.2 - 398.1	2	0.93	1.35	0.78	5.83	0.001
398.1 - 501.2	1	0.47	1.25	0.98	6.81	0.001
501.2 - 631.0	12	5.58	20.96	19.43	26.24	0.022
631.0 - 794.3	15	6.98	39.35	44.69	70.93	0.051
794.3 - 1000.0	5	2.33	20.53	29.07	100.00	0.033
		215.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	199	MAXIMUM DIAMETER =	935.3
SURFACE MEAN =	294	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	377	TOTAL DROPS IN SAMPLE =	215.
SAUTER MEAN =	619	TOTAL OUT OF FOCUS =	31
WEIGHT MEAN =	701	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	732	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.07	DEVIATION =	0.73

RELATIVE SPAN = (889.55 - 535.18) / 732.54 = 0.48
 ELAPSED TIME = 262 sec

B X5

Table E3-111

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89

TESTS INCLUDED: 10185 10186 10187 10188 10189 10190 10191 10192 10193 1
10195 10196 10197

PRESSURE 56.0 PSI

CENTERLINE COORD 48.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 58.4 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

Y AXIS = +18".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	35	0.55	0.01	0.00	0.00	0.000
25.1 - 31.6	171	2.70	0.04	0.00	0.00	0.000
31.6 - 39.8	150	2.37	0.05	0.00	0.01	0.000
39.8 - 50.1	189	2.98	0.10	0.01	0.02	0.000
50.1 - 63.1	323	5.10	0.26	0.04	0.06	0.000
63.1 - 79.4	380	6.00	0.49	0.09	0.15	0.000
79.4 - 100.0	447	7.06	0.91	0.21	0.36	0.000
100.0 - 125.9	498	7.86	1.63	0.48	0.84	0.001
125.9 - 158.5	630	9.94	3.22	1.19	2.03	0.001
158.5 - 199.5	661	10.43	5.39	2.51	4.54	0.003
199.5 - 251.2	734	11.59	9.42	5.50	10.04	0.006
251.2 - 316.2	889	14.03	18.21	13.44	23.48	0.015
316.2 - 398.1	664	10.48	20.96	19.20	42.68	0.022
398.1 - 501.2	336	5.30	16.79	19.35	62.03	0.022
501.2 - 631.0	155	2.45	12.29	17.83	79.86	0.020
631.0 - 794.3	58	0.92	7.25	13.20	93.06	0.015
794.3 - 1000.0	13	0.21	2.44	5.44	98.50	0.006
1000.0 - 1258.9	2	0.03	0.56	1.50	100.00	0.002
	6335.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 206

SURFACE MEAN = 249

VOLUME MEAN = 288

SAUTER MEAN = 387

WEIGHT MEAN = 470

VOLUME MEDIAN = 438

SAMPLE SIZE CHECK = 0.01

MAXIMUM DIAMETER = 1074.4

MINIMUM DIAMETER = 24.2

TOTAL DROPS IN SAMPLE = 6335.

TOTAL OUT OF FOCUS = 255

TOTAL FRAMES IN SAMPLE = 2600

AVE. DROPS PER FRAME = 2.4

DEVIATION = 0.53

RELATIVE SPAN = (755.34 - 250.89)/ 438.86 = 1.15

ELAPSED TIME = 915 sec

B X5

C310

Table E3-112

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10211
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	8	3.52	0.05	0.00	0.00	0.000
25.1 - 31.6	12	5.29	0.12	0.01	0.01	0.000
31.6 - 39.8	13	5.73	0.18	0.01	0.03	0.000
39.8 - 50.1	18	7.93	0.39	0.04	0.06	0.000
50.1 - 63.1	17	7.49	0.55	0.07	0.13	0.000
63.1 - 79.4	15	6.61	0.79	0.13	0.26	0.000
79.4 - 100.0	23	10.13	1.90	0.38	0.64	0.000
100.0 - 125.9	25	11.01	3.50	0.91	1.55	0.001
125.9 - 158.5	29	12.78	5.87	1.84	3.39	0.002
158.5 - 199.5	22	9.69	7.30	2.93	6.32	0.003
199.5 - 251.2	20	8.81	10.40	5.23	11.55	0.006
251.2 - 316.2	7	3.08	5.50	3.40	14.96	0.004
316.2 - 398.1	0	0.00	0.00	0.00	14.96	0.000
398.1 - 501.2	4	1.76	8.59	8.77	23.73	0.010
501.2 - 631.0	9	3.96	30.98	39.97	63.70	0.046
631.0 - 794.3	5	2.20	23.88	36.30	100.00	0.042
-----		227.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 147	MAXIMUM DIAMETER = 726.6
SURFACE MEAN = 205	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 265	TOTAL DROPS IN SAMPLE = 227.
SAUTER MEAN = 446	TOTAL OUT OF FOCUS = 74
WEIGHT MEAN = 547	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 596	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.09	DEVIATION = 0.75

RELATIVE SPAN = (703.01 - 237.71) / 596.33 = 0.78
 ELAPSED TIME = 117 sec.

B X5

Table E3-113

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10212
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	6	2.12	0.02	0.00	0.00	0.000
25.1 - 31.6	21	7.42	0.11	0.01	0.01	0.000
31.6 - 39.8	20	7.07	0.16	0.01	0.02	0.000
39.8 - 50.1	13	4.59	0.15	0.01	0.03	0.000
50.1 - 63.1	32	11.31	0.59	0.06	0.09	0.000
63.1 - 79.4	16	5.65	0.46	0.06	0.14	0.000
79.4 - 100.0	20	7.07	0.91	0.14	0.28	0.000
100.0 - 125.9	31	10.95	2.28	0.44	0.72	0.001
125.9 - 158.5	34	12.01	4.12	1.02	1.75	0.001
158.5 - 199.5	35	12.37	6.38	1.95	3.69	0.002
199.5 - 251.2	13	4.59	3.74	1.43	5.12	0.002
251.2 - 316.2	10	3.53	4.65	2.27	7.39	0.003
316.2 - 398.1	1	0.35	0.61	0.34	7.73	0.000
398.1 - 501.2	9	3.18	10.75	8.38	16.11	0.010
501.2 - 631.0	9	3.18	18.15	18.38	34.49	0.021
631.0 - 794.3	9	3.18	26.85	33.08	67.58	0.038
794.3 - 1000.0	3	1.06	13.65	20.89	88.47	0.024
1000.0 - 1258.9	1	0.35	6.41	11.53	100.00	0.013
-----	283.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 165	MAXIMUM DIAMETER = 1048.7
SURFACE MEAN = 246	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 328	TOTAL DROPS IN SAMPLE = 283.
SAUTER MEAN = 583	TOTAL OUT OF FOCUS = 76
WEIGHT MEAN = 710	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 716	AVE. DROPS PER FRAME = 1.4
SAMPLE SIZE CHECK = 0.12	DEVIATION = 0.77

RELATIVE SPAN = (1006.68 - 431.57) / 716.48 = 0.80
 ELAPSED TIME = 44 sec

R X5

Table E3-114

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10213
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	2.66	0.03	0.00	0.00	0.000
25.1 - 31.6	15	5.70	0.10	0.01	0.01	0.000
31.6 - 39.8	13	4.94	0.14	0.01	0.02	0.000
39.8 - 50.1	11	4.18	0.19	0.02	0.03	0.000
50.1 - 63.1	30	11.41	0.79	0.09	0.12	0.000
63.1 - 79.4	19	7.22	0.77	0.10	0.22	0.000
79.4 - 100.0	30	11.41	2.00	0.34	0.56	0.000
100.0 - 125.9	23	8.75	2.41	0.52	1.08	0.001
125.9 - 158.5	34	12.93	5.60	1.50	2.58	0.002
158.5 - 199.5	27	10.27	6.81	2.25	4.83	0.003
199.5 - 251.2	17	6.46	6.94	2.93	7.76	0.003
251.2 - 316.2	19	7.22	11.27	5.73	13.49	0.007
316.2 - 398.1	4	1.52	3.80	2.44	15.93	0.003
398.1 - 501.2	1	0.38	1.79	1.57	17.50	0.002
501.2 - 631.0	4	1.52	10.69	11.48	28.98	0.013
631.0 - 794.3	3	1.14	11.34	14.49	43.47	0.017
794.3 - 1000.0	6	2.28	35.31	56.53	100.00	0.065
-----	263.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 151	MAXIMUM DIAMETER = 941.7
SURFACE MEAN = 216	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 293	TOTAL DROPS IN SAMPLE = 263.
SAUTER MEAN = 535	TOTAL OUT OF FOCUS = 76
WEIGHT MEAN = 697	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 817	AVE. DROPS PER FRAME = 1.3
SAMPLE SIZE CHECK = 0.13	DEVIATION = 0.81

RELATIVE SPAN = (921.64 - 279.16) / 817.35 = 0.79
 ELAPSED TIME = 57 sec

B X5

Table E3-115

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10214
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	1.08	0.01	0.00	0.00	0.000
25.1 - 31.6	15	5.40	0.11	0.01	0.01	0.000
31.6 - 39.8	10	3.60	0.11	0.01	0.02	0.000
39.8 - 50.1	9	3.24	0.14	0.01	0.03	0.000
50.1 - 63.1	29	10.43	0.73	0.09	0.12	0.000
63.1 - 79.4	30	10.79	1.18	0.18	0.30	0.000
79.4 - 100.0	23	8.27	1.45	0.28	0.58	0.000
100.0 - 125.9	25	8.99	2.38	0.57	1.15	0.001
125.9 - 158.5	33	11.87	4.94	1.48	2.63	0.002
158.5 - 199.5	28	10.07	6.98	2.70	5.34	0.003
199.5 - 251.2	27	9.71	10.87	5.34	10.68	0.006
251.2 - 316.2	24	8.63	14.57	8.79	19.47	0.010
316.2 - 398.1	8	2.88	7.41	5.53	25.00	0.006
398.1 - 501.2	1	0.36	1.70	1.70	26.70	0.002
501.2 - 631.0	7	2.52	18.72	23.65	50.35	0.027
631.0 - 794.3	4	1.44	15.58	23.76	74.11	0.027
794.3 - 1000.0	2	0.72	13.12	25.89	100.00	0.030
-----	278.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	160	MAXIMUM DIAMETER =	947.0
SURFACE MEAN =	217	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	280	TOTAL DROPS IN SAMPLE =	278.
SAUTER MEAN =	470	TOTAL OUT OF FOCUS =	76
WEIGHT MEAN =	624	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	629	AVE. DROPS PER FRAME =	1.4
SAMPLE SIZE CHECK =	0.14	DEVIATION =	0.75

RELATIVE SPAN = (890.19 - 245.77) / 629.36 = 1.02
 ELAPSED TIME = 50 sec

B X5

Table E3-116

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10215
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 48.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36°.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1		1	0.30	0.00	0.00	0.00	0.000
25.1 - 31.6		12	3.58	0.07	0.00	0.01	0.000
31.6 - 39.8		10	2.99	0.10	0.01	0.01	0.000
39.8 - 50.1		20	5.97	0.29	0.03	0.04	0.000
50.1 - 63.1		29	8.66	0.64	0.08	0.13	0.000
63.1 - 79.4		29	8.66	1.04	0.17	0.30	0.000
79.4 - 100.0		41	12.24	2.26	0.46	0.76	0.001
100.0 - 125.9		46	13.73	4.07	1.06	1.82	0.001
125.9 - 158.5		47	14.03	6.44	2.08	3.90	0.002
158.5 - 199.5		30	8.96	6.34	2.54	6.45	0.003
199.5 - 251.2		24	7.16	8.13	4.14	10.58	0.005
251.2 - 316.2		16	4.78	8.38	5.30	15.89	0.006
316.2 - 398.1		6	1.79	5.11	4.12	20.01	0.005
398.1 - 501.2		8	2.39	11.39	11.83	31.83	0.014
501.2 - 631.0		8	2.39	18.46	24.44	56.27	0.028
631.0 - 794.3		8	2.39	27.26	43.73	100.00	0.050
-----		335.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 154	MAXIMUM DIAMETER = 732.2
SURFACE MEAN = 207	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 266	TOTAL DROPS IN SAMPLE = 335.
SAUTER MEAN = 437	TOTAL OUT OF FOCUS = 76
WEIGHT MEAN = 550	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 601	AVE. DROPS PER FRAME = 1.7
SAMPLE SIZE CHECK = 0.06	DEVIATION = 0.74

RELATIVE SPAN = (712.48 - 244.65) / 601.52 = 0.78
 ELAPSED TIME = 58 sec

B X5

Table E3-117

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10216
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 18.0 INCHES
 DIST FROM NOZZLE 51.3 INCHES
 AZIMUTHAL ANGLE 20.6 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.68	0.01	0.00	0.00	0.000
25.1 - 31.6	7	2.40	0.04	0.00	0.00	0.000
31.6 - 39.8	14	4.79	0.10	0.01	0.01	0.000
39.8 - 50.1	16	5.48	0.19	0.02	0.03	0.000
50.1 - 63.1	18	6.16	0.32	0.03	0.06	0.000
63.1 - 79.4	35	11.99	1.03	0.14	0.20	0.000
79.4 - 100.0	33	11.30	1.48	0.24	0.44	0.000
100.0 - 125.9	32	10.96	2.32	0.49	0.93	0.001
125.9 - 158.5	30	10.27	3.37	0.88	1.81	0.001
158.5 - 199.5	31	10.62	5.58	1.85	3.66	0.002
199.5 - 251.2	24	8.22	6.66	2.73	6.39	0.003
251.2 - 316.2	14	4.79	6.37	3.35	9.73	0.004
316.2 - 398.1	7	2.40	4.64	2.94	12.68	0.003
398.1 - 501.2	7	2.40	8.45	7.26	19.93	0.008
501.2 - 631.0	10	3.42	18.08	18.96	38.89	0.022
631.0 - 794.3	8	2.74	22.89	30.15	69.03	0.035
794.3 - 1000.0	4	1.37	18.46	30.97	100.00	0.035
-----	292.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 174	MAXIMUM DIAMETER = 998.8
SURFACE MEAN = 245	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 319	TOTAL DROPS IN SAMPLE = 292.
SAUTER MEAN = 541	TOTAL OUT OF FOCUS = 76
WEIGHT MEAN = 671	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 697	AVE. DROPS PER FRAME = 1.5
SAMPLE SIZE CHECK = 0.10	DEVIATION = 0.75

