

# KESSIL PROFESSIONAL SPECIFICATION SHEET

## W500W

Full-spectrum LED (Light Emitting Diode) Product

### 1.01 GENERAL

- A. The product shall be a Kessil W500W manufactured by DiCon Fiberoptics Inc.
  - 1. Kessil, a DiCon FiberOptics Inc. brand, shall provide all LED products to ensure color consistency.
  - 2. The product shall be a high-intensity LED illuminator utilizing a Dense Matrix 3D LED Array System comprised of at least 6 different LED chip colors
- B. Each LED fixture shall be tested and optimized for photometric performance.

### 1.02 PHYSICAL

- A. The dimensions of the fixture shall be Ø 5.2" W x 6.5" H (13.2 x 16.5 cm) and weigh approximately 1.5 lbs (0.7 kg). The following shall be provided:
  - a. Kessil W500W fixture, consisting of
    - 1. W500W Head Unit
    - 2. 175W, 24V, Track Mount PSU
- B. The housing shall have a black or white finish.
- C. The housing material shall be PC (polycarbonate) + ABS (acrylonitrile-butadiene-styrene).
- D. Mounting Type shall have Track, Clamp, or Monopoint Adapter selection.
- E. Cooling and electronic control systems shall be fully integrated within the fixture housing.

### 1.03 TRACK SEGMENT

- A. The product shall be installed on a surface-mounted track - One Track
  - 1. Track input voltage shall be 120V.
  - 2. 2 circuits shall have 20 Amps max per circuit, 40 Amps max per track.
  - 3. The track shall have standard length options of 4' and 8', and can be cut and connected by track accessories.
  - 4. The track shall have mounting points size 0.47" x 0.16" (12mm x 4mm), Slot Per 1.64' (500mm).
- B. With Data (-TOX): 7 conductors (2 Data, 2 Live, 2 Neutral, 1 Ground)
  - 1. 4' Track with data - Black (9000-UL4/B-ST2-120) / White (9000-UL4/W-ST2-120)

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2. 8' Track with data - Black (9000-UL8/B-ST2-120) / White (9000-UL8/W-ST2-120)

- C. The track shall have a black or white finish
- D. The material shall be Aluminum / PVC (polyvinyl chloride) / PC (polycarbonate) / Copper conductors.
- E. The track max load is 50kg/110 lbs (per 1.5' of track).

**1.04 ENVIRONMENTAL AND AGENCY COMPLIANCE**

- A. The product shall comply with UL 1574 (Track Lighting Systems) and CSA C22.2 standards.
- B. Compliance shall be verified through ETL testing and certification.
- C. The product shall bear both ETLus and cETL markings.
- D. The product shall also comply with FCC 47 CFR Part 15 Subpart B requirements, tested by ANSI C63.4.
- E. The fixture shall comply with RoHS (Restriction of Hazardous Substances) and TAA (Trade Agreements Act) regulations.
- F. The product shall be rated for IP-25 and able to sustain operation at full intensity while actively being sprayed by water from all directions.

**1.05 THERMAL**

- A. Product heat management shall be achieved through forced cooling.
- B. The cooling fans shall be rated for a minimum operational lifespan of 50,000 hours.
- C. The product shall utilize advanced thermal management systems to maintain LED life to an average of 70% intensity after 50,000 hours of use.
- D. The product shall operate in an ambient temperature range of 32°F (0° C) minimum to 104°F (40° C) maximum.

**1.06 ELECTRICAL**

- A. The product shall have an auto-ranging 100 V to 240 V 50/60 Hz power supply unit.
- B. The product shall have a maximum draw of 175W.
- C. DC input Voltage shall be 14- 30V.
- D. The product requires power from a non-dimming source.
- E. Products shall have dynamic thermal monitoring at multiple locations in the LED array, control board, and other electronics to prevent thermal shift of color or intensity.
- F. Product power input shall have current-limiting fuse protection.
- G. The power supply shall have power factor correction.

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#### 1.07 OPTICAL DATA

- A. The product shall contain a patented Dense Matrix LED Light Source manufactured by DiCon FiberOptics, Inc.
  - 1. The fixture shall have a wall wash native beam angle
- B. All LEDs used in the product shall be manufactured by DiCon FiberOptics, ensuring high brightness and proven quality.
- C. DiCon FiberOptics, Inc. shall utilize an advanced production LED binning process to maintain color consistency.
- D. All LED products (100% of each lot) shall undergo a minimum three-hour burn-in test during manufacturing.
- E. The LED system shall comply with all relevant patents.

#### 1.08 SPECTRUM

- A. Photosynthetically Active Radiation (PAR)
  - a. The fixture will output a spectrum low in green light (no more than 32% of the total PPFD output shall fall in the 500-600nm range when set at 4000K, and no more than 36% at 6500K), as plants do not use green light.
- B. AMZ (Amazon Sun)
  - a. Fixture shall have a tunable CCT between 4000K-6500K
- C. TB (Tuna Blue)
  - a. Fixture shall have a tunable CCT between 10000K and 20000K
  - b. Fixture shall have a broadband blue spectrum with no spectral gaps between 390nm and 500nm

#### 1.09 INTENSITY MEASUREMENTS

- A. The fixture shall emit a luminous flux of approximately 8,350 lumens in Amazon Sun and 3,056 lumens in Tuna Blue.
- B. The fixture must produce a uniform light distribution without intense brightness in the center. When measuring light output, the center intensity should be no more than 2x that measured at 30 degrees from the center.

#### 1.10 DIMMING AND CONTROL

- A. The product shall provide LED dimming from 0% to 100% using a 0-255 scale, where values between 0 and 255 control the light's brightness.
- B. The product shall use analog dimming and be flicker-free at all refresh rates/measurements when run above 6% intensity.

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- C. The product shall be equipped with a 2-knob user interface and can be DMX controlled when used with a DMX-compatible driver labeled “PSX” in the ordering guides and part numbers.
- D. DMX Footprint
  - a. Amazon Sun
    - i. Channel 1: Intensity (0–255)
    - ii. Channel 2: CCT (2,000K–10,000K mapped across 0–255)
  - b. Tuna Blue
    - i. Channel 1: Intensity (0–255)
    - ii. Channel 2: CCT (10,000K–20,000K mapped across 0–255)
    - iii. Channel 3: Violet Control
    - iv. Channel 4: Red Control
    - v. Channel 5: Green Control

**1.11 REQUIRED FEATURE SET**

- A. The product shall offer user-selectable Color Temperature settings.
- B. The product shall offer user-selectable dimming settings.
- C. The product shall contain a direct power connection.
- D. The product shall contain two manual knobs on the back of the fixture to control all fixture parameters.
- E. All provided products will contain the above feature set.

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