



# Tender Specifications



## **MOSAICOXL**

540W IP66 zoomable LED image projector with CMY  
and framing shutter

## 1. General

1. The luminaire shall be an IP rated LED Exterior projector for outdoor installs with motorized framing shutters based on subtractive color generation (CMY+CTO+1xcolor wheel), with DMX control of intensity, colours, pattern projection, framing shutters and beam angle.
2. The luminaire shall be CE compliant.
3. The luminaire shall comply with the USITT DMX-512 A and ANSI RDM E 1.20 protocol standards.
4. The luminaire shall be equipped of a white LED source and linear color correction filter capable of delivering a variable white output from 6'000 K to 2'800 K through its linear CTO system and allow precise control of intensity.
5. The luminaire shall feature an LED source with a rated power of 540 W.
6. The luminaire shall feature an LED source made with a White CTC 6000 K LED array.
7. The luminaire shall not infringe any Intellectual Property unless licenced by the owner.

## 2. Physical

1. The luminaire shall be constructed of rugged die cast aluminium, free of burrs and pits.
2. The luminaire dimensions shall be:
  - a) 565 mm (22.3") from base of the enclosure to the tip of the lens baffling.
  - b) 609 mm (24") across the exterior dimensions of the yoke.
  - c) Head length 565 mm (22.3").
  - d) The luminaire shall weigh 37 kg (81.5lbs).
  - e) The front lens diameter shall be 119 mm (4.68").
3. The luminaire shall be able to be either truss-mounted or stand on a surface. Fixture shall be suitably designed for operation over or under mounted on a truss perpendicular to the ground.
4. The following shall be provided:
  - a) The luminaire must include seven (7) interchangeable rotating gobos. Luminaires that have non-interchangeable gobo patterns shall not be deemed acceptable.
  - b) Interchangeable rotanting gobos shall have an outside diamter of 26.9 mm, and an image diameter of 20.5 mm, and accept 0.5 mm stainless steel or 1.1 mm glass gobo.

- c) Rotating gobo system must be able to index to any point on the 360° positioning of the gobo.
  - d) Rugged steel yoke with two mounting positions allowing 300+ rotations of the fixture within the yoke.
  - e) Positive locking, hand operated yoke clutch.
  - f) Inspectable Slot-door on the chassis for easy access to Gobos and Animation wheel replacement.
  - g) A twenty (20) leaf iris which reduces the projection area by 95%.
  - h) A dual linear Frost system with both 1° soft-edge frost which softens the edges of the projection, and a 5° frost filter which delivers a wash look.
  - i) Automated linear zoom system from 6.6° to 50° and focus lens system.
  - j) Rotating fixed pattern wheel shall allow for animation in two directions and shall contain a unique and continuous breakup patterns. Fixtures with animation wheels that are made up of a single pattern shall not be deemed acceptable.
  - k) The pattern wheel should be fixed to the internal mechanical structure through a quick release magnetic system, which allow a quick replacement through the upper slot-door on the outer cover.
  - l) A Colour wheel containing 6 (six) colour filters.
  - m) A subtractive linear CMY (cyan, magenta, Yellow) plus a linear CTO filter (2'800K - 6'000K) system, both with a dual flag surface that applies evenly across the beam and allows for variation in insertion time without reflections or uneven distribution of diffusion.
  - n) An automated motorized shutter system composed by 4 individually controllable shutter blades, working on 4 layers and each being able to cut through the entire projection, each shall allow a +/- 30° rotation, and the entire system shall be able to perform a self rotation of +/- 45°.
  - o) A circular 4 facet prism with rotating systems must be able to index to any point on the 360 positioning of the prism.
5. Power Supply, cooling, and driver electronics shall be integral to each luminaire.
6. Control/UI module shall have the option for battery power to allow fixture settings when the luminaire is not connected to the mains.

### 3. LED Emitters

1. The luminaire shall feature an LED array source comprising of 54 LED emitters manufactured by OSRAM, with a total Rated power of 540 Watt, and total Driven power of 437 Watt.

2. The luminaire shall feature an LED source comprising of 54 pcs White 6000 K LED.
3. The luminaire shall feature an LED source consisting only of LED emitters from a know production batch and bin.
4. The luminaires shall feature only LED emitters rated for nominal 30'000-hours LED life to L70 with estimated colour shift over lifetime less than 200 K.
5. The luminaire shall feature a minimum of three hours burn-In test during its manufacturing process.
6. The luminaire shall feature a nominal LED frequency of 2'000 Hz.

#### **4. Photometric documentation**

1. The luminaire shall be supplied with a full and detailed photometric report measured by a calibrated two axis photogoniometer in a constant temperature environment and with the luminaire in a stabilised condition with not more than 0.5% variation in output over a 15 minute period.
2. The photometric report supplied with the luminaire shall detail CRI, CQS, TM-30 and spectral distribution at full output.
3. The photometric report supplied with the luminaire shall detail the spectral distribution of each constituent LED colour of LED source.
4. The photometric report supplied with the luminaire shall detail light level measured in lux and foot candles and beam diameter measured in meters and feet at 1 m, 2 m, 3 m 4 m, 5 m, 6 m, 7.5 m, 10 m, 15 m, 20 m, 25 m 30 m, 40 m distance with the luminaire at the following beam angle: minimum beam angle, medium beam angle, maximum beam angle.
5. The photometric report supplied with the fixture shall include ISO LUX and candela diagrams, showing light distribution in both X and Y planes measured with the luminaire mounted at height of 10 meters.