RELATIVE SPAN = (935.82 - 323.78) / 697.89 = 0.88
 ELAPSED TIME = 38 sec

B X5

Table E3-118

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10217
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 56.6 INCHES
 AZIMUTHAL ANGLE 32.0 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.78	0.01	0.00	0.00	0.000
25.1 - 31.6	9	3.50	0.06	0.00	0.01	0.000
31.6 - 39.8	8	3.11	0.09	0.01	0.01	0.000
39.8 - 50.1	9	3.50	0.15	0.02	0.03	0.000
50.1 - 63.1	13	5.06	0.34	0.05	0.08	0.000
63.1 - 79.4	16	6.23	0.71	0.12	0.20	0.000
79.4 - 100.0	18	7.00	1.16	0.25	0.44	0.000
100.0 - 125.9	31	12.06	3.40	0.94	1.38	0.001
125.9 - 158.5	49	19.07	8.26	2.83	4.21	0.003
158.5 - 199.5	42	16.34	11.24	4.85	9.06	0.006
199.5 - 251.2	25	9.73	10.21	5.43	14.49	0.006
251.2 - 316.2	12	4.67	7.44	4.87	19.35	0.006
316.2 - 398.1	7	2.72	7.24	6.13	25.48	0.007
398.1 - 501.2	2	0.78	3.66	4.11	29.59	0.005
501.2 - 631.0	7	2.72	18.88	25.88	55.47	0.030
631.0 - 794.3	7	2.72	27.14	44.53	100.00	0.051
-----		-----	-----	-----	-----	-----
		257.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 167	MAXIMUM DIAMETER = 764.7
SURFACE MEAN = 213	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 266	TOTAL DROPS IN SAMPLE = 257.
SAUTER MEAN = 413	TOTAL OUT OF FOCUS = 76
WEIGHT MEAN = 531	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 607	Ave. DROPS PER FRAME = 1.3
SAMPLE SIZE CHECK = 0.09	DEVIATION = 0.72

RELATIVE SPAN = (738.87 - 209.44) / 607.42 = 0.87
 ELAPSED TIME = 61 sec

B X5

Table E3-119

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10218
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 63.8 INCHES
 AZIMUTHAL ANGLE 41.2 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	4	1.39	0.02	0.00	0.00	0.000
25.1 - 31.6	12	4.17	0.07	0.00	0.01	0.000
31.6 - 39.8	14	4.86	0.12	0.01	0.01	0.000
39.8 - 50.1	15	5.21	0.21	0.02	0.04	0.000
50.1 - 63.1	19	6.60	0.39	0.05	0.08	0.000
63.1 - 79.4	25	8.68	0.84	0.13	0.21	0.000
79.4 - 100.0	30	10.42	1.57	0.29	0.50	0.000
100.0 - 125.9	34	11.81	2.97	0.72	1.22	0.001
125.9 - 158.5	29	10.07	3.76	1.10	2.33	0.001
158.5 - 199.5	39	13.54	8.19	3.07	5.40	0.004
199.5 - 251.2	26	9.03	8.34	3.86	9.26	0.004
251.2 - 316.2	10	3.47	5.32	3.19	12.44	0.004
316.2 - 398.1	4	1.39	3.07	2.19	14.63	0.003
398.1 - 501.2	3	1.04	3.66	3.29	17.92	0.004
501.2 - 631.0	16	5.56	34.02	40.50	58.42	0.046
631.0 - 794.3	7	2.43	23.21	34.51	92.92	0.040
794.3 - 1000.0	1	0.35	4.23	7.08	100.00	0.008
-----		288.	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 165	MAXIMUM DIAMETER = 795.5
SURFACE MEAN = 227	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 291	TOTAL DROPS IN SAMPLE = 288.
SAUTER MEAN = 475	TOTAL OUT OF FOCUS = 77
WEIGHT MEAN = 578	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 612	AVE. DROPS PER FRAME = 1.4
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.72

RELATIVE SPAN = (781.83 - 266.77) / 612.12 = 0.84
 ELAPSED TIME = 43 sec

B X5

Table E3-120

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10219
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 72.2 INCHES
 AZIMUTHAL ANGLE 48.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.
 Y AXIS = +36".

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	3	1.35	0.01	0.00	0.00	0.000
25.1 - 31.6	15	6.73	0.08	0.00	0.00	0.000
31.6 - 39.8	11	4.93	0.09	0.01	0.01	0.000
39.8 - 50.1	7	3.14	0.09	0.01	0.02	0.000
50.1 - 63.1	13	5.83	0.25	0.02	0.04	0.000
63.1 - 79.4	18	8.07	0.56	0.07	0.11	0.000
79.4 - 100.0	15	6.73	0.75	0.12	0.23	0.000
100.0 - 125.9	18	8.07	1.40	0.28	0.51	0.000
125.9 - 158.5	28	12.56	3.27	0.80	1.32	0.001
158.5 - 199.5	32	14.35	6.00	1.86	3.18	0.002
199.5 - 251.2	26	11.66	7.60	2.94	6.12	0.003
251.2 - 316.2	8	3.59	3.72	1.81	7.94	0.002
316.2 - 398.1	2	0.90	1.53	0.95	8.89	0.001
398.1 - 501.2	0	0.00	0.00	0.00	8.89	0.000
501.2 - 631.0	10	4.48	20.54	21.10	29.98	0.024
631.0 - 794.3	13	5.83	36.47	43.59	73.58	0.050
794.3 - 1000.0	4	1.79	17.64	26.42	100.00	0.030
-----	223.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 192	MAXIMUM DIAMETER = 901.5
SURFACE MEAN = 272	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 348	TOTAL DROPS IN SAMPLE = 223.
SAUTER MEAN = 571	TOTAL OUT OF FOCUS = 77
WEIGHT MEAN = 669	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 719	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.08	DEVIATION = 0.73

RELATIVE SPAN = (863.19 - 512.52) / 719.39 = 0.49
 ELAPSED TIME = 139 sec

B X5

Table E3-121

RETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89

TESTS INCLUDED: 10211 10212 10213 10214 10215 10216 10217 10218 10219

PRESSURE 56.0 PSI

CENTERLINE COORD 48.0 INCHES

RADIAL COORD 0.00 - 54.00 INCHES

AZIMUTHAL ANGLE 0.0 - 48.4 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

Y AXIS = +36°.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	36	1.47	0.02	0.00	0.00	0.000
25.1 - 31.6	118	4.82	0.08	0.00	0.01	0.000
31.6 - 39.8	113	4.62	0.12	0.01	0.01	0.000
39.8 - 50.1	118	4.82	0.19	0.02	0.03	0.000
50.1 - 63.1	200	8.18	0.50	0.06	0.09	0.000
63.1 - 79.4	203	8.30	0.82	0.12	0.20	0.000
79.4 - 100.0	233	9.53	1.46	0.26	0.46	0.000
100.0 - 125.9	265	10.83	2.67	0.60	1.07	0.001
125.9 - 158.5	313	12.80	4.87	1.37	2.43	0.002
158.5 - 199.5	286	11.69	7.05	2.49	4.92	0.003
199.5 - 251.2	202	8.26	7.82	3.46	8.39	0.004
251.2 - 316.2	120	4.91	7.25	4.01	12.40	0.005
316.2 - 398.1	39	1.59	3.66	2.52	14.92	0.003
398.1 - 501.2	35	1.43	5.66	5.12	20.04	0.006
501.2 - 631.0	80	3.27	20.71	23.70	43.73	0.027
631.0 - 794.3	64	2.62	24.31	33.67	77.40	0.039
794.3 - 1000.0	20	0.82	11.95	20.81	98.21	0.024
1000.0 - 1258.9	1	0.04	0.86	1.79	100.00	0.002
-----	2446.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 163

SURFACE MEAN = 228

VOLUME MEAN = 297

SAUTER MEAN = 504

WEIGHT MEAN = 634

VOLUME MEDIAN = 665

SAMPLE SIZE CHECK = 0.02

MAXIMUM DIAMETER = 1048.7

MINIMUM DIAMETER = 24.2

TOTAL DROPS IN SAMPLE = 2446.

TOTAL OUT OF FOCUS = 684

TOTAL FRAMES IN SAMPLE = 1800

AVE. DROPS PER FRAME = 1.4

DEVIATION = 0.75

RELATIVE SPAN = (919.07 - 278.61) / 665.98 = 0.96

ELAPSED TIME = 607 sec

B X5

C111

Table E3-122

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10176
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 102.0 INCHES
 DIST FROM NOZZLE 140.1 INCHES
 AZIMUTHAL ANGLE 46.7 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.49	0.00	0.00	0.00	0.000
25.1 - 31.6	5	2.44	0.01	0.00	0.00	0.000
31.6 - 39.8	3	1.46	0.01	0.00	0.00	0.000
39.8 - 50.1	6	2.93	0.02	0.00	0.00	0.000
50.1 - 63.1	5	2.44	0.03	0.00	0.01	0.000
63.1 - 79.4	12	5.85	0.12	0.01	0.02	0.000
79.4 - 100.0	6	2.93	0.09	0.01	0.03	0.000
100.0 - 125.9	5	2.44	0.12	0.02	0.05	0.000
125.9 - 158.5	7	3.41	0.27	0.06	0.11	0.000
158.5 - 199.5	12	5.85	0.73	0.20	0.31	0.000
199.5 - 251.2	8	3.90	0.78	0.27	0.58	0.000
251.2 - 316.2	8	3.90	1.16	0.50	1.08	0.001
316.2 - 398.1	7	3.41	1.75	0.98	2.06	0.001
398.1 - 501.2	13	6.34	5.29	3.79	5.85	0.004
501.2 - 631.0	54	26.34	35.33	32.01	37.86	0.037
631.0 - 794.3	40	19.51	37.18	40.23	78.09	0.046
794.3 - 1000.0	13	6.34	17.11	21.91	100.00	0.025
205.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 430	MAXIMUM DIAMETER = 880.1
SURFACE MEAN = 503	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 546	TOTAL DROPS IN SAMPLE = 205.
SAUTER MEAN = 646	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 675	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 689	AVE. DROPS PER FRAME = 1.0
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.37

RELATIVE SPAN = (842.49 - 535.41) / 689.30 = 0.45
 ELAPSED TIME = 874 sec

B X5

Table E3-123

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10177
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.46	0.00	0.00	0.00	0.000
25.1 - 31.6	2	0.92	0.01	0.00	0.00	0.000
31.6 - 39.8	0	0.00	0.00	0.00	0.00	0.000
39.8 - 50.1	1	0.46	0.01	0.00	0.00	0.000
50.1 - 63.1	1	0.46	0.01	0.00	0.00	0.000
63.1 - 79.4	3	1.38	0.06	0.01	0.01	0.000
79.4 - 100.0	0	0.00	0.00	0.00	0.01	0.000
100.0 - 125.9	4	1.83	0.17	0.04	0.06	0.000
125.9 - 158.5	12	5.50	0.89	0.30	0.35	0.000
158.5 - 199.5	13	5.96	1.61	0.69	1.04	0.001
199.5 - 251.2	22	10.09	3.91	2.02	3.06	0.002
251.2 - 316.2	36	16.51	10.55	7.00	10.06	0.008
316.2 - 398.1	71	32.57	32.80	27.31	37.37	0.031
398.1 - 501.2	31	14.22	22.03	22.75	60.12	0.026
501.2 - 631.0	16	7.34	19.52	26.41	86.53	0.030
631.0 - 794.3	5	2.29	8.43	13.47	100.00	0.015
	218.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 328	MAXIMUM DIAMETER = 784.3
SURFACE MEAN = 355	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 378	TOTAL DROPS IN SAMPLE = 218.
SAUTER MEAN = 431	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 474	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 458	AVE. DROPS PER FRAME = 1.1
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.28

RELATIVE SPAN = (669.37 - 315.87) / 458.40 = 0.77
 ELAPSED TIME = 124 sec

B X5

Table E3-124

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10178
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	1	0.25	0.00	0.00	0.00	0.000
25.1 - 31.6	5	1.23	0.02	0.00	0.00	0.000
31.6 - 39.8	4	0.98	0.03	0.00	0.00	0.000
39.8 - 50.1	9	2.21	0.09	0.01	0.02	0.000
50.1 - 63.1	13	3.19	0.19	0.03	0.05	0.000
63.1 - 79.4	20	4.91	0.45	0.10	0.15	0.000
79.4 - 100.0	23	5.65	0.87	0.25	0.40	0.000
100.0 - 125.9	25	6.14	1.51	0.54	0.94	0.001
125.9 - 158.5	42	10.32	3.95	1.77	2.71	0.002
158.5 - 199.5	72	17.69	10.76	6.08	8.79	0.007
199.5 - 251.2	77	18.92	17.75	12.45	21.23	0.014
251.2 - 316.2	64	15.72	23.31	20.55	41.78	0.024
316.2 - 398.1	34	8.35	18.78	20.38	62.16	0.023
398.1 - 501.2	9	2.21	8.11	11.22	73.38	0.013
501.2 - 631.0	6	1.47	7.66	12.60	85.98	0.014
631.0 - 794.3	3	0.74	6.54	14.02	100.00	0.016
407.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 203	MAXIMUM DIAMETER = 710.6
SURFACE MEAN = 231	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 258	TOTAL DROPS IN SAMPLE = 407.
SAUTER MEAN = 321	TOTAL OUT OF FOCUS = 0
WEIGHT MEAN = 386	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 350	AVE. DROPS PER FRAME = 2.0
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.41

