

# Tender Specifications



## **ECLCTPLUS**

High quality six colours full spectrum  
ellipsoidal LED

## 1. General

1. The luminaire shall be a colour-mixing ellipsoidal LED with DMX control of intensity and colour.
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 capable of delivering a variable white output from 2'800 K to 10'000 K featuring an average CRI, in excess of 90 Ra when measured across the full color temperature range.
5. The luminaire shall be capable of delivering an extensive range of saturated and pastel colours.
6. The luminaire shall feature an LED source with a power of 264 W.
7. The luminaire shall features an LED source containing 6 different colours of LED.
8. The luminaire shall not infringe any Intellectual Property unless licenced by the owner.

## 2. Physical

1. The luminaire shall be constructed from a combinations of rugged die cast aluminium, free of burrs and pits, and high quality thermo plastic all finished in black.
2. The following shall be provided:
  - a) Lens secured with silicone shock mounts.
  - b) Shutter assembly shall allow for +/- 25 rotation.
  - c) 0.95 mm stainless steel shutters.
  - d) Interchangeable lens tubes for different field angles.
  - e) Sturdy integral die cast gel frame holders with two accessory slots, and a top mounted quick release gel frame retained.
  - f) Rugged steel yoke with two mounting positions allowing 300+ rotations of the fixture within the yoke.
  - g) Positive locking, hand operated yoke clutch.
  - h) Slot with sliding cover for motorised pattern devices or optional iris.
3. The luminaire shall feature an integral frame holder including safety locks and top latch.

4. The luminaire shall features an adjustable yoke constructed from die-cast aluminium and finished in black that allows a minimum of 300° tilt rotation and 360° pan rotation.
5. The luminaire shall features a secure locking mechanism for the tilt axis.
6. The luminaire shall have a rugged black powder coat finishing.
  - a) White powder coat finishes shall be available as color option.
  - b) Other powder coat colour options shall be available on request.
7. The luminaire shall feature integral power and electronics.
8. The luminaire shall weight no more than 7,5 Kg without lens barrel.
9. The luminaire shall feature an active cooling system.

### **3. LED Emitters**

1. The luminaire shall feature an LED source comprising an array of 96 LED emitters manufactured by Philips and branded Lumiled C-line.
2. The luminaire shall feature an LED source comprising of 20 pcs Red LED, 12 pcs Green LED, 16 pcs Blue LED, 8 pcs Royal Blue LED, 28 pcs Mint LED, 12 pcs PC Amber 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 50'000-hours LED life to L70.
5. The luminaire shall feature a minimum of three hours burn-In test during its manufacturing process.
6. The luminaire shall feature adjustable PWM frequency to include 25'000 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: 5°, 10°, 14°, 19°, 26°, 36°, 50°, 70°, 15°-30° Zoom and 25°-50° Zoom.
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**

1. The luminaire shall meet the following minimum photometric performance requirements which should be supported by the photometric documentation:
  - The luminaire shall have a colour temperature of 5000 K (+/- 125 K) with LEDs at full on.
  - The luminaire shall have a colour temperature within 100 K of the target colour temperature when set to a preset of 3'200 K or 5'600 K.
  - The luminaire shall have a CRI in excess of 93 with mounted 26° lens barrel when set to a preset of 3'200 K.
  - The luminaire shall have an output in excess of 5'500 lm with mounted 26° lens barrel when set to preset of 3'200 K.
  - The luminaire shall have a CRI in excess of 96 with mounted 26° lens barrel when set to a preset of 5'600 K.
  - The luminaire shall have an output in excess of 6'200 lm with mounted 26° lens barrel when set to preset of 5'600 K.

## **6. Calibration**

1. The luminaire shall be factory calibrated during its production process.
2. The luminaire shall permanently store calibration data on internal PCB.
3. The luminaire shall feature replacement LED source calibrated using the same method as the standard.
4. Fixtures not offering LED calibration shall not be acceptable.

