

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER DE-05-010-02

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 staff 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 Horizon as a Level 3 system for on-road vehicles that use heavy-duty diesel engines of all model years up through and including 2006, except those belonging to engine families listed in Attachment 1.

The Horizon is compliant with the 2009 nitrogen dioxide emissions limit and as such is designated as a "Plus" system per section 2702(f).

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

- The engine must be model year 2006 or older, and not belong to any of the engine families listed in Attachment 1.
- The engine must be used by an on-road motor vehicle with a manufacturer's Gross Vehicle Weight Rating of over 14,000 pounds.
- The engine may have a pre-existing diesel oxidation catalyst from the original equipment manufacturer if the engine's model year is between 1994 and 2005, inclusive.
- The engine must not have a pre-existing diesel oxidation catalyst from the original equipment manufacturer if the engine's model year is 2006.
- The engine must not have a pre-existing diesel oxidation catalyst from the original equipment manufacturer if the engine's model year is 1993 or older.
- The engine must not have a pre-existing diesel particulate filter from the original equipment manufacturer.

- The engine must have a displacement no greater than 15 liters.
- The engine must be four-stroke.
- 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 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.

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.

The Horizon consists of a non-catalyzed silicon carbide wall-flow diesel particulate filter, electric heating element, air pump, and an electronic control system. All necessary hardware and controls are installed on the vehicle, requiring only off-board electric power to supply energy to the heater. The major components of the Horizon are identified in Attachment 2.

No changes are permitted to the device. 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.

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.

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.

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.

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

As specified in the Diesel Emission Control Strategy Verification Procedure (CCR, Title 13, section 2706 (g)), 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).

This Executive Order is valid provided that the diesel fuel used in conjunction with the device complies with Title 13, CCR, sections 2281 and 2282, and if biodiesel is used, the biodiesel blend shall be 20 percent or less subject to the following conditions:

- The biodiesel portion of the blend complies with the American Society for Testing and Materials (ASTM) specification D6751 applicable for 15 parts per million sulfur content;
- The diesel fuel portion of the blend complies with Title 13, CCR, sections 2281 and 2282; and
- The use of biodiesel applies to devices verified to reduce only diesel particulate matter.
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Other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel are excluded from this Executive Order.

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 14th day of February 2007.

/s/

Robert H. Cross, Chief
Mobile Source Control Division

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