RELATIVE SPAN = (654.07 - 206.37) / 350.91 = 1.28
 ELAPSED TIME = 27 sec

B X5

Table E3-125

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10179
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	8	0.58	0.01	0.00	0.00	0.000
25.1 - 31.6	44	3.17	0.11	0.01	0.01	0.000
31.6 - 39.8	52	3.74	0.19	0.03	0.04	0.000
39.8 - 50.1	63	4.54	0.35	0.06	0.10	0.000
50.1 - 63.1	106	7.63	0.94	0.20	0.29	0.000
63.1 - 79.4	134	9.65	1.91	0.51	0.80	0.001
79.4 - 100.0	150	10.80	3.37	1.12	1.92	0.001
100.0 - 125.9	192	13.82	6.85	2.86	4.78	0.003
125.9 - 158.5	220	15.84	12.17	6.33	11.11	0.007
158.5 - 199.5	174	12.53	15.35	10.09	21.20	0.012
199.5 - 251.2	134	9.65	18.51	15.20	36.40	0.017
251.2 - 316.2	62	4.46	13.66	14.20	50.60	0.016
316.2 - 398.1	29	2.09	9.92	12.83	63.42	0.015
398.1 - 501.2	14	1.01	7.37	11.85	75.27	0.014
501.2 - 631.0	4	0.29	3.66	7.72	82.99	0.009
631.0 - 794.3	1	0.07	1.60	4.45	87.44	0.005
794.3 - 1000.0	2	0.14	4.02	12.56	100.00	0.014
1389.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 134	MAXIMUM DIAMETER = 893.4
SURFACE MEAN = 161	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 192	TOTAL DROPS IN SAMPLE = 1389.
SAUTER MEAN = 273	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 390	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 313	AVE. DROPS PER FRAME = 6.9
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.57

RELATIVE SPAN = (814.69 - 153.99) / 313.62 = 2.11
 ELAPSED TIME = 27 sec

B X5

Table E3-126

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10180
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	9	0.69	0.01	0.00	0.00	0.000
25.1 - 31.6	20	1.54	0.04	0.00	0.00	0.000
31.6 - 39.8	19	1.46	0.05	0.01	0.01	0.000
39.8 - 50.1	35	2.70	0.15	0.02	0.03	0.000
50.1 - 63.1	78	6.01	0.52	0.10	0.14	0.000
63.1 - 79.4	90	6.94	0.98	0.24	0.38	0.000
79.4 - 100.0	108	8.33	1.81	0.56	0.94	0.001
100.0 - 125.9	173	13.34	4.67	1.82	2.76	0.002
125.9 - 158.5	175	13.49	7.30	3.55	6.31	0.004
158.5 - 199.5	231	17.81	15.36	9.43	15.74	0.011
199.5 - 251.2	158	12.18	16.48	12.68	28.42	0.015
251.2 - 316.2	99	7.63	16.44	15.96	44.38	0.018
316.2 - 398.1	60	4.63	15.27	18.33	62.71	0.021
398.1 - 501.2	33	2.54	13.49	20.56	83.27	0.024
501.2 - 631.0	6	0.46	3.75	7.05	90.32	0.008
631.0 - 794.3	3	0.23	3.69	9.68	100.00	0.011
1297.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 164	MAXIMUM DIAMETER = 789.9
SURFACE MEAN = 192	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 221	TOTAL DROPS IN SAMPLE = 1297.
SAUTER MEAN = 292	TOTAL OUT OF FOCUS = 4
WEIGHT MEAN = 369	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 342	AVE. DROPS PER FRAME = 6.5
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.52

RELATIVE SPAN = (624.59 - 177.97) / 342.35 = 1.30
 ELAPSED TIME = 28 sec

B X5

Table E3-127

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10181
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	24	1.10	0.03	0.00	0.00	0.000
25.1 - 31.6	87	3.97	0.15	0.02	0.02	0.000
31.6 - 39.8	92	4.20	0.25	0.03	0.05	0.000
39.8 - 50.1	133	6.07	0.53	0.09	0.15	0.000
50.1 - 63.1	163	7.44	1.05	0.23	0.38	0.000
63.1 - 79.4	225	10.27	2.27	0.63	1.00	0.001
79.4 - 100.0	288	13.14	4.58	1.58	2.59	0.002
100.0 - 125.9	290	13.24	7.21	3.11	5.70	0.004
125.9 - 158.5	300	13.69	11.68	6.30	12.00	0.007
158.5 - 199.5	260	11.87	15.65	10.52	22.51	0.012
199.5 - 251.2	167	7.62	16.29	13.94	36.45	0.016
251.2 - 316.2	80	3.65	12.00	12.71	49.17	0.015
316.2 - 398.1	47	2.15	11.47	15.47	64.64	0.018
398.1 - 501.2	28	1.28	10.87	18.55	83.18	0.021
501.2 - 631.0	5	0.23	3.02	6.45	89.63	0.007
631.0 - 794.3	1	0.05	0.83	2.04	91.67	0.002
794.3 - 1000.0	0	0.00	0.00	0.00	91.67	0.000
1000.0 - 1258.9	1	0.05	2.11	8.33	100.00	0.010
2191.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 126	MAXIMUM DIAMETER = 1040.4
SURFACE MEAN = 153	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 183	TOTAL DROPS IN SAMPLE = 2191.
SAUTER MEAN = 263	TOTAL OUT OF FOCUS = 7
WEIGHT MEAN = 375	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 320	AVE. DROPS PER FRAME = 11.0
SAMPLE SIZE CHECK = 0.08	DEVIATION = 0.60

RELATIVE SPAN = (658.07 - 149.81) / 320.74 = 1.58
 ELAPSED TIME = 30 sec

B X5

Table E3-128

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10182
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	7	0.81	0.02	0.00	0.00	0.000
25.1 - 31.6	42	4.85	0.17	0.02	0.02	0.000
31.6 - 39.8	37	4.27	0.22	0.03	0.05	0.000
39.8 - 50.1	40	4.62	0.36	0.06	0.11	0.000
50.1 - 63.1	64	7.39	0.96	0.20	0.32	0.000
63.1 - 79.4	92	10.62	2.13	0.57	0.89	0.001
79.4 - 100.0	110	12.70	4.09	1.38	2.27	0.002
100.0 - 125.9	117	13.51	6.97	2.98	5.25	0.003
125.9 - 158.5	102	11.78	9.45	5.04	10.29	0.006
158.5 - 199.5	112	12.93	15.85	10.46	20.75	0.012
199.5 - 251.2	70	8.08	15.93	13.31	34.06	0.015
251.2 - 316.2	38	4.39	13.52	14.14	48.20	0.016
316.2 - 398.1	17	1.96	10.34	14.14	62.34	0.016
398.1 - 501.2	12	1.39	11.19	18.97	81.31	0.022
501.2 - 631.0	6	0.69	8.80	18.69	100.00	0.021
	866.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 130	MAXIMUM DIAMETER = 629.5
SURFACE MEAN = 159	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 189	TOTAL DROPS IN SAMPLE = 866.
SAUTER MEAN = 268	TOTAL OUT OF FOCUS = 8
WEIGHT MEAN = 347	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 326	AVE. DROPS PER FRAME = 4.3
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.60
RELATIVE SPAN = (560.51 - 156.95)/ 326.77 = 1.24	
ELAPSED TIME = 24 sec	B X5

Table E3-129

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10183
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 - 31.6	3	1.21	0.01	0.00	0.00	0.000
31.6 - 39.8	4	1.62	0.02	0.00	0.00	0.000
39.8 - 50.1	7	2.83	0.05	0.01	0.01	0.000
50.1 - 63.1	12	4.86	0.14	0.02	0.03	0.000
63.1 - 79.4	7	2.83	0.14	0.02	0.05	0.000
79.4 - 100.0	12	4.86	0.35	0.07	0.12	0.000
100.0 - 125.9	12	4.86	0.56	0.14	0.26	0.000
125.9 - 158.5	17	6.88	1.25	0.40	0.67	0.000
158.5 - 199.5	12	4.86	1.48	0.62	1.28	0.001
199.5 - 251.2	20	8.10	3.67	1.87	3.15	0.002
251.2 - 316.2	22	8.91	6.96	4.64	7.79	0.005
316.2 - 398.1	53	21.46	25.88	21.47	29.26	0.025
398.1 - 501.2	48	19.43	34.89	35.32	64.58	0.040
501.2 - 631.0	14	5.67	16.04	20.33	84.91	0.023
631.0 - 794.3	2	0.81	3.21	4.79	89.70	0.005
794.3 - 1000.0	2	0.81	5.34	10.30	100.00	0.012
	247.	100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 286	MAXIMUM DIAMETER = 865.4
SURFACE MEAN = 330	MINIMUM DIAMETER = 27.9
VOLUME MEAN = 363	TOTAL DROPS IN SAMPLE = 247.
SAUTER MEAN = 440	TOTAL OUT OF FOCUS = 9
WEIGHT MEAN = 489	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 465	AVE. DROPS PER FRAME = 1.2
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.38

RELATIVE SPAN = (796.44 - 330.29) / 465.24 = 1.00
 ELAPSED TIME = 53 sec

B X5

Table E3-130

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89
 TEST NUMBER 10184
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 102.0 INCHES
 DIST FROM NOZZLE 140.1 INCHES
 AZIMUTHAL ANGLE 46.7 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	2	0.99	0.00	0.00	0.00	0.000
25.1 - 31.6	6	2.97	0.01	0.00	0.00	0.000
31.6 - 39.8	3	1.49	0.01	0.00	0.00	0.000
39.8 - 50.1	10	4.95	0.03	0.00	0.00	0.000
50.1 - 63.1	9	4.46	0.05	0.00	0.01	0.000
63.1 - 79.4	7	3.47	0.06	0.01	0.01	0.000
79.4 - 100.0	7	3.47	0.10	0.01	0.03	0.000
100.0 - 125.9	11	5.45	0.24	0.04	0.07	0.000
125.9 - 158.5	7	3.47	0.24	0.05	0.11	0.000
158.5 - 199.5	10	4.95	0.56	0.14	0.26	0.000
199.5 - 251.2	9	4.46	0.77	0.24	0.50	0.000
251.2 - 316.2	4	1.98	0.59	0.24	0.74	0.000
316.2 - 398.1	2	0.99	0.40	0.19	0.94	0.000
398.1 - 501.2	4	1.98	1.55	1.03	1.97	0.001
501.2 - 631.0	37	18.32	21.96	18.20	20.17	0.021
631.0 - 794.3	55	27.23	48.36	48.87	69.04	0.056
794.3 - 1000.0	19	9.41	25.05	30.96	100.00	0.035
		202.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 441	MAXIMUM DIAMETER = 983.8
SURFACE MEAN = 532	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 584	TOTAL DROPS IN SAMPLE = 202.
SAUTER MEAN = 706	TOTAL OUT OF FOCUS = 9
WEIGHT MEAN = 735	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 747	AVE. DROPS PER FRAME = 1.0
SAMPLE SIZE CHECK = 0.02	DEVIATION = 0.41

RELATIVE SPAN = (925.72 - 588.63) / 747.79 = 0.45
 ELAPSED TIME = 699 sec.

B X5

Table E3-131

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/23/89

TESTS INCLUDED: 10176 10177 10178 10179 10180 10181 10182 10183 10184

PRESSURE 0.0 - 56.0 PSI

CENTERLINE COORD 0.00 - 96.00 INCHES

RADIAL COORD 0.00 - 102.00 INCHES

AZIMUTHAL ANGLE 0.0 - 43.3 DEG

CYLINDRICAL ANGLE 0 - 90 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	53	0.75	0.01	0.00	0.00	0.000
25.1 - 31.6	214	3.05	0.06	0.00	0.00	0.000
31.6 - 39.8	214	3.05	0.08	0.01	0.01	0.000
39.8 - 50.1	304	4.33	0.18	0.02	0.03	0.000
50.1 - 63.1	451	6.42	0.43	0.06	0.09	0.000
63.1 - 79.4	590	8.40	0.89	0.15	0.24	0.000
79.4 - 100.0	704	10.03	1.67	0.35	0.59	0.000
100.0 - 125.9	829	11.81	3.11	0.82	1.41	0.001
125.9 - 158.5	882	12.56	5.16	1.70	3.11	0.002
158.5 - 199.5	896	12.76	8.26	3.42	6.53	0.004
199.5 - 251.2	665	9.47	9.69	5.05	11.58	0.006
251.2 - 316.2	413	5.88	9.55	6.27	17.85	0.007
316.2 - 398.1	320	4.56	11.76	9.72	27.57	0.011
398.1 - 501.2	192	2.73	11.10	11.52	39.09	0.013
501.2 - 631.0	148	2.11	14.26	19.08	58.17	0.022
631.0 - 794.3	110	1.57	15.86	25.99	84.16	0.030
794.3 - 1000.0	36	0.51	7.62	15.08	99.24	0.017
1000.0 - 1258.9	1	0.01	0.32	0.76	100.00	0.001
7022.		100.00	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 170

SURFACE MEAN = 220

VOLUME MEAN = 276

SAUTER MEAN = 431

WEIGHT MEAN = 558

VOLUME MEDIAN = 578

SAMPLE SIZE CHECK = 0.01

MAXIMUM DIAMETER = 1040.4

MINIMUM DIAMETER = 24.2

TOTAL DROPS IN SAMPLE = 7022.