## **7. 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 264 W.
3. The luminaire shall feature a Neutrik® PowerCON True1 main input connector.
4. The luminaire shall feature a Neutrik® PowerCON True1 main through connector.
5. The luminaire shall feature an Amphenol 5 pin XLR connector for DMX input and DMX through.
6. The luminaire shall feature an on board OLED graphic display.
7. The luminaire shall be compatible with the USITT DMX-512A RDM protocol.
8. The luminaire shall support firmware upgrades using a dedicated UP-LOADER device using a 5 pin XLR connector.
9. The luminaire shall meet all requirements of the LVD (Low Voltage Directive) 2014/35EC and with the EMC (Electromagnetic Compatibility Directive) 2014/30/EU.

## **8. Optical**

1. The light beam should have a 2-to-1 centre-to-edge drop-off ratio.
2. The luminaire shall provide, but not be limited to:
  - a) Low gate and beam temperature.
  - b) Sharp imaging through a three plane shutter design.
3. The units shall provide, but not be limited to:
  - a) 5, 10, 14, 19, 26, 36, 50 and 70 degree fixed field angles.
  - b) 15 - 30 and 25 - 50 degrees Zoom angles.
  - c) High quality pattern imaging.
  - d) Sharp shutter cuts without elation.
  - e) Shutter warping and burnout in normal use shall be unacceptable.
  - f) Adjustable hard and soft beam edges.
4. 19, 26, 36 and 50 degree units shall perform precise and high contrast imaging.

## **9. Environmental**

1. The luminaire shall feature IP 20 rating.
2. The luminaire shall be capable of operating in ambient temperature range of -20°C (-4°F) to +45°C (113°F).
3. The luminaire shall be equipped with a cooling fan.
  - a) Fan speed control via DMX channel shall be possible.
4. Fan speed software shall permit the fixture to override DMX fan speed setting to prevent heat damage.
5. Thermal management shall include LED array circuit board temperature sensor.
6. Users shall permit monitoring of temperature sensor via legible black OLED multi-line display.
7. Fixtures that do not provide the active thermal monitoring of LED board, shall not be acceptable.

## **10. 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 standard.
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 four buttons user interface.
6. The luminaire shall feature a range of control modes including control of color temperature and green/magenta adjustment.
  - a) RGB - control of all individual LED colours via a three channels profile: Red, Green, Blue.
  - b) HSI - control of all individual LED colours via a three channels profile: Hue, Saturation, Intensity.
  - c) CMY - control of all individual LED colours via a three channels profile: Cyan, Magenta, Yellow.
7. The luminaire shall offer a "HQ mode" option to set the output to a default calibrated white point of 5'000 K.

8. The luminaire shall offer the following DMX charts settings:
  - UNO, DUO, Basic, Standard, Extended, RAW Direct, RAW 16 bit, XY Colours Space Control.
9. The luminaire shall offer a tungsten emulation option to emulate both the intensity and colour shift characteristics of a tungsten source.
  - The luminaire shall offer a set of standard industry gel color preset accessible via DMX on dedicated channel.
10. The luminaire shall offer additional user definable options to including:
  - a) Display time out option.
  - b) Loss of data behaviour options.
  - c) White point setting.
  - d) Red shift option for tungsten dimming emulation.
11. The luminaire shall offer stand alone functionally including:
  - a) 10 presets of whites.
  - b) Creation of standard colour or white palette to be enabled in stand-alone.
  - c) Fixtures can be linked together with standard DMX cable and controlled from designated master fixture up to 32 units linked.
  - d) Fixtures in stand-alone state shall restore to the setting preset prior to power cycling.
12. Fixtures without stand-alone operation features described above shall not be acceptable.

## **11. 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.
  - b) PWM rates shall be adjustable by the user at the fixture if necessary to avoid any visible interference on video camera 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.

## **12. Accessories**

The following accessories shall be included in fixture supplied:

1. Safety steel cable.
2. 16 A 3G 2.5 mm Power cable with Neutrik PowerCON TRUE – Shuko.

The following accessories shall be available as an optional:

1. 8 Unit flight cases, with 4 wheels and 8 handles to house four fixture plus their accessories.
2. Gobo holder.
3. Iris diaphragm.
4. Soft edge filter.
5. Gel filter frame.
6. Smooth Filter.
7. Lens Barrel 5°, 10°, 14°, 19°, 26°, 36°, 50°, 70°, 15° - 30° and 25° - 50° zoom.
8. Up-loader Tool (UPBOX2) and it is Microsoft Software.

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