#### **5. Photometric performance and Opticals**

1. The luminaire shall meet the following minimum photometric performance requirements which should be supported by the photometric documentation:
  - a) The luminaire shall have a colour temperature of 6'000 K (+/- 125 K) with LEDs at full on.

- b) The luminaire shall have a colour temperature within 100 K of the target colour temperature when set to a preset of 3'200 K using the linear CTO system.
  - c) The luminaire shall have an output in excess of 8'800 lm when set to 6'000 K at 6° beam angle.
  - d) The luminaire shall have an output in excess of 14'200 lm when set to 6'000 K at 50° beam angle.
2. The luminaire shall provide, but not be limited to:
- a) Low gate and beam temperatures.
  - b) Sharp imaging on all gobo planes, framing shutters planes and iris planes.
  - c) The luminaire shall provide, but not be limited to:
    - c.1) 8 through 50 degree field angles.
    - c.2) High-quality pattern imaging.

## 6. Electrical

- 1. The luminaire shall feature an internal auto sensing power supply with an input range from 100 V to 240 V AC 50/60 Hz protect by on board fuse.
- 2. The luminaire shall feature a nominal power consumption of 600 W.
- 3. The luminaire shall feature a moulded IP rated main input connector.
- 4. The luminaire shall feature a moulded IP rated main through connector.
- 5. The luminaire shall feature a moulded IP rated for DMX input and DMX through.
- 6. The luminaire shall feature a built in Wireless DMX receiver manufactured by Wireless Solution Sweden
- 7. The luminaire shall feature an on board OLED graphic display, mounted in a recessed part of the cover which can be sealed through screw and gasket to avoid water ingress.
- 8. The luminaire shall be equipped with a protective vent to reduce condensation in the sealed enclosure.
- 9. The luminaire shall be compatible with the USITT DMX-512A RDM protocol.
- 10. The luminaire shall support firmware upgrades using a dedicated UP-LOADER device using a 5 pin XLR connector.
- 11. The luminaire shall meet all requirements of the LVD (Low Voltage Directive) 2014/35EC and with the EMC (Electromagnetic Compatibility Directive) 2014/30/EU.

## 7. Environmental

1. The luminaire shall feature IP 66 rating and being suitable for outdoor installation; upon correct installation and periodic maintenances procedures.
2. The luminaire shall features a C2 minimum environment classification
3. The luminaire shall features a C5M environmental classification available on request.
4. The luminaire shall be capable of operating in ambient temperature range of -20°C (-4°F) to +45°C (113°F).
5. The luminaire shall be equipped with IP rated cooling fan.
6. Fan speed software shall permit the fixture to override DMX fan seed setting to prevent heat damage.
7. Thermal management shall include LED array circuit board temperature sensor.
8. Users shall permit monitoring of temperature sensor via legible black OLED multi-line display.
9. Fixtures that do not provide the active thermal monitoring of LED board, shall not be acceptable.

## 8. Control And User Interface

1. The luminaire shall feature a temperature sensor which shall be accessible in real time via RDM.
2. The luminaire shall be compatible with the ANSI RDM E 1.20, 1.33, 1.37-1, 1.37-2, 1.37-7.
3. Fixtures not offering RDM compatibility features access or temperature monitoring via RDM shall not be acceptable.
4. The luminaire shall be equipped with multi-line OLED display for easy to read status reports and configurations changes.
5. The luminaire shall be equipped with five buttons user interface
6. The luminaire shall offer 4 DMX control profiles.
7. The luminaire shall offer additional user definable options to including:
  - a) Display time out option.
  - b) Loss of data behaviour options.
8. The luminaire shall feature an advanced on board Stand Alone programming and playback features and below described:
  - a) User selectable playbacks of stored Shows, Chases, Scenes.

- b) Edit section to apply user changes to Shows, Chases, Scenes capable of copying existing scenes.
- c) Built in DMX recorder to record DMX input to be stored into selected Show.
- d) Time and Move Blackout settings to be assigned to existing Scenes and Chase.
- e) Snapshot of input signal looks.
- f) Clock settings and internal scheduler calendar for the playbacks, backed up by the internal battery device.

## 9. Dimming

1. The luminaire shall feature continuous smooth and linear dimming of intensity from 0% to 100%.
2. The luminaire shall feature control of intensity in 8 bit or 16 bit mode.
3. LED control shall be compatible with broadcast equipment in the following ways:
  - a) PWM control of LED levels shall be imperceptible to video cameras and related equipment.
4. The luminaire shall feature a minimum of 4 options for dimming curves, selectable from the on board menu.
5. Dimming curves shall be optimized for smooth dimming over longer time fades.
6. The LED system shall be digitally driven using high-speed pulse width PWM modulation.

## 10. Initialization

1. The luminaire shall be fitted with high resolution encoders on the internal feature such that initialization on power up or reset can be accomplished with zero or minimal movement of these axis.
2. Luminaires not offering position sensors or end stops in order to initialize shall not be acceptable.
3. The time to fully initialize the luminaire from power on or reset shall be no more than 30 seconds.

## 11. Accessories

The following accessories shall be included in fixture supplied:

1. Safety steel cable.
2. Moulded power adapter from IP female connector to Schuko 16A plug
3. Moulded signal adapter from IP female connector to XLR

The following accessories shall be available as an optional:

1. Flight case for 3pcs of the luminaires
2. Bracket for luminaire mounting on wall and poles both round or square
3. Custom glass grid gobo for projection mapping
4. Molded IP67 extension cable for power from 3mt to 20mt
5. Software uploader box, USB in to XLR output

Approved device shall be the PROLIGHTS MOSAICOXL; no alternates or equals.