TOTAL OUT OF FOCUS = 39

TOTAL FRAMES IN SAMPLE = 1800

AVE. DROPS PER FRAME = 3.9

DEVIATION = 0.70

RELATIVE SPAN = (872.41 - 236.78) / 578.03 = 1.10

ELAPSED TIME = 1886 sec

B X5

Table E3-132

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10256
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1		17	7.87	0.03	0.00	0.00	0.000
25.1 - 31.6		1	0.46	0.00	0.00	0.00	0.000
31.6 - 39.8		1	0.46	0.01	0.00	0.00	0.000
39.8 - 50.1		1	0.46	0.01	0.00	0.00	0.000
50.1 - 63.1		2	0.93	0.02	0.00	0.01	0.000
63.1 - 79.4		5	2.31	0.09	0.01	0.02	0.000
79.4 - 100.0		6	2.78	0.16	0.03	0.05	0.000
100.0 - 125.9		6	2.78	0.25	0.06	0.11	0.000
125.9 - 158.5		6	2.78	0.44	0.14	0.25	0.000
158.5 - 199.5		5	2.31	0.54	0.21	0.46	0.000
199.5 - 251.2		14	6.48	2.38	1.14	1.60	0.001
251.2 - 316.2		20	9.26	5.33	3.20	4.80	0.004
316.2 - 398.1		40	18.52	17.55	13.56	18.36	0.016
398.1 - 501.2		69	31.94	44.55	41.70	60.06	0.048
501.2 - 631.0		18	8.33	17.82	20.70	80.76	0.024
631.0 - 794.3		4	1.85	7.16	11.20	91.96	0.013
794.3 - 1000.0		0	0.00	0.00	0.00	91.96	0.000
1000.0 - 1258.9		1	0.46	3.64	8.04	100.00	0.009
-----		216.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	330	MAXIMUM DIAMETER =	1045.3
SURFACE MEAN =	372	MINIMUM DIAMETER =	24.2
VOLUME MEAN =	403	TOTAL DROPS IN SAMPLE =	216.
SAUTER MEAN =	472	TOTAL OUT OF FOCUS =	6
WEIGHT MEAN =	528	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	483	AVE. DROPS PER FRAME =	1.1
SAMPLE SIZE CHECK =	0.08	DEVIATION =	0.31

RELATIVE SPAN = (764.62 - 358.67) / 483.66 = 0.84
 ELAPSED TIME = 99 sec

Table E3-133

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10255
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	8	1.57	0.02	0.00	0.00	0.000
25.1 - 31.6	17	3.33	0.07	0.01	0.01	0.000
31.6 - 39.8	7	1.37	0.04	0.01	0.01	0.000
39.8 - 50.1	11	2.15	0.10	0.01	0.03	0.000
50.1 - 63.1	25	4.89	0.35	0.07	0.09	0.000
63.1 - 79.4	21	4.11	0.47	0.11	0.21	0.000
79.4 - 100.0	46	9.00	1.66	0.50	0.71	0.001
100.0 - 125.9	50	9.78	2.70	1.00	1.71	0.001
125.9 - 158.5	48	9.39	4.19	1.98	3.70	0.002
158.5 - 199.5	74	14.48	10.36	6.21	9.91	0.007
199.5 - 251.2	77	15.07	17.04	12.84	22.74	0.015
251.2 - 316.2	71	13.89	24.67	23.28	46.02	0.027
316.2 - 398.1	39	7.63	20.52	23.85	69.87	0.027
398.1 - 501.2	9	1.76	7.13	10.14	80.01	0.012
501.2 - 631.0	7	1.37	8.59	15.18	95.19	0.017
631.0 - 794.3	1	0.20	2.09	4.81	100.00	0.006
-----	511.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 182	MAXIMUM DIAMETER = 693.8
SURFACE MEAN = 212	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 238	TOTAL DROPS IN SAMPLE = 511.
SAUTER MEAN = 301	TOTAL OUT OF FOCUS = 4
WEIGHT MEAN = 353	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 331	AVE. DROPS PER FRAME = 2.6
SAMPLE SIZE CHECK = 0.05	DEVIATION = 0.44

RELATIVE SPAN = (585.75 - 200.05) / 331.01 = 1.17
 ELAPSED TIME = 32 sec

B X5

Table E3-134

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10254
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	33	1.14	0.03	0.00	0.00	0.000
25.1 - 31.6	104	3.60	0.15	0.02	0.02	0.000
31.6 - 39.8	126	4.37	0.27	0.04	0.07	0.000
39.8 - 50.1	154	5.34	0.51	0.10	0.16	0.000
50.1 - 63.1	254	8.80	1.32	0.32	0.49	0.000
63.1 - 79.4	252	8.73	2.08	0.64	1.13	0.001
79.4 - 100.0	406	14.07	5.29	2.05	3.18	0.002
100.0 - 125.9	416	14.42	8.53	4.15	7.34	0.005
125.9 - 158.5	401	13.90	12.83	7.81	15.15	0.009
158.5 - 199.5	336	11.65	17.09	13.11	28.26	0.015
199.5 - 251.2	209	7.24	16.68	16.03	44.29	0.018
251.2 - 316.2	113	3.92	14.24	17.19	61.48	0.020
316.2 - 398.1	51	1.77	10.18	15.48	76.96	0.018
398.1 - 501.2	25	0.87	7.84	14.94	91.89	0.017
501.2 - 631.0	4	0.14	1.91	4.48	96.37	0.005
631.0 - 794.3	0	0.00	0.00	0.00	96.37	0.000
794.3 - 1000.0	1	0.03	1.05	3.63	100.00	0.004
-----	2885.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 123	MAXIMUM DIAMETER = 806.9
SURFACE MEAN = 146	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 171	TOTAL DROPS IN SAMPLE = 2885.
SAUTER MEAN = 233	TOTAL OUT OF FOCUS = 3
WEIGHT MEAN = 302	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 273	AVE. DROPS PER FRAME = 14.4
SAMPLE SIZE CHECK = 0.04	DEVIATION = 0.54

RELATIVE SPAN = (487.83 - 138.90) / 273.52 = 1.28
 ELAPSED TIME = 39 sec

B X5

Table E3-135

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10253
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	24	0.77	0.02	0.00	0.00	0.000
25.1 - 31.6	78	2.51	0.08	0.01	0.01	0.000
31.6 - 39.8	122	3.92	0.18	0.03	0.03	0.000
39.8 - 50.1	148	4.75	0.33	0.06	0.09	0.000
50.1 - 63.1	220	7.07	0.76	0.16	0.25	0.000
63.1 - 79.4	268	8.61	1.53	0.41	0.66	0.000
79.4 - 100.0	295	9.48	2.62	0.89	1.55	0.001
100.0 - 125.9	400	12.85	5.64	2.41	3.96	0.003
125.9 - 158.5	439	14.10	9.62	5.12	9.07	0.006
158.5 - 199.5	440	14.13	15.09	10.04	19.11	0.012
199.5 - 251.2	318	10.22	17.45	14.69	33.80	0.017
251.2 - 316.2	200	6.42	17.15	18.03	51.83	0.021
316.2 - 398.1	97	3.12	13.07	17.23	69.06	0.020
398.1 - 501.2	45	1.45	9.61	15.96	85.02	0.018
501.2 - 631.0	15	0.48	4.83	9.84	94.86	0.011
631.0 - 794.3	4	0.13	2.03	5.14	100.00	0.006
-----		-----	-----	-----	-----	-----
		3113.	100.00	100.00	100.00	

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 144	MAXIMUM DIAMETER = 699.3
SURFACE MEAN = 171	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 198	TOTAL DROPS IN SAMPLE = 3113.
SAUTER MEAN = 267	TOTAL OUT OF FOCUS = 2
WEIGHT MEAN = 334	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 310	AVE. DROPS PER FRAME = 15.6
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.53

RELATIVE SPAN = (564.96 - 163.32) / 310.17 = 1.29
 ELAPSED TIME = 45 sec

B X5

Table E3-136

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10257
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	29	0.77	0.02	0.00	0.00	0.000	
25.1 - 31.6	114	3.02	0.11	0.01	0.02	0.000	
31.6 - 39.8	159	4.21	0.22	0.03	0.05	0.000	
39.8 - 50.1	177	4.69	0.38	0.07	0.12	0.000	
50.1 - 63.1	258	6.83	0.87	0.21	0.33	0.000	
63.1 - 79.4	309	8.19	1.67	0.51	0.84	0.001	
79.4 - 100.0	453	12.00	3.79	1.43	2.27	0.002	
100.0 - 125.9	537	14.23	7.18	3.43	5.70	0.004	
125.9 - 158.5	549	14.54	11.42	6.80	12.50	0.008	
158.5 - 199.5	468	12.40	15.47	11.61	24.11	0.013	
199.5 - 251.2	356	9.43	18.43	17.31	41.42	0.020	
251.2 - 316.2	215	5.70	17.84	21.22	62.64	0.024	
316.2 - 398.1	112	2.97	14.20	20.88	83.52	0.024	
398.1 - 501.2	35	0.93	6.87	12.56	96.08	0.014	
501.2 - 631.0	3	0.08	1.12	2.81	98.89	0.003	
631.0 - 794.3	1	0.03	0.42	1.11	100.00	0.001	
-----		3775.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 135	MAXIMUM DIAMETER = 634.4
SURFACE MEAN = 159	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 182	TOTAL DROPS IN SAMPLE = 3775.
SAUTER MEAN = 239	TOTAL OUT OF FOCUS = 6
WEIGHT MEAN = 288	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 278	AVE. DROPS PER FRAME = 18.9
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.51

RELATIVE SPAN = (450.15 - 148.45) / 278.94 = 1.08
 ELAPSED TIME = 45 sec

B X5

Table E3-137

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10258
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	14	1.35	0.03	0.00	0.00	0.000
25.1 - 31.6	42	4.04	0.12	0.01	0.01	0.000
31.6 - 39.8	41	3.95	0.17	0.02	0.04	0.000
39.8 - 50.1	46	4.43	0.29	0.05	0.08	0.000
50.1 - 63.1	82	7.89	0.83	0.17	0.25	0.000
63.1 - 79.4	84	8.08	1.33	0.34	0.60	0.000
79.4 - 100.0	122	11.74	3.19	1.05	1.65	0.001
100.0 - 125.9	120	11.55	4.96	2.05	3.70	0.002
125.9 - 158.5	117	11.26	7.53	3.89	7.59	0.004
158.5 - 199.5	121	11.65	12.51	8.20	15.79	0.009
199.5 - 251.2	105	10.11	17.05	14.01	29.80	0.016
251.2 - 316.2	85	8.18	21.66	22.26	52.06	0.026
316.2 - 398.1	43	4.14	16.96	21.75	73.81	0.025
398.1 - 501.2	13	1.25	8.01	12.81	86.63	0.015
501.2 - 631.0	3	0.29	3.09	6.36	92.99	0.007
631.0 - 794.3	0	0.00	0.00	0.00	92.99	0.000
794.3 - 1000.0	1	0.10	2.29	7.01	100.00	0.008
-----	1039.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 143	MAXIMUM DIAMETER = 845.6
SURFACE MEAN = 173	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 202	TOTAL DROPS IN SAMPLE = 1039.
SAUTER MEAN = 276	TOTAL OUT OF FOCUS = 6
WEIGHT MEAN = 349	TOTAL FRAMES IN SAMPLE = 200
VOLUME MEDIAN = 310	AVE. DROPS PER FRAME = 5.2
SAMPLE SIZE CHECK = 0.07	DEVIATION = 0.54

RELATIVE SPAN = (567.39 - 172.86) / 310.99 = 1.27
 ELAPSED TIME = 26 sec

B X5

Table E3-138

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10259
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)		DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
25.1 -	31.6	7	2.72	0.02	0.00	0.00	0.000
31.6 -	39.8	9	3.50	0.04	0.00	0.00	0.000
39.8 -	50.1	7	2.72	0.06	0.01	0.01	0.000
50.1 -	63.1	9	3.50	0.11	0.01	0.02	0.000
63.1 -	79.4	12	4.67	0.22	0.03	0.05	0.000
79.4 -	100.0	14	5.45	0.44	0.08	0.14	0.000
100.0 -	125.9	25	9.73	1.13	0.26	0.40	0.000
125.9 -	158.5	21	8.17	1.46	0.42	0.82	0.000
158.5 -	199.5	21	8.17	2.45	0.91	1.72	0.001
199.5 -	251.2	20	7.78	3.55	1.63	3.35	0.002
251.2 -	316.2	16	6.23	4.92	2.96	6.31	0.003
316.2 -	398.1	26	10.12	12.22	9.12	15.43	0.010
398.1 -	501.2	27	10.51	18.90	17.16	32.59	0.020
501.2 -	631.0	32	12.45	36.23	41.90	74.49	0.048
631.0 -	794.3	11	4.28	18.26	25.51	100.00	0.029
-----		257.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN =	266	MAXIMUM DIAMETER =	759.7
SURFACE MEAN =	327	MINIMUM DIAMETER =	27.9
VOLUME MEAN =	373	TOTAL DROPS IN SAMPLE =	257.
SAUTER MEAN =	486	TOTAL OUT OF FOCUS =	7
WEIGHT MEAN =	534	TOTAL FRAMES IN SAMPLE =	200
VOLUME MEDIAN =	564	AVE. DROPS PER FRAME =	1.3
SAMPLE SIZE CHECK =	0.03	DEVIATION =	0.52

RELATIVE SPAN = (710.89 - 356.01) / 564.65 = 0.63
 ELAPSED TIME = 55 sec

B X5

Table E3-139

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89

TESTS INCLUDED: 10253 10254 10255 10256 10257 10258 10259

PRESSURE 79.0 PSI

CENTERLINE COORD 96.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 39.1 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT APART.

TESTS FROM CL. OF ARRAY.

DIAMETER (MICRONS)	DROPS	% OCCURRENCE	% SURFACE AREA	% VOLUME	CUM % VOLUME	CLASS CHECK
20.0 - 25.1	125	1.06	0.02	0.00	0.00	0.000
25.1 - 31.6	363	3.08	0.09	0.01	0.01	0.000
31.6 - 39.8	465	3.94	0.17	0.02	0.03	0.000
39.8 - 50.1	544	4.61	0.31	0.05	0.08	0.000
50.1 - 63.1	850	7.21	0.75	0.15	0.23	0.000
63.1 - 79.4	951	8.06	1.35	0.34	0.57	0.000
79.4 - 100.0	1342	11.38	3.01	0.94	1.50	0.001
100.0 - 125.9	1554	13.17	5.51	2.16	3.66	0.002
125.9 - 158.5	1581	13.40	8.74	4.28	7.94	0.005
158.5 - 199.5	1465	12.42	12.83	7.91	15.84	0.009
199.5 - 251.2	1099	9.32	15.20	11.77	27.61	0.013
251.2 - 316.2	720	6.10	15.78	15.38	42.99	0.018
316.2 - 398.1	408	3.46	13.99	17.06	60.06	0.020
398.1 - 501.2	223	1.89	11.89	18.06	78.12	0.021
501.2 - 631.0	82	0.70	6.91	13.19	91.31	0.015
631.0 - 794.3	21	0.18	2.75	6.53	97.84	0.007
794.3 - 1000.0	2	0.02	0.38	1.08	98.91	0.001
1000.0 - 1258.9	1	0.01	0.30	1.09	100.00	0.001
-----	11796.	100.00	100.00	100.00	100.00	-----

AVERAGE SPATIAL DIAMETERS (MICRONS) :

ARITHMETIC MEAN = 144	MAXIMUM DIAMETER = 1045.3
SURFACE MEAN = 175	MINIMUM DIAMETER = 24.2
VOLUME MEAN = 207	TOTAL DROPS IN SAMPLE = 11796.
SAUTER MEAN = 290	TOTAL OUT OF FOCUS = 34
WEIGHT MEAN = 374	TOTAL FRAMES IN SAMPLE = 1400
VOLUME MEDIAN = 350	AVE. DROPS PER FRAME = 8.4
SAMPLE SIZE CHECK = 0.01	DEVIATION = 0.59

RELATIVE SPAN = (617.64 - 171.17) / 350.89 = 1.27

ELAPSED TIME = 341 sec

C120

4. Droplet Velocities

Droplet velocities were measured for single nozzle and for 8 nozzle curtains at different elevations and x-y positions. The velocity vector field for a curtain of 8 TF16FCN nozzles is shown in the main report, Volume I, Figure 3.73.2-1.

