

THE CERYX QUADCAT CONVERTER FOR EMISSIONS REDUCTION FROM RETROFIT APPLICATIONS

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Ceryx Incorporated has developed an emissions control system for mobile and stationary retrofit applications. The system employs a lean NO_x catalyst coupled with a catalyzed diesel particulate filter (DPF) integrated into a recuperative heat exchanger. The system also includes an active system for injecting hydrocarbons into the exhaust pipe upstream of the recuperator catalyst housing. The injection of fuel serves two purposes, first as an energy source for heating the DPF via exothermic reaction over the catalyzed filter, and second as a reducing agent for NO_x reduction using the lean NO_x catalyst.

The advantages of active fuel injection is an improvement in NO_x reduction, and a broader application of the system for engines that

may not regenerate without the added heat from the combustion of the injected fuel.

The QuadCat emissions control system was tested on a 1986 school bus powered by an International 7.6L DT466 engine. Several transient test cycles were performed on a heavy-duty chassis dynamometer. During the tests real time emissions of HC, CO, CO₂, and NO_x were measured. The results showed HC, CO and PM emissions reduction in excess of 90% from the baseline, and the NO_x emissions were reduced approximately 29%. This paper discusses the configuration of the QuadCAT and presents results from the chassis dynamometer testing.