

OVATIONE910FC
OVATIONE910FCWHT

Color mixing or White-light LED (Light Emitting Diode) ERS-style product

GENERAL

- A. The product shall be an Ovation E-910FC as manufactured by Chauvet & Sons, LLC or approved equal.
 - 1. The product shall be a color-mixing high-intensity LED illuminator utilizing red, green, blue, amber, and lime (RGBAL) LED's and DMX control of intensity and color.
 - 2. The products shall conform to CSA C22.2 No. 166 and UL 1573 stage and studio use as well as UL 8750 LED standards, tested via MET to conform to the aforementioned UL specifications, product shall hold MET and CE markings.
 - 3. The product shall comply with the USITT DMX-512A standard.
 - 4. The product shall comply with the current PLSA ANSI E1.20-2010 remote device management (RDM) standard.
 - 5. All LED products shall be provided by a single manufacturer to ensure color consistency.

PHYSICAL

- A. The product shall be constructed of rugged, die cast aluminum, free of defects or imperfections.
- B. The following shall be provided:
 - 1. Lenses attached with silicone shock mounts.
 - 2. Shutter assembly shall allow for +/-25° rotation in either direction from the center position. Barrel rotation shall be secured by two thumb screws for tool free operation.
 - 3. 21-Gauge spring steel shutters
 - 4. Lens tubes shall be interchangeable for various beam/field angles utilizing polycarbonate guides for ease of focus. Lenses shall be secured with two thumb screws for tool free operation.
 - 5. Sturdy integral die cast gel frame holders with two accessory slots, and a top-mounted, quick release gel frame retainer.
 - 6. Rugged aluminum yoke with two mounting positions allowing 300°+ rotation of the product within the yoke.

OVATIONE910FC
OVATIONE910FCWHT

7. Product shall have double clutch yoke lock on each side of the product with ratcheting handles.
 8. Accessories slot with thumb screws for tool free access for optional accessories.
 9. Product shall contain a safety mounting point as an integral part of the casing.
- C. The housing shall have a rugged black powder coat finish.
1. White powder coat finish shall be available as a standard color option.
- D. Power supply, cooling and electronics shall be integral to each product.
- E. The product shall ship with:
1. Theatrical-style hanging yoke as standard
 2. 5' cable with Neutrik powerCON™ to Edison connector as standard

OPTICAL

- A. The product shall provide, but not be limited to:
1. Low gate temperature.
 2. Sharp imaging through a three-plane shutter design.
- B. The product shall have the following lens options available:
1. 14, 19, 26, 36, and 50 degree HD lenses with fixed field angles as standard options.
 2. 15-30 and 25-50 degree HD lenses with variable field angles as standard options.
- C. Product optics shall provide:
1. Sharp shutter cuts without halation.
 2. Shutter warping and burnout in normal use shall be unacceptable.
 3. Adjustable hard and soft beam edges.
 4. High Definition lenses that provide high definition imaging shall be standard. Approved alternate products must provide lensing with comparable definition.

OVATIONE910FC
OVATIONE910FCWHT

ENVIRONMENTAL AND AGENCY COMPLIANCE

- A. The product shall conform to UL 1573, CSA C22.2 No. 166, and UL 8750 LED standards, tested via MET to conform to the aforementioned UL specifications, product shall hold MET and CE markings.
- B. The product shall be rated for IP-20 dry location use.

THERMAL

- A. Product heat management shall be achieved through active cooling via a low noise fan. Fan db rating shall not exceed 38.2 db at a distance of 1 meter.
 - 1. Products exceeding 38.2 db @ 1 m shall not be allowed.
 - 2. Fan mode shall be selectable via on board menu or via RDM control.
- B. The product shall utilize advanced thermal management systems to maintain LED life to an average of 70% intensity after 50,000 hours of use.
 - 1. Thermal management shall include temperature sensors within the housing to include:
 - a. LED array circuit board temperatures.
 - b. Product temperature shall be accessible with on board display or via RDM.
- C. The product shall operate in an ambient temperature range of -20°C (-4°F) minimum, to 45° C (113°F) maximum ambient temperature.