The technique employed to measure droplet velocities was similar to the one for measuring droplet sizes. However, instead of a single exposure, a timed double exposure was used, thus creating pictures of droplet pairs, offset by a certain distance from which the velocity was evaluated by computer. Certain statistical criteria were applied to define valid pairs and to disregard droplets that moved in an angle to the plane of measurement.

The following Table E4-01 summarized the coordinates of the velocity measurement points. All points were in the vertical plane $y = 0$ below the spray header.

Table E4-01

Droplet Velocity Measurements

Table No.	No. of Nozzles	Type of Nozzle	Radical Coord. x, in.	Centerline Coord. z, in.
E4-02	1	TF-16FCN	-10	12
E4-03	1	TF-16FCN	0	12
E4-04	1	TF-16FCN	+10	12
E4-05	1	TF-16FCN	-10 to +10	12
E4-06	1	TF-16FCN	-32	48
E4-07	1	TF-16FCN	-18	48
E4-08	1	TF-16FCN	0	48
E4-09	1	TF-16FCN	+18	48
E4-10	1	TF-16FCN	+32	48
E4-11	1	TF-16FCN	-32 to +32	48
E4-12	1	TF-16FCN	-42	96
E4-13	1	TF-16FCN	-30	96
E4-14	1	TF-16FCN	0	96
E4-15	1	TF-16FCN	+30	96
E4-16	1	TF-16FCN	+42	96
E4-17	1	TF-16FCN	-42 to +42	96
E4-18	1	TF-16FCN	-54	192
E4-19	1	TF-16FCN	-36	192
E4-20	1	TF-16FCN	0	192
E4-21	1	TF-16FCN	+36	192
E4-22	1	TF-16FCN	+54	192
E4-23	1	TF-16FCN	-54 to +54	192
E4-24	8	TF-16FCN	-78	96
E4-25	8	TF-16FCN	-54	96
E4-26	8	TF-16FCN	-30	96
E4-27	8	TF-16FCN	0	96
E4-28	8	TF-16FCN	+30	96
E4-29	8	TF-16FCN	+54	96
E4-30	8	TF-16FCN	+78	96
E4-31	8	TF-16FCN	-78 to +78	96
E4-32	8	TF-20FCN	-78	96
E4-33	8	TF-20FCN	-54	96
E4-34	8	TF-20FCN	-30	96
E4-35	8	TF-20FCN	0	96
E4-36	8	TF-20FCN	+30	96
E4-37	8	TF-20FCN	+54	96
E4-38	8	TF-20FCN	+78	96
E4-39	8	TF-20FCN	-78 to +78	96

Table E4-02

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10251
PRESSURE 56.0 PSI
CENTERLINE COORD 12.0 INCHES
RADIAL COORD 10.0 INCHES
DIST FROM NOZZLE 15.6 INCHES
AZIMUTHAL ANGLE 39.8 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	4	13.34	2.85	9.81	17.57
39.8 - 50.1	5	31.06	22.17	11.42	68.52
50.1 - 63.1	9	25.94	24.66	5.57	83.79
63.1 - 79.4	17	26.46	11.94	7.45	43.61
79.4 - 100.0	15	36.08	19.03	8.33	67.72
100.0 - 125.9	16	36.21	23.93	8.07	85.17
125.9 - 158.5	18	33.27	13.40	11.13	67.03
158.5 - 199.5	12	28.10	6.54	21.51	42.39
199.5 - 251.2	18	37.43	16.16	17.20	83.34
251.2 - 316.2	13	43.71	12.06	27.78	76.75
316.2 - 398.1	12	44.43	3.70	38.26	52.71
398.1 - 501.2	7	52.31	7.33	40.53	64.30
501.2 - 631.0	8	55.79	3.99	51.07	62.65
631.0 - 794.3	3	56.45	2.78	53.40	60.10

INTERVAL(S) (MICROSEC): 50.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 157.
SINGLES: 965.
VEL AVERAGE: 36.34 FT/SEC
1107.71 CM/SEC

ELAPSED TIME = 1 min

A X5

Table E4-03

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10250
PRESSURE 56.0 PSI
CENTERLINE COORD 12.0 INCHES
RADIAL COORD 0.0 INCHES
DIST FROM NOZZLE 12.0 INCHES
AZIMUTHAL ANGLE 0.0 DEG
CYLINDRICAL ANGLE 0 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	2	24.38	20.12	4.26	44.50
31.6 - 39.8	1	59.82	0.00	59.82	59.82
39.8 - 50.1	1	49.67	0.00	49.67	49.67
50.1 - 63.1	2	23.49	1.52	21.98	25.00
63.1 - 79.4	1	78.57	0.00	78.57	78.57
79.4 - 100.0	2	64.93	13.88	51.06	78.81
100.0 - 125.9	2	66.09	17.65	48.45	83.74

INTERVAL(S) (MICROSEC): 50.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 11.
SINGLES: 469.
VEL AVERAGE: 49.62 FT/SEC
1512.55 CM/SEC
ELAPSED TIME = 2 min

A X5

Table E4-04

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10252
 PRESSURE 56.0 PSI
 CENTERLINE COORD 12.0 INCHES
 RADIAL COORD 10.0 INCHES
 DIST FROM NOZZLE 15.6 INCHES
 AZIMUTHAL ANGLE 39.8 DEG
 CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	4	13.14	5.39	6.62	20.67
31.6 - 39.8	4	38.54	23.26	4.13	64.22
39.8 - 50.1	6	14.40	9.52	4.62	33.03
50.1 - 63.1	13	17.41	11.17	4.62	37.01
63.1 - 79.4	18	17.12	10.71	5.17	39.62
79.4 - 100.0	24	26.14	20.58	6.54	88.92
100.0 - 125.9	28	28.56	18.50	8.33	78.51
125.9 - 158.5	17	34.92	22.90	13.87	81.22
158.5 - 199.5	25	24.88	11.75	10.18	71.21
199.5 - 251.2	23	34.46	8.85	20.07	50.19
251.2 - 316.2	16	36.75	7.18	19.00	49.73
316.2 - 398.1	11	43.67	8.61	34.36	67.70
398.1 - 501.2	9	45.87	3.08	40.37	49.24
501.2 - 631.0	6	49.03	3.00	44.88	52.81
631.0 - 794.3	2	50.33	0.47	49.96	50.69
794.3 - 1000.0	1	83.72	0.00	83.72	83.72

INTERVAL(S) (MICROSEC): 50.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 207.
 SINGLES: 1120.
 VEL AVERAGE: 30.06 FT/SEC
 916.25 CM/SEC

ELAPSED TIME = 1 min

A X5

Table E4-05

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED: 10250 10251 10252

PRESSURE	56.0	56.0	56.0
CENTERLINE COORD	12.0	12.0	12.0
RADIAL COORD	0.0	10.0	10.0
AZIMUTHAL ANGLE	0.0	0.0	39.8
CYLINDRICAL ANGLE	0.	0.	0.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	14	14.06	11.96	2.31	44.50
31.6 - 39.8	18	18.81	13.38	2.92	54.41
39.8 - 50.1	18	24.11	13.24	4.62	49.67
50.1 - 63.1	45	25.03	12.55	4.62	54.94
63.1 - 79.4	81	30.33	19.35	5.17	78.57
79.4 - 100.0	97	30.73	20.32	6.54	82.06
100.0 - 125.9	106	34.54	21.48	8.07	85.56
125.9 - 158.5	74	35.50	19.79	11.13	88.08
158.5 - 199.5	51	30.36	15.44	10.18	90.03
199.5 - 251.2	51	36.73	16.36	17.20	85.05
251.2 - 316.2	31	40.64	10.44	19.00	76.75
316.2 - 398.1	25	45.34	8.78	34.36	75.47
398.1 - 501.2	18	46.68	8.33	25.86	64.30
501.2 - 631.0	15	52.87	4.75	44.88	62.65
631.0 - 794.3	5	54.00	3.71	49.96	60.10
794.3 - 1000.0	1	83.72	0.00	83.72	83.72

INTERVAL(S) (MICROSEC): 50.0

RATIO: 15.75 MICRONS/PIXEL

VELOCITY FRAMES: 600

PAIRS: 650.

SINGLES: 2004.

VEL AVERAGE: 33.27 FT/SEC

1013.99 CM/SEC

ELAPSED TIME = 4 min

A X5

C118

Table E4-06

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10247
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 32.0 INCHES
 DIST FROM NOZZLE 57.7 INCHES
 AZIMUTHAL ANGLE 33.7 DEG
 CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	1	1.67	0.00	1.67	1.67
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	1	2.79	0.00	2.79	2.79
79.4 - 100.0	0				
100.0 - 125.9	2	5.15	1.45	3.70	6.60
125.9 - 158.5	0				
158.5 - 199.5	1	4.61	0.00	4.61	4.61
199.5 - 251.2	2	11.31	2.70	8.61	14.00
251.2 - 316.2	3	10.44	1.54	8.98	12.57
316.2 - 398.1	10	11.99	3.98	6.54	19.76
398.1 - 501.2	13	14.30	2.78	9.44	20.41
501.2 - 631.0	3	19.25	1.74	16.79	20.48
631.0 - 794.3	1	20.09	0.00	20.09	20.09

INTERVAL(S) (MICROSEC): 175.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 37.
 SINGLES: 225.
 VEL AVERAGE: 12.35 FT/SEC
 376.53 CM/SEC

ELAPSED TIME = 5 min

A X5

Table E4-07

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10246
PRESSURE 56.0 PSI
CENTERLINE COORD 48.0 INCHES
RADIAL COORD 18.0 INCHES
DIST FROM NOZZLE 51.3 INCHES
AZIMUTHAL ANGLE 20.6 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	1	3.94	0.00	3.94	3.94
39.8 - 50.1	1	2.44	0.00	2.44	2.44
50.1 - 63.1	3	8.94	4.34	2.80	12.11
63.1 - 79.4	1	4.23	0.00	4.23	4.23
79.4 - 100.0	4	8.24	7.64	3.08	21.39
100.0 - 125.9	10	8.66	6.89	2.67	22.22
125.9 - 158.5	15	6.58	3.10	3.30	13.84
158.5 - 199.5	15	6.66	1.37	4.39	9.34
199.5 - 251.2	13	8.06	2.24	5.05	12.46
251.2 - 316.2	5	10.11	1.86	6.95	11.89
316.2 - 398.1	7	17.20	4.16	10.60	22.70
398.1 - 501.2	2	20.07	2.42	17.65	22.49

INTERVAL(S) (MICROSEC): 175.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 77.
SINGLES: 354.
VEL AVERAGE: 8.72 FT/SEC
265.80 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-08

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10245
PRESSURE 56.0 PSI
CENTERLINE COORD 48.0 INCHES
RADIAL COORD 0.0 INCHES
DIST FROM NOZZLE 48.0 INCHES
AZIMUTHAL ANGLE 0.0 DEG
CYLINDRICAL ANGLE 0 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	23	20.10	7.54	6.35	36.76
31.6 - 39.8	29	21.39	10.77	6.79	47.11
39.8 - 50.1	29	23.99	12.79	4.87	51.78
50.1 - 63.1	47	23.34	11.76	6.16	54.66
63.1 - 79.4	59	20.68	10.10	5.56	49.79
79.4 - 100.0	51	19.52	8.96	6.89	40.94
100.0 - 125.9	51	19.68	7.17	9.06	53.55
125.9 - 158.5	17	22.94	6.46	13.85	42.31
158.5 - 199.5	11	25.98	5.89	14.54	33.78
199.5 - 251.2	2	32.75	1.72	31.04	34.46

INTERVAL(S) (MICROSEC): 75.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 319.
SINGLES: 1167.
VEL AVERAGE: 21.43 FT/SEC
653.12 CM/SEC

ELAPSED TIME = 1 min

A X5

Table E4-09

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10248
PRESSURE 56.0 PSI
CENTERLINE COORD 48.0 INCHES
RADIAL COORD 18.0 INCHES
DIST FROM NOZZLE 51.3 INCHES
AZIMUTHAL ANGLE 20.6 DEG
CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	1	4.73	0.00	4.73	4.73
31.6 - 39.8	2	5.98	3.25	2.72	9.23
39.8 - 50.1	0				
50.1 - 63.1	3	2.12	0.88	1.18	3.30
63.1 - 79.4	7	5.56	2.02	1.77	8.57
79.4 - 100.0	5	5.87	0.99	4.15	7.19
100.0 - 125.9	9	8.91	4.95	2.72	17.09
125.9 - 158.5	10	9.57	4.59	3.46	17.22
158.5 - 199.5	13	9.62	4.82	4.59	22.56
199.5 - 251.2	16	10.11	5.40	5.06	22.76
251.2 - 316.2	14	9.89	5.97	5.03	22.85
316.2 - 398.1	10	13.15	2.55	8.65	16.80
398.1 - 501.2	6	16.54	5.35	9.04	22.89
501.2 - 631.0	3	22.29	1.74	19.84	23.73

INTERVAL(S) (MICROSEC): 175.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 99.
SINGLES: 330.
VEL AVERAGE: 10.00 FT/SEC
304.82 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-10

