

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER DE-09-005

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)
Vista™ Diesel Particulate Filter System (Vista)

ARB has reviewed Cleaire's request for verification of Vista. 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 Vista 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 section 2708) and is compliant with the 2009 nitrogen dioxide (NO₂) emissions limit. Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies Vista as a Level 3 plus system for heavy-duty on-road vehicles using engines from the engine families listed in Attachment 1.

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

- The engine must be originally manufactured from model year 1993 through 2006 and have an engine family name 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 must be certified for on-road applications.
- The engine must have a maximum displacement of 13 liters.
- Only one filter may be installed per engine.
- The engine must be in its original certified configuration.
- The engine must have a PM certification 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 not be certified as having exhaust gas recirculation.
- The engine must not have a pre-existing oxidation catalyst from the original equipment manufacturer.
- The engine must not have a pre-existing diesel particulate filter from the original equipment manufacturer.
- The engine must be four-stroke.
- The engine can be turbocharged or naturally aspirated.

- The engine can be mechanically or electronically controlled.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, must not be mixed with the fuel.
- The engine must be operated on fuel that has a sulfur content of no more than 15 parts per million (ppm) by weight.
- Vista must not be operated with fuel additives, as defined in Section 2701 of Title 13, of CCR, unless explicitly verified for use with fuel additive(s).
- Vista must not be used with any other systems or engine modifications without ARB and manufacturer approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of Vista, 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, Vista is exempt from the prohibitions in section 27156 of the Vehicle Code for installation on heavy-duty on-road vehicles using engines from the engine families listed in Attachment 1.

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.

Vista consists of a catalyzed exhaust flow conditioner, a silicon carbide wall-flow diesel particulate filter, a diesel fueled burner assembly, an electronic controller, and control sensors. The diesel fueled burner assembly includes a glow plug, a fuel metering pump, a fuel solenoid, and an air blower. The sensors include an engine speed sensor, two exhaust temperature sensors, and an engine backpressure sensor. The major components of Vista are identified in Attachment 2. Schematics of the approved product and engine labels are shown in Attachment 3.

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

Prior to sale of a Vista system, Cleaire must provide each prospective owner/purchaser of Vista with a written estimate of the number of hours of vehicle operation that will typically elapse before regeneration is required. Cleaire must also provide, in writing, the length of time of a typical regeneration event.

Changes made to the design or operating conditions of Vista, 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 Vista do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Marketing of Vista 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 Vista advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

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/2009/PM3+/N00/ON/DPF01.

As stated in the Procedure, Cleaire is responsible for recordkeeping requirements (section 2702), 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 specification D6751 applicable for 15 ppm 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 PM.

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, and effective this 6th day of April 2009.

A handwritten signature in black ink, appearing to be 'R. Cross', written over a long horizontal line that extends across the page.

Robert H. Cross, Chief
Mobile Source Control Division

Attachment 1: ARB Approved Engine Families for Cleaire Vista

Attachment 2: Parts List for the Verified Cleaire Vista

Attachment 3: Labels for the Verified Cleaire Vista