ELECTRICAL

- A. The product shall be equipped with an auto-ranging 100 V to 240 V 50/60 Hz internal power supply.
- B. The product shall support power in and thru operation.
 - 1. Power in shall be via Neutrik powerCON™ input connector.
 - 2. Power through shall be via Neutrik powerCON™ output connector.
 - 3. Product power wiring and accessory power cables shall be rated to support linking of multiple products up to the capacity of a 15 A breaker.
- C. The product requires power from a non-dim source.
- D. Products shall have thermal output compensation to prevent thermal shift of color or intensity.
- E. Product power input shall have current limiting fuse protection.
- F. Power supply shall have power factor correction.

OVATIONE910FC
OVATIONE910FCWHT

LED EMITTERS

- A. The product shall contain a red, green, blue, amber and lime LED color system to provide color characteristics as described in the Color section below.
- B. All LEDs used in the product shall be high brightness and proven quality from established and reputable LED manufacturers.
 - 1. Product shall utilize Luxeon® Rebel™ ES Color and XP-E2 LED emitters.
- C. Manufacturer of LED emitters shall utilize an advanced production LED binning process to maintain color consistency.
- D. LED emitters shall be rated for nominal 50,000-hour LED life at 70% intensity.
- E. All LED products (100% of each lot) shall undergo a minimum three-hour burn-in test during manufacturing.
- F. LED system shall comply with all relevant patents.

COLOR

- A. The product shall utilize a minimum of 91 LED emitters.
 - 1. These shall be composed of 18 red, 18 green, 19 blue, 18 amber and 18 lime LEDs (RGBAL).

DIMMING

- A. The LED system shall use 16-bit nonlinear scaling techniques for high-resolution dimming.
- B. The product shall have a selectable dimming curve to simulate incandescent dimming curves.
- C. Dimming curve shall be optimized for smooth dimming over longer timed fades.
- D. The LED system shall be digitally driven using high-speed pulse width modulation (PWM).
- E. LED control shall be compatible with broadcast equipment in the following ways:
 - 1. PWM LED levels shall be imperceptible to video cameras and related equipment.
 - 2. PWM control shall be capable of being set via on board controls or via RDM to 600 Hz, 1,200 Hz, 2,000 Hz, 4,000 Hz, 6,000 Hz, or 25,000 Hz.

OVATIONE910FC
OVATIONE910FCWHT

CONTROL AND USER INTERFACE

- A. The product shall be USITT DMX 512A-compatible via in and through 5-pin XLR connectors and 3-pin XLR connectors.
- B. The product shall be compatible with the ANSI RDM E1.20 standard.
 - 1. All product functions shall be accessible via RDM protocol for modification from suitably equipped control console or RDM controller.
 - 2. Temperature sensor within the luminaire shall be viewable in real time via RDM and on the control panel of the product.
 - 3. Products not offering RDM compatibility, feature set access or temperature monitoring via RDM shall not be allowed.
- C. The product shall be equipped with an OLED display with 5 lines of text.
- D. The product shall be equipped with a four-button user-interface.
- E. A variable-rate strobe channel shall be provided.
- F. The product shall offer stand-alone functionality, eliminating the need for a console.
 - 1. Product shall ship with 31 preset colors accessible as a stand-alone feature.
 - 2. Product shall ship with 5 auto sequences with speed control accessible as a stand-alone feature.
 - 3. Product can be linked together with standard DMX cables and controlled from designated master product.
 - a. Up to 32 products may be linked.
 - 4. Product shall offer one-button access to intensity control, to eliminate the need for a lighting console during hang/focus. Exiting this mode shall restore the product to standard DMX control.
 - 5. Products without stand-alone operation features described above shall not be acceptable.

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