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10249
 PRESSURE 56.0 PSI
 CENTERLINE COORD 48.0 INCHES
 RADIAL COORD 32.0 INCHES
 DIST FROM NOZZLE 57.7 INCHES
 AZIMUTHAL ANGLE 33.7 DEG
 CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	0				
79.4 - 100.0	0				
100.0 - 125.9	0				
125.9 - 158.5	0				
158.5 - 199.5	1	8.50	0.00	8.50	8.50
199.5 - 251.2	2	8.39	0.20	8.19	8.59
251.2 - 316.2	3	8.79	1.08	7.29	9.82
316.2 - 398.1	25	10.50	2.86	7.48	19.68
398.1 - 501.2	29	12.92	3.23	7.95	21.13
501.2 - 631.0	9	17.12	1.60	14.69	19.68

INTERVAL(S) (MICROSEC): 175.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 69.
 SINGLES: 175.
 VEL AVERAGE: 12.22 FT/SEC
 372.36 CM/SEC

ELAPSED TIME = 10 min

A X5

Table E4-11

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED:	10245	10246	10247	10248	10249
PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	48.0	48.0	48.0	48.0	48.0
RADIAL COORD	0.0	18.0	32.0	18.0	32.0
AZIMUTHAL ANGLE	0.0	0.0	20.6	20.6	33.7
CYLINDRICAL ANGLE	0.	270.	270.	90.	90.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	24	19.46	8.00	4.73	36.76
31.6 - 39.8	32	19.88	11.31	2.72	47.11
39.8 - 50.1	31	22.73	13.27	2.44	51.78
50.1 - 63.1	53	21.32	12.53	1.18	54.66
63.1 - 79.4	68	18.61	10.81	1.77	49.79
79.4 - 100.0	62	17.46	9.67	2.67	40.94
100.0 - 125.9	71	16.83	8.35	2.72	53.55
125.9 - 158.5	39	14.72	8.90	3.46	42.31
158.5 - 199.5	39	13.21	9.14	4.59	33.78
199.5 - 251.2	33	11.26	6.88	5.06	34.46
251.2 - 316.2	24	9.99	4.67	5.03	22.85
316.2 - 398.1	51	12.31	3.89	7.02	22.70
398.1 - 501.2	50	14.00	3.83	7.95	22.89
501.2 - 631.0	16	18.36	2.67	14.69	23.73
631.0 - 794.3	1	20.09	0.00	20.09	20.09

INTERVAL(S) (MICROSEC): 75.0 175.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 1000
 PAIRS: 594.
 SINGLES: 2265.
 VEL AVERAGE: 16.54 FT/SEC
 504.05 CM/SEC

ELAPSED TIME = 20 min
 C116

A X5

Table E4-12

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10242
PRESSURE 56.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 42.0 INCHES
DIST FROM NOZZLE 104.8 INCHES
AZIMUTHAL ANGLE 23.6 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	0				
79.4 - 100.0	0				
100.0 - 125.9	0				
125.9 - 158.5	2	6.43	0.71	5.73	7.14
158.5 - 199.5	1	2.93	0.00	2.93	2.93
199.5 - 251.2	1	5.95	0.00	5.95	5.95
251.2 - 316.2	7	6.94	1.51	5.02	10.07
316.2 - 398.1	29	7.36	1.22	5.58	10.20
398.1 - 501.2	42	7.41	1.15	5.89	10.49
501.2 - 631.0	10	9.19	1.63	6.73	11.87

INTERVAL(S) (MICROSEC): 300.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 92.
SINGLES: 147.
VEL AVERAGE: 7.47 FT/SEC
227.63 CM/SEC

ELAPSED TIME = 20 min

A X5

Table E4-13

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10241
PRESSURE 56.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 30.0 INCHES
DIST FROM NOZZLE 100.6 INCHES
AZIMUTHAL ANGLE 17.4 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	4	2.35	0.47	1.87	3.11
63.1 - 79.4	0				
79.4 - 100.0	5	4.56	1.57	2.27	6.84
100.0 - 125.9	3	3.85	0.54	3.11	4.39
125.9 - 158.5	6	4.83	1.33	3.37	7.13
158.5 - 199.5	3	6.37	0.49	5.68	6.73
199.5 - 251.2	12	6.85	3.20	2.56	14.94
251.2 - 316.2	20	5.88	1.15	3.61	8.11
316.2 - 398.1	9	9.18	3.19	6.17	15.63
398.1 - 501.2	5	11.06	1.24	9.21	12.84
501.2 - 631.0	1	14.09	0.00	14.09	14.09
631.0 - 794.3	1	17.01	0.00	17.01	17.01

INTERVAL(S) (MICROSEC): 250.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 69.
SINGLES: 238.
VEL AVERAGE: 6.68 FT/SEC
203.47 CM/SEC
ELAPSED TIME = 4 min

A X5

Table E4-14

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10240
PRESSURE 56.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 0.0 INCHES
DIST FROM NOZZLE 96.0 INCHES
AZIMUTHAL ANGLE 0.0 DEG
CYLINDRICAL ANGLE 0 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	4	11.89	2.58	9.16	16.03
31.6 - 39.8	5	12.20	5.25	3.73	17.25
39.8 - 50.1	5	20.29	4.04	12.51	23.83
50.1 - 63.1	21	13.55	7.06	5.40	28.60
63.1 - 79.4	30	14.89	7.80	3.10	31.97
79.4 - 100.0	40	14.46	7.91	4.26	41.58
100.0 - 125.9	44	14.99	6.30	4.65	33.80
125.9 - 158.5	42	14.85	6.01	6.74	41.84
158.5 - 199.5	28	15.11	5.02	6.20	24.31
199.5 - 251.2	20	17.53	4.61	10.35	31.08
251.2 - 316.2	3	11.52	0.35	11.16	11.99

INTERVAL(S) (MICROSEC): 100.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 242.
SINGLES: 878.
VEL AVERAGE: 14.92 FT/SEC
454.82 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-15

RETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10243
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	2	1.58	0.76	0.82	2.34
39.8 - 50.1	1	1.16	0.00	1.16	1.16
50.1 - 63.1	0				
63.1 - 79.4	0				
79.4 - 100.0	1	7.11	0.00	7.11	7.11
100.0 - 125.9	0				
125.9 - 158.5	9	6.27	2.43	3.11	10.60
158.5 - 199.5	6	6.11	2.00	3.45	9.18
199.5 - 251.2	8	8.14	2.09	5.33	11.56
251.2 - 316.2	13	7.97	2.36	5.71	14.53
316.2 - 398.1	14	8.64	1.88	5.95	12.47
398.1 - 501.2	12	10.73	2.22	7.31	15.73
501.2 - 631.0	5	13.54	2.84	10.45	18.30
631.0 - 794.3	2	19.06	0.76	18.30	19.81

INTERVAL(S) (MICROSEC): 200.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 73.
 SINGLES: 201.
 VEL AVERAGE: 8.61 FT/SEC
 262.46 CM/SEC

ELAPSED TIME = 5 min

A X5

Table E4-16

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10244
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 42.0 INCHES
 DIST FROM NOZZLE 104.8 INCHES
 AZIMUTHAL ANGLE 23.6 DEG
 CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	1	2.28	0.00	2.28	2.28
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	1	2.20	0.00	2.20	2.20
79.4 - 100.0	2	1.87	0.20	1.67	2.07
100.0 - 125.9	0				
125.9 - 158.5	0				
158.5 - 199.5	1	4.26	0.00	4.26	4.26
199.5 - 251.2	2	5.87	2.56	3.31	8.44
251.2 - 316.2	1	5.59	0.00	5.59	5.59
316.2 - 398.1	2	7.67	0.85	6.82	8.52
398.1 - 501.2	29	7.03	0.68	5.62	8.48
501.2 - 631.0	11	9.88	2.01	7.47	14.24
631.0 - 794.3	2	14.63	1.53	13.10	16.16
794.3 - 1000.0	1	16.51	0.00	16.51	16.51

INTERVAL(S) (MICROSEC): 250.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 53.
 SINGLES: 181.
 VEL AVERAGE: 7.61 FT/SEC
 232.11 CM/SEC

ELAPSED TIME = 20 min

A X5

Table E4-17

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED:	10240	10241	10242	10243	10244
PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	96.0	96.0	96.0	96.0	96.0
RADIAL COORD	0.0	0.0	42.0	30.0	42.0
AZIMUTHAL ANGLE	0.0	0.0	17.4	17.4	23.6
CYLINDRICAL ANGLE	0.	270.	270.	90.	90.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	5	10.10	4.26	2.92	16.03
31.6 - 39.8	9	8.05	6.21	0.82	17.25
39.8 - 50.1	6	17.10	8.03	1.16	23.83
50.1 - 63.1	25	11.76	7.67	1.87	28.60
63.1 - 79.4	30	14.89	7.80	3.10	31.97
79.4 - 100.0	48	12.75	8.21	1.67	41.58
100.0 - 125.9	47	14.28	6.68	3.11	33.80
125.9 - 158.5	59	12.24	6.62	3.11	41.84
158.5 - 199.5	39	12.46	6.07	2.93	24.31
199.5 - 251.2	43	11.99	6.39	2.56	31.08
251.2 - 316.2	44	7.04	2.21	3.61	14.53
316.2 - 398.1	54	8.00	2.00	5.58	15.63
398.1 - 501.2	88	7.95	1.89	5.62	15.73
501.2 - 631.0	27	10.46	2.67	6.73	18.30
631.0 - 794.3	5	16.88	2.26	13.10	19.81
794.3 - 1000.0	1	16.51	0.00	16.51	16.51

INTERVAL(S) (MICROSEC): 100.0 250.0 300.0 200.0 250.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 1000
 PAIRS: 530.
 SINGLES: 1643.
 VEL AVERAGE: 10.94 FT/SEC
 333.42 CM/SEC

ELAPSED TIME = 51 min
 C115

A X5

Table E4-18

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10238
PRESSURE 56.0 PSI
CENTERLINE COORD 192.0 INCHES
RADIAL COORD 54.0 INCHES
DIST FROM NOZZLE 199.4 INCHES
AZIMUTHAL ANGLE 15.7 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	2	4.07	2.02	2.06	6.09
63.1 - 79.4	1	4.95	0.00	4.95	4.95
79.4 - 100.0	2	2.80	0.23	2.58	3.03
100.0 - 125.9	1	4.10	0.00	4.10	4.10
125.9 - 158.5	6	4.51	1.16	2.91	6.21
158.5 - 199.5	4	6.32	1.52	3.70	7.53
199.5 - 251.2	11	6.74	1.12	4.23	8.55
251.2 - 316.2	9	6.26	1.23	4.49	7.92
316.2 - 398.1	33	7.21	1.31	3.83	9.56
398.1 - 501.2	29	7.93	1.29	6.23	11.50
501.2 - 631.0	3	8.97	1.08	7.46	9.90
631.0 - 794.3	2	11.09	0.07	11.07	11.10

INTERVAL(S) (MICROSEC): 350.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 103.
SINGLES: 165.
VEL AVERAGE: 7.02 FT/SEC
213.85 CM/SEC

ELAPSED TIME = 13 min

A X5

Table E4-19

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10230
PRESSURE 56.0 PSI
CENTERLINE COORD 192.0 INCHES
RADIAL COORD 36.0 INCHES
DIST FROM NOZZLE 195.3 INCHES
AZIMUTHAL ANGLE 10.6 DEG
CYLINDRICAL ANGLE 270 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	3	3.89	1.55	1.70	5.11
79.4 - 100.0	6	6.63	1.70	4.53	10.14
100.0 - 125.9	4	5.81	1.53	4.12	8.27
125.9 - 158.5	11	5.43	1.86	2.04	8.19
158.5 - 199.5	11	6.48	1.79	4.42	10.34
199.5 - 251.2	19	7.42	2.91	2.81	16.85
251.2 - 316.2	29	8.92	2.63	5.62	16.45
316.2 - 398.1	14	8.53	1.48	5.97	11.16
398.1 - 501.2	7	9.06	2.13	5.92	12.45
501.2 - 631.0	4	10.95	1.00	9.57	12.34

INTERVAL(S) (MICROSEC): 150.0 200.0 250.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 108.
SINGLES: 236.
VEL AVERAGE: 7.70 FT/SEC
234.80 CM/SEC

ELAPSED TIME = 4 min

A X5

Table E4-20

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10229
 PRESSURE 56.0 PSI
 CENTERLINE COORD 192.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 192.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	1	6.24	0.00	6.24	6.24
31.6 - 39.8	0				
39.8 - 50.1	1	7.31	0.00	7.31	7.31
50.1 - 63.1	0				
63.1 - 79.4	0				
79.4 - 100.0	6	8.86	2.75	4.15	12.30
100.0 - 125.9	9	8.90	2.36	5.21	12.08
125.9 - 158.5	21	8.42	3.14	4.15	16.21
158.5 - 199.5	24	9.08	3.75	3.85	19.99
199.5 - 251.2	25	9.40	3.15	4.49	17.28
251.2 - 316.2	19	10.37	1.72	7.96	14.13
316.2 - 398.1	5	13.26	3.52	9.36	19.30

INTERVAL(S) (MICROSEC): 150.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 111.
 SINGLES: 391.
 VEL AVERAGE: 9.37 FT/SEC
 285.55 CM/SEC

ELAPSED TIME = 3 min

A X5

Table E4-21

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10239
 PRESSURE 56.0 PSI
 CENTERLINE COORD 192.0 INCHES
 RADIAL COORD 36.0 INCHES
 DIST FROM NOZZLE 195.3 INCHES
 AZIMUTHAL ANGLE 10.6 DEG
 CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	1	0.75	0.00	0.75	0.75
39.8 - 50.1	0				
50.1 - 63.1	2	3.40	2.52	0.88	5.92
63.1 - 79.4	1	5.77	0.00	5.77	5.77
79.4 - 100.0	4	5.87	2.36	2.62	9.29
100.0 - 125.9	11	7.80	2.90	3.88	13.93
125.9 - 158.5	11	7.32	2.70	2.88	13.70
158.5 - 199.5	18	8.04	1.99	5.17	12.13
199.5 - 251.2	27	8.85	2.24	3.61	13.99
251.2 - 316.2	27	9.37	1.80	5.44	11.84
316.2 - 398.1	22	10.52	2.10	5.79	15.70
398.1 - 501.2	15	12.65	2.14	7.90	15.37
501.2 - 631.0	5	12.48	1.52	10.35	15.10

