

**State of California  
AIR RESOURCES BOARD**

**EXECUTIVE ORDER DE-05-010-01**

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Section 39515 and 39616 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the Vehicle Code, and Verification under Sections 2700 through 2710 of Title 13 of the California Code of Regulations

Cleaire Advanced Emission Controls, LLC (Cleaire)  
Horizon™ Electric Particulate Filter (Horizon)

ARB has reviewed Cleaire's request for verification of the Horizon. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that the Horizon reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reductions) (Title 13 California Code of Regulations (CCR) Sections 2702 (f) and (g) and Section 2708). Accordingly, the Executive Officer determines that the system merits verification and subject to the terms and conditions specified below, classifies the prototype design of the Horizon as a Level 3 system for use with model years 1994 to 2005 on-road engines. Attachment 1 contains the specific engine families for which the Horizon is verified.

The aforementioned verification is subject to the following terms and conditions:

- The engines are originally manufactured from model years 1994 through 2005.
- The engine must not have a pre-existing diesel particulate filter.
- The engine must be certified in California for on-road applications.
- The engine must be certified at a PM emission level of at most 0.1 grams per brake horsepower-hour (g/bhp-hr) and greater than 0.01 g/bhp-hr.
- The engine must be four-stroke.
- The engine must be turbocharged.
- The engine can be mechanically or electronically injected.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, should not be mixed with the fuel.
- The engine must be operated on diesel fuel with a sulfur content of no more than 300 parts per million by weight.
- The product must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the CCR, unless explicitly verified for use with the fuel additive(s).

- The product must not be used with any other systems or engine modifications without ARB and manufacturer's approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the Horizon, manufactured by Cleaire Advanced Emission Controls, LLC, 14775 Wicks Boulevard, San Leandro, California 94577-6779, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the Horizon is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on heavy-duty on-road vehicles.

This exemption is only valid provided the engines meet the aforementioned conditions.

The Horizon consists of an uncatalyzed silicon carbide wall flow diesel particulate filter, electric heating element, air pump, and Cleaire's electronic control system (MLC<sup>®</sup>). All necessary hardware and controls are installed on the vehicle, requiring only off-board electric power to supply energy for the heater. The major components of the Horizon are identified in Attachment 2.

This Executive Order is valid provided that installation instructions for Horizon do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the Horizon, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this Executive Order.

No changes are permitted to the device. The ARB must be notified in writing of any changes to any part of the Horizon. Any changes to the device must be evaluated and approved by ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the Horizon using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from ARB.

This Executive Order shall not apply to any Horizon advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

The ARB estimates that the Horizon has no significant effect on the average fuel economy.

As specified in the Diesel Emission Control Strategy Verification Procedure (CCR, Title 13, Section 2706 (g)), the ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

**CA/CLE/2005/PM3/N00/ON/DPF01.**

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Cleaire is responsible for honoring the required warranty (Section 2707) and conducting in-use compliance testing (Section 2709).

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of CCR, Title 13, Section 2222, et seq and CCR, Title 13, Sections 2700 through 2710.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations.

This Executive Order does not release Cleaire from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

Executed at El Monte, California, this 16th day of May 2006.

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Robert H. Cross, Chief  
Mobile Source Control Division

Attachment 1: Engine Families for the Horizon  
Attachment 2: Horizon Parts List