INTERVAL(S) (MICROSEC): 250.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 144.
 SINGLES: 263.
 VEL AVERAGE: 9.19 FT/SEC
 280.11 CM/SEC

ELAPSED TIME = 3 min

A X5

Table E4-22

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10237
PRESSURE 56.0 PSI
CENTERLINE COORD 192.0 INCHES
RADIAL COORD 54.0 INCHES
DIST FROM NOZZLE 199.4 INCHES
AZIMUTHAL ANGLE 15.7 DEG
CYLINDRICAL ANGLE 90 DEG

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	1	3.62	0.00	3.62	3.62
50.1 - 63.1	1	1.72	0.00	1.72	1.72
63.1 - 79.4	5	3.47	2.00	1.56	6.93
79.4 - 100.0	1	6.18	0.00	6.18	6.18
100.0 - 125.9	6	5.83	1.75	2.76	8.07
125.9 - 158.5	7	5.51	1.90	3.27	8.81
158.5 - 199.5	7	6.01	1.79	2.07	8.41
199.5 - 251.2	13	6.25	2.11	2.48	9.21
251.2 - 316.2	9	8.83	1.58	5.51	10.54
316.2 - 398.1	8	10.44	2.06	7.25	14.45
398.1 - 501.2	11	11.51	1.97	8.10	13.84
501.2 - 631.0	7	10.59	1.49	8.10	12.10
631.0 - 794.3	6	12.36	1.31	10.54	14.55

INTERVAL(S) (MICROSEC): 300.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 82.
SINGLES: 197.
VEL AVERAGE: 8.09 FT/SEC
246.69 CM/SEC

ELAPSED TIME = 13 min

A X5

Table E4-23

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED:	10229	10230	10237	10238	10239
PRESSURE	56.0	56.0	56.0	56.0	56.0
CENTERLINE COORD	192.0	192.0	192.0	192.0	192.0
RADIAL COORD	0.0	36.0	36.0	54.0	54.0
AZIMUTHAL ANGLE	0.0	0.0	10.6	15.7	15.7
CYLINDRICAL ANGLE	0.	90.	270.	90.	270.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	1	6.24	0.00	6.24	6.24
31.6 - 39.8	0				
39.8 - 50.1	2	5.47	1.84	3.62	7.31
50.1 - 63.1	2	3.99	1.93	2.06	5.92
63.1 - 79.4	10	3.97	1.81	1.56	6.93
79.4 - 100.0	18	6.95	2.71	2.58	12.30
100.0 - 125.9	32	7.67	3.18	2.76	17.29
125.9 - 158.5	56	6.83	2.93	2.04	16.21
158.5 - 199.5	64	7.83	2.97	2.07	19.99
199.5 - 251.2	95	8.13	2.78	2.81	17.28
251.2 - 316.2	93	9.08	2.29	4.49	16.45
316.2 - 398.1	82	9.01	2.58	3.83	19.30
398.1 - 501.2	62	9.83	2.70	5.92	15.37
501.2 - 631.0	19	10.91	1.76	7.46	15.10
631.0 - 794.3	8	12.04	1.26	10.54	14.55

INTERVAL(S) (MICROSEC): 150.0 200.0 250.0 300.0 350.0 250.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 1000
PAIRS: 544.
SINGLES: 1260.
VEL AVERAGE: 8.43 FT/SEC
257.06 CM/SEC

ELAPSED TIME = 36 min
C114

A X5

Table E4-24

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10267
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	13	2.33	1.07	0.52	3.39
31.6 - 39.8	1	3.70	0.00	3.70	3.70
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	1	9.16	0.00	9.16	9.16
79.4 - 100.0	0				
100.0 - 125.9	0				
125.9 - 158.5	0				
158.5 - 199.5	1	5.51	0.00	5.51	5.51
199.5 - 251.2	2	7.52	0.50	7.03	8.02
251.2 - 316.2	10	7.36	0.98	5.52	8.55
316.2 - 398.1	8	8.07	0.65	6.80	8.90
398.1 - 501.2	12	8.53	1.26	6.12	11.34
501.2 - 631.0	5	12.14	0.75	11.12	13.09

INTERVAL(S) (MICROSEC): 300.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 53.
 SINGLES: 194.
 VEL AVERAGE: 6.89 FT/SEC
 209.91 CM/SEC

ELAPSED TIME = 8 min

A X

Table E-25

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
TEST NUMBER 10268
PRESSURE 56.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 54.0 INCHES
DIST FROM NOZZLE 110.1 INCHES
AZIMUTHAL ANGLE 29.4 DEG
CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	1	0.58	0.00	0.58	0.58
39.8 - 50.1	1	1.07	0.00	1.07	1.07
50.1 - 63.1	3	5.94	1.70	4.51	8.33
63.1 - 79.4	3	6.01	0.38	5.52	6.46
79.4 - 100.0	6	7.17	1.83	4.90	9.43
100.0 - 125.9	13	8.24	2.82	5.18	16.27
125.9 - 158.5	11	9.35	3.78	6.34	18.49
158.5 - 199.5	18	8.52	2.86	3.37	13.34
199.5 - 251.2	35	9.25	2.78	4.77	20.39
251.2 - 316.2	27	10.38	2.63	6.03	17.73
316.2 - 398.1	19	13.86	3.67	8.54	23.01
398.1 - 501.2	8	14.91	2.81	11.99	19.59
501.2 - 631.0	1	21.09	0.00	21.09	21.09

INTERVAL(S) (MICROSEC): 200.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 146.
SINGLES: 356.
VEL AVERAGE: 9.94 FT/SEC
303.09 CM/SEC
ELAPSED TIME = 2 min A X

Table E4-26

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10269
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	5	6.61	4.28	1.38	11.41
31.6 - 39.8	5	13.77	3.87	9.37	20.65
39.8 - 50.1	10	14.55	4.08	5.89	20.00
50.1 - 63.1	15	16.80	7.25	4.87	30.51
63.1 - 79.4	25	14.46	6.15	7.03	34.61
79.4 - 100.0	43	19.51	9.62	4.62	39.78
100.0 - 125.9	49	23.19	12.72	5.51	53.06
125.9 - 158.5	61	22.49	11.12	7.61	58.64
158.5 - 199.5	59	20.55	5.97	7.58	42.40
199.5 - 251.2	41	21.52	5.52	12.48	48.26
251.2 - 316.2	23	21.39	3.89	12.48	30.82
316.2 - 398.1	12	22.72	6.53	12.04	39.93
398.1 - 501.2	4	29.73	3.94	24.85	34.90
501.2 - 631.0	1	29.92	0.00	29.92	29.92

INTERVAL(S) (MICROSEC): 75.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 353.
 SINGLES: 1252.
 VEL AVERAGE: 20.48 FT/SEC
 624.10 CM/SEC
 ELAPSED TIME = 2 min

A X

Table E4-27

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10270
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN		PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 -	31.6	1	5.89	0.00	5.89	5.89
31.6 -	39.8	0				
39.8 -	50.1	5	17.90	2.41	14.54	22.05
50.1 -	63.1	15	18.10	4.47	9.94	23.59
63.1 -	79.4	14	21.32	9.52	7.03	38.13
79.4 -	100.0	28	19.97	9.06	7.58	45.15
100.0 -	125.9	41	21.84	10.96	7.86	57.95
125.9 -	158.5	58	20.47	10.78	6.35	53.91
158.5 -	199.5	57	21.45	5.50	11.74	41.22
199.5 -	251.2	59	24.07	7.92	9.65	53.64
251.2 -	316.2	47	23.66	7.36	11.74	56.51
316.2 -	398.1	10	27.68	5.14	17.97	35.17
398.1 -	501.2	7	26.95	6.29	20.99	39.99
501.2 -	631.0	2	23.85	3.17	20.67	27.02
631.0 -	794.3	1	39.20	0.00	39.20	39.20
794.3 -	1000.0	1	43.28	0.00	43.28	43.28

INTERVAL(S) (MICROSEC): 75.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 346.
 SINGLES: 1291.
 VEL AVERAGE: 22.13 FT/SEC
 674.58 CM/SEC

ELAPSED TIME = 2 min

A X

Table E4-28

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10271
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	3	10.18	1.40	8.38	11.80
50.1 - 63.1	2	14.83	4.47	10.36	19.30
63.1 - 79.4	8	17.06	5.17	7.58	25.34
79.4 - 100.0	11	15.00	5.05	5.68	23.76
100.0 - 125.9	19	19.29	10.85	8.72	48.48
125.9 - 158.5	30	17.13	7.90	6.93	50.48
158.5 - 199.5	47	19.95	10.11	7.61	53.92
199.5 - 251.2	48	20.26	9.39	11.03	55.65
251.2 - 316.2	51	20.00	5.28	12.71	40.80
316.2 - 398.1	35	22.91	4.39	15.18	33.09
398.1 - 501.2	15	28.56	5.34	16.67	40.18
501.2 - 631.0	4	27.72	4.17	23.47	32.46
631.0 - 794.3	1	25.95	0.00	25.95	25.95

INTERVAL(S) (MICROSEC): 75.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 274.
 SINGLES: 750.
 VEL AVERAGE: 20.22 FT/SEC
 616.22 CM/SEC

ELAPSED TIME = 2 min A X

Table E4-29

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10272
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	2	5.34	4.19	1.16	9.53
31.6 - 39.8	2	2.92	1.76	1.16	4.68
39.8 - 50.1	3	11.72	3.05	8.41	15.78
50.1 - 63.1	6	8.03	3.22	3.47	13.73
63.1 - 79.4	16	13.22	5.46	5.09	24.07
79.4 - 100.0	22	12.45	4.53	4.26	25.20
100.0 - 125.9	37	12.53	6.10	3.14	35.66
125.9 - 158.5	43	11.94	6.23	4.68	34.13
158.5 - 199.5	58	11.81	3.59	5.89	22.89
199.5 - 251.2	54	14.02	5.18	6.74	31.44
251.2 - 316.2	32	16.13	5.03	7.77	30.62
316.2 - 398.1	19	18.13	5.38	11.38	36.20
398.1 - 501.2	6	20.83	3.16	17.09	25.85
501.2 - 631.0	1	20.81	0.00	20.81	20.81

INTERVAL(S) (MICROSEC): 100.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 301.
 SINGLES: 683.
 VEL AVERAGE: 13.32 FT/SEC
 406.14 CM/SEC
 ELAPSED TIME = 2 min

A X

Table E4-30

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89
 TEST NUMBER 10273
 PRESSURE 56.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT. APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	0				
31.6 - 39.8	0				
39.8 - 50.1	0				
50.1 - 63.1	2	4.57	1.46	3.11	6.03
63.1 - 79.4	1	2.34	0.00	2.34	2.34
79.4 - 100.0	3	3.80	1.23	2.39	5.39
100.0 - 125.9	6	3.96	1.42	2.27	6.86
125.9 - 158.5	7	7.04	3.19	1.70	11.74
158.5 - 199.5	8	6.68	0.69	5.78	7.81
199.5 - 251.2	7	6.01	2.14	3.45	9.37
251.2 - 316.2	11	7.72	1.08	5.02	9.36
316.2 - 398.1	22	8.79	1.41	5.51	11.42
398.1 - 501.2	26	10.17	1.83	6.05	12.88
501.2 - 631.0	2	12.12	0.20	11.93	12.31
631.0 - 794.3	1	13.48	0.00	13.48	13.48

INTERVAL(S) (MICROSEC): 300.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 96.
 SINGLES: 237.
 VEL AVERAGE: 8.04 FT/SEC
 245.11 CM/SEC

ELAPSED TIME = 3 min A X

Table E4-31

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF16FCN

TEST DATE 2/24/89

TESTS INCLUDED: 10267 10268 10269 10270 10271 10272 10273

PRESSURE 56.0 PSI

CENTERLINE COORD 96.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 39.1 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT. APART.

TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	22	4.14	3.50	0.52	11.41
31.6 - 39.8	9	9.02	6.36	0.58	18.61
39.8 - 50.1	23	14.07	5.10	1.07	22.05
50.1 - 63.1	39	14.93	6.53	3.11	24.82
63.1 - 79.4	73	15.92	7.96	2.34	38.13
79.4 - 100.0	122	17.62	10.01	2.39	49.34
100.0 - 125.9	167	18.48	11.81	2.27	56.04
125.9 - 158.5	211	17.91	10.34	1.70	58.64
158.5 - 199.5	251	17.20	7.71	3.37	55.56
199.5 - 251.2	245	17.97	8.64	3.45	55.65
251.2 - 316.2	205	17.98	7.51	5.02	56.51
316.2 - 398.1	127	18.09	7.91	5.51	39.93
398.1 - 501.2	78	17.39	9.26	6.05	40.18
501.2 - 631.0	17	20.67	8.21	11.12	36.07
631.0 - 794.3	3	26.21	10.50	13.48	39.20
794.3 - 1000.0	1	43.28	0.00	43.28	43.28

INTERVAL(S) (MICROSEC): 300.0 200.0 75.0 100.0 300.0

RATIO: 15.75 MICRONS/PIXEL

VELOCITY FRAMES: 1400

PAIRS: 1593.

SINGLES: 4715.

VEL AVERAGE: 17.44 FT/SEC
531.69 CM/SEC

ELAPSED TIME = 21 min

A X

C122

Table E4-32

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
TEST NUMBER 10263
PRESSURE 79.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 78.0 INCHES
DIST FROM NOZZLE 123.7 INCHES
AZIMUTHAL ANGLE 39.1 DEG
CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	30	2.79	2.08	0.49	7.70
31.6 - 39.8	3	1.50	0.36	1.24	2.02
39.8 - 50.1	0				
50.1 - 63.1	0				
63.1 - 79.4	0				
79.4 - 100.0	0				
100.0 - 125.9	0				
125.9 - 158.5	0				
158.5 - 199.5	2	5.07	3.14	1.93	8.21
199.5 - 251.2	1	7.20	0.00	7.20	7.20
251.2 - 316.2	0				
316.2 - 398.1	3	9.50	2.75	6.41	13.09
398.1 - 501.2	2	8.26	0.16	8.11	8.41

INTERVAL(S) (MICROSEC): 300.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 41.
SINGLES: 230.
VEL AVERAGE: 3.67 FT/SEC
111.97 CM/SEC

ELAPSED TIME = 3 min

A X5

Table E4-33

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10262
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 54.0 INCHES
 DIST FROM NOZZLE 110.1 INCHES
 AZIMUTHAL ANGLE 29.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN		PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 -	31.6	9	3.56	1.31	1.03	4.93
31.6 -	39.8	2	2.16	0.62	1.54	2.78
39.8 -	50.1	0				
50.1 -	63.1	3	8.22	3.16	4.16	11.88
63.1 -	79.4	3	7.38	1.95	5.90	10.14
79.4 -	100.0	5	7.69	1.73	5.68	10.54
100.0 -	125.9	14	7.57	4.72	2.62	23.48
125.9 -	158.5	9	8.43	3.71	3.51	14.54
158.5 -	199.5	17	9.26	4.03	3.51	21.80
199.5 -	251.2	27	11.26	2.92	6.02	19.06
251.2 -	316.2	22	10.90	3.12	5.39	18.08
316.2 -	398.1	14	13.44	2.62	7.96	18.47
398.1 -	501.2	7	16.09	5.13	10.69	24.90

INTERVAL(S) (MICROSEC): 150.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 132.
 SINGLES: 472.
 VEL AVERAGE: 9.89 FT/SEC
 301.49 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-34

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10261
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 270 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	14	10.66	5.20	3.10	23.23
31.6 - 39.8	22	15.68	9.04	2.31	27.99
39.8 - 50.1	19	17.78	8.22	2.31	31.44
50.1 - 63.1	24	25.02	6.92	13.48	40.37
63.1 - 79.4	48	26.62	10.21	9.30	51.32
79.4 - 100.0	53	24.29	13.19	8.52	60.50
100.0 - 125.9	102	25.32	11.90	7.31	67.22
125.9 - 158.5	93	27.39	10.94	10.34	81.30
158.5 - 199.5	102	29.69	10.99	11.56	67.03
199.5 - 251.2	73	31.18	11.72	14.47	77.69
251.2 - 316.2	41	36.41	8.66	22.77	64.12
316.2 - 398.1	13	39.84	15.43	26.09	85.82
398.1 - 501.2	15	39.43	4.19	28.94	45.15
501.2 - 631.0	3	59.20	18.59	35.39	80.74

INTERVAL(S) (MICROSEC): 50.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 622.
 SINGLES: 2011.
 VEL AVERAGE: 27.67 FT/SEC
 843.44 CM/SEC
 ELAPSED TIME = 2 min

A X5

Table E4-35

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10260
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 0.0 INCHES
 DIST FROM NOZZLE 96.0 INCHES
 AZIMUTHAL ANGLE 0.0 DEG
 CYLINDRICAL ANGLE 0 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	7	8.46	4.02	4.62	17.20
31.6 - 39.8	7	11.21	3.23	4.62	14.80
39.8 - 50.1	4	24.65	4.14	17.57	27.93
50.1 - 63.1	13	21.01	10.09	6.03	39.34
63.1 - 79.4	33	24.52	10.00	11.42	46.52
79.4 - 100.0	47	27.46	12.63	6.20	57.19
100.0 - 125.9	75	25.36	12.22	8.33	72.33
125.9 - 158.5	129	27.04	11.63	10.18	77.14
158.5 - 199.5	122	28.06	10.10	11.42	83.24
199.5 - 251.2	93	29.72	8.96	12.45	73.66
251.2 - 316.2	60	32.76	10.72	17.57	87.05
316.2 - 398.1	35	34.70	8.54	19.67	74.29
398.1 - 501.2	16	34.56	4.09	26.96	40.43
501.2 - 631.0	7	45.06	4.92	38.37	54.16
631.0 - 794.3	1	31.08	0.00	31.08	31.08

INTERVAL(S) (MICROSEC): 50.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 649.
 SINGLES: 1970.
 VEL AVERAGE: 28.15 FT/SEC
 857.89 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-36

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10264
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 30.0 INCHES
 DIST FROM NOZZLE 100.6 INCHES
 AZIMUTHAL ANGLE 17.4 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	14	12.62	7.25	3.10	25.24
31.6 - 39.8	14	17.79	9.07	2.31	30.84
39.8 - 50.1	19	21.70	9.81	2.31	34.50
50.1 - 63.1	28	22.36	8.99	8.83	40.14
63.1 - 79.4	67	26.22	10.69	5.27	53.84
79.4 - 100.0	102	27.13	12.72	6.29	72.12
100.0 - 125.9	125	29.47	14.48	10.54	86.84
125.9 - 158.5	147	29.48	12.92	11.37	80.10
158.5 - 199.5	140	30.01	12.14	11.56	83.73
199.5 - 251.2	114	31.97	8.31	13.48	79.11
251.2 - 316.2	67	34.86	10.31	16.67	64.89
316.2 - 398.1	42	35.35	8.77	23.78	76.65
398.1 - 501.2	14	38.12	6.08	26.90	47.73
501.2 - 631.0	3	39.04	5.39	32.31	45.48

INTERVAL(S) (MICROSEC): 50.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 896.
 SINGLES: 2857.
 VEL AVERAGE: 29.38 FT/SEC
 895.42 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-37

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
TEST NUMBER 10265
PRESSURE 79.0 PSI
CENTERLINE COORD 96.0 INCHES
RADIAL COORD 54.0 INCHES
DIST FROM NOZZLE 110.1 INCHES
AZIMUTHAL ANGLE 29.4 DEG
CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	15	2.46	1.43	1.16	5.89
31.6 - 39.8	10	3.49	2.04	1.55	8.83
39.8 - 50.1	5	11.10	3.97	6.62	16.18
50.1 - 63.1	7	10.17	5.23	4.13	20.32
63.1 - 79.4	15	12.78	6.39	5.40	25.01
79.4 - 100.0	22	14.41	5.12	8.35	28.21
100.0 - 125.9	37	12.67	6.81	3.94	40.83
125.9 - 158.5	51	15.09	7.86	4.17	44.98
158.5 - 199.5	47	16.70	6.46	6.39	35.87
199.5 - 251.2	40	17.77	6.09	8.80	43.13
251.2 - 316.2	34	19.04	4.55	11.16	28.08
316.2 - 398.1	25	23.07	4.63	16.03	32.13
398.1 - 501.2	10	25.45	2.81	20.73	30.26
501.2 - 631.0	4	27.62	5.00	20.39	34.43

INTERVAL(S) (MICROSEC): 100.0
RATIO: 15.75 MICRONS/PIXEL
VELOCITY FRAMES: 200
PAIRS: 322.
SINGLES: 784.
VEL AVERAGE: 15.62 FT/SEC
476.16 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-38

BETE DROPLET ANALYSIS SYSTEM

SINGLE TEST REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89
 TEST NUMBER 10266
 PRESSURE 79.0 PSI
 CENTERLINE COORD 96.0 INCHES
 RADIAL COORD 78.0 INCHES
 DIST FROM NOZZLE 123.7 INCHES
 AZIMUTHAL ANGLE 39.1 DEG
 CYLINDRICAL ANGLE 90 DEG

8 NOZZLES 1 FT APART.
 TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	9	1.28	0.70	0.58	2.38
31.6 - 39.8	1	3.82	0.00	3.82	3.82
39.8 - 50.1	0				
50.1 - 63.1	2	3.71	0.24	3.47	3.95
63.1 - 79.4	3	5.81	1.94	4.14	8.52
79.4 - 100.0	6	4.74	2.22	2.70	9.23
100.0 - 125.9	3	4.03	1.51	2.13	5.83
125.9 - 158.5	9	6.66	2.67	2.33	10.98
158.5 - 199.5	8	6.89	2.65	4.33	12.04
199.5 - 251.2	3	6.86	2.25	4.72	9.98
251.2 - 316.2	15	10.86	2.87	7.35	16.68
316.2 - 398.1	10	11.09	2.10	8.27	15.56
398.1 - 501.2	13	12.52	2.86	7.49	16.59
501.2 - 631.0	6	14.95	2.90	10.35	18.39
631.0 - 794.3	3	18.55	1.18	17.13	20.02

INTERVAL(S) (MICROSEC): 200.0
 RATIO: 15.75 MICRONS/PIXEL
 VELOCITY FRAMES: 200
 PAIRS: 91.
 SINGLES: 258.
 VEL AVERAGE: 8.77 FT/SEC
 267.41 CM/SEC

ELAPSED TIME = 2 min

A X5

Table E4-39

BETE DROPLET ANALYSIS SYSTEM

COMPOSITE REPORT

NOZZLE: (8) TF20FCN

TEST DATE 2/24/89

TESTS INCLUDED: 10260 10261 10262 10263 10264 10265 10266

PRESSURE 79.0 PSI

CENTERLINE COORD 96.0 INCHES

RADIAL COORD 0.00 - 78.00 INCHES

AZIMUTHAL ANGLE 0.0 - 39.1 DEG

CYLINDRICAL ANGLE 0 - 270 DEG

8 NOZZLES 1 FT APART.

TESTS FROM CL. OF ARRAY.

VELOCITY RESULTS

BIN	PAIRS	AVE VEL (FT/SEC)	STD DEV (FT/SEC)	MIN (FT/SEC)	MAX (FT/SEC)
25.1 - 31.6	87	5.06	4.71	0.52	19.88
31.6 - 39.8	55	10.97	8.47	1.24	27.99
39.8 - 50.1	43	18.00	8.46	2.31	33.14
50.1 - 63.1	79	20.18	9.30	3.47	40.14
63.1 - 79.4	166	23.32	10.25	4.14	51.03
79.4 - 100.0	236	23.83	12.58	2.70	60.50
100.0 - 125.9	355	24.54	13.51	2.13	86.84
125.9 - 158.5	440	25.72	12.71	2.33	81.30
158.5 - 199.5	435	26.58	12.10	1.93	83.73
199.5 - 251.2	351	27.63	11.10	4.72	79.11
251.2 - 316.2	238	28.67	12.73	5.39	87.05
316.2 - 398.1	144	28.85	12.63	6.41	85.82
398.1 - 501.2	80	28.12	12.06	6.77	47.73
501.2 - 631.0	23	35.23	16.92	10.35	80.74
631.0 - 794.3	4	21.68	5.52	17.13	31.08

INTERVAL(S) (MICROSEC): 50.0 150.0 300.0 50.0 100.0 200.0

RATIO: 15.75 MICRONS/PIXEL

VELOCITY FRAMES: 1400

PAIRS: 2736.

SINGLES: 8616.

VEL AVERAGE: 24.97 FT/SEC
761.10 CM/SEC

ELAPSED TIME = 15 min

A X5

C121

5. Air Entrainment

Entrainment of air into the spray curtain was measured for two sets of nozzles, first for 8 TF16FCN then for 8 TF20FCN nozzles.

Rather than measuring the air flowing into the curtain, the air flowing out of the curtain as a bottom jet in the direction +y was measured. A grid of measuring points was set up with the following coordinates:

Radial Coordinates $x = -48, 0, +48$ in.

Horizontal Position (towards observer) = +96, +144 in.

Elevation (Centerline Coordinates) $z = +3, +6, +12, +18,$
+24, +30, +36 in.

The velocity readings on the hand-held turbo-anemometer showed little effect from entrained water droplets. The velocities were measured in m/s and are listed in Table E5-1. Header elevations of 128 or 224 in. above the floor were employed.

Table E5- 1

Velocity of Entrained Air, M/S

Nozzles 8...FCN	Pressure Psig	Radical Coord. x in.	Horizontal Pos. y in.	Centerline Coord. z, in.							Header Elevation in.
				3	6	12	18	24	30	36	
TF16	56	-48	96	5.3	5.0	3.4	2.0	1.5	0.5	0.0	128
TF16	56	0	96	6.1	5.5	3.5	2.6	2.0	1.5	0.2	128
TF16	56	+48	96	5.3	4.5	2.8	0.8	0.0	0.0	0.0	128
TF16	56	-48	144	4.5	4.0	3.0	2.6	1.2	0.0	0.0	128
TF16	56	0	144	5.3	4.6	3.6	2.7	2.0	0.5	0.1	128
TF16	56	+48	144	4.4	3.6	2.0	1.6	0.5	0.0	0.0	128
TF16	56	-48	96	5.2	4.0	2.0	1.5	1.2	0.3	0.0	224
TF16	56	0	96	5.7	4.7	2.5	1.1	1.4	0.3	0.2	224
TF16	56	+48	96	5.3	3.8	2.3	1.0	0.5	0.2	0.0	224
TF16	56	-48	144	5.0	4.0	2.0	1.4	1.1	0.2	0.0	224
TF16	56	0	144	5.3	4.4	2.7	1.0	0.7	0.2	0.2	224
TF16	56	+48	144	4.8	4.0	1.9	1.3	0.4	0.0	0.0	224
TF20	79	-48	96	7.1	6.2	5.7	2.8	2.0	0.2	0.0	128
TF20	79	0	96	8.0	7.5	5.2	3.2	1.8	0.2	0.2	128
TF20	79	+48	96	8.0	5.1	5.1	1.2	0.6	0.1	0.0	128
TF20	79	-48	144	6.9	7.2	5.0	3.7	2.4	0.2	0.0	128
TF20	79	0	144	5.8	6.3	4.5	3.6	1.3	0.1	0.2	128
TF20	79	+48	144	8.7	7.3	1.8	1.2	0.4	0.1	0.0	128
TF20	76	-48	96	7.8	6.4	4.5	3.5	3.2	1.4	1.0	224
TF20	76	0	96	7.6	6.4	4.2	2.5	1.4	0.7	0.0	224
TF20	76	+48	96	8.7	6.3	4.5	3.2	1.0	0.2	0.0	224
TF20	76	-48	144	6.5	6.4	4.4	3.4	3.4	1.4	0.8	224
TF20	76	0	144	6.5	6.4	3.5	2.4	1.4	0.4	0.0	224
TF20	76	+48	144	6.0	6.2	4.2	3.0	1.2	0.2	0.0	224
Note: Velocities for z above 24 in. fluctuated increasingly with increasing elevation above floor level and reached ± 1.5 m/s at z = 36 in.											