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## MAC 250+ SPECIFICATIONS

### Description

- ☞ The MAC 250+ is an automated yoke-mounted profile spotlight that employs a 250 watt discharge source. It provides an 18.3° achromatic lens system, 12 easily replaceable saturated dichroic color filters, 8 easily replaceable rotating gobos, indexible gobo rotation, a fast 3-facet rotating prism, variable focus, strobe effects, 0 to 100% dimming, and accurate 16-bit movement.

### Physical

- ☞ Length: 330 mm (13.0 in)
- ☞ Width: 384 mm (15.1 in)
- ☞ Height (head at tilt limit): 525 mm (20.7 in)
- ☞ Weight: 22.0 kg (48.4 lbs)

### Source

- ☞ Lamp: 200 or 250 W discharge
- ☞ Base: GY 9.5
- ☞ Approved models: Philips MSD 200, MSD 250/2; Osram HSD 250
- ☞ Control: automatic and/or remote on/off

### Photometrics (Standard)

- ☞ Light output (18° +/- 0.5° focused beam, MSD 250/2, diffuser installed): 3180 lumens
- ☞ Illuminance (lux or fc): 117,242 cd / distance<sup>2</sup> (m or ft)
- ☞ Diameter: 0.32 x distance
- ☞ Field angle: 18.3°
- ☞ Measurement conditions: 230 V, 50 Hz; no effects applied, diffuser installed
- ☞ Measurement source: Philips MSD 250/2

### Electromechanical effects

- ☞ Color wheel: 12 replaceable colors + open and split positions
- ☞ Rotating-gobo wheel: 8 replaceable gobos + open
- ☞ Gobo indexing: 0 - 395°, 8-bit
- ☞ Dimmer/shutter: 0 - 100%, 0 - 20 flashes per second
- ☞ Rotating 3-facet prism: in/out, variable speed and direction
- ☞ Focus: 2 m to infinity
- ☞ Pan: 540° in 0.013° steps
- ☞ Tilt: 289° in 0.007° steps

### Control & Programming

- ☞ Control options: USITT DMX-512, Martin RS485
- ☞ Setting and addressing: LED control panel, remote w/ uploader
- ☞ Firmware update: serial upload (MUF)
- ☞ Pan/tilt resolution: 8- or 16-bit
- ☞ DMX speed control: tracking and/or vector
- ☞ DMX channels: 9 - 13
- ☞ Receiver: Opto-isolated RS-485
- ☞ Data I/O: locking 3-pin XLR female; pin 1 shield, pin 2 cold (-), pin 3 hot (+)

### Installation

- ☞ Mounting points: 2 pairs of 1/4-turn locks, offset 90°
- ☞ Orientation: any
- ☞ Minimum installation distance, center-to-center: 378 mm (14.9 in)
- ☞ Minimum distance to combustible materials: 0.3 m (12 in)
- ☞ Minimum distance to illuminated surfaces: 0.3 m (12 in)

### Thermal

- ☞ Maximum ambient temperature (Ta): 40° C (104° F)
- ☞ Maximum lamp-socket temperature: 150° C (302° F)
- ☞ Maximum shell surface temperature: 110° C (230° F)
- ☞ Total heat dissipation: 1262 Btu/hr

### AC Supply

- ☞ AC input: 3-pin IEC male socket
- ☞ Wiring options: 100/120/210/230/250 V, 50/60 Hz

**Maximum power and current**

- ☞ 100 V, 50 or 60 Hz: 350 W, 4.1 A
- ☞ 120 V, 50 or 60 Hz: 350 W, 3.2 A
- ☞ 210 V, 50 or 60 Hz: 370 W, 2.2 A
- ☞ 230 V, 50 or 60 Hz: 360 W, 1.8 A
- ☞ 250 V, 50 or 60 Hz: 370 W, 1.7 A

**Design standards**

- ☞ Canadian safety: CSA C22.2 NO 166
- ☞ EU EMC: EN 50 081-1, EN 50 082-1
- ☞ EU safety: EN 60598-1, EN 60598-2-17
- ☞ US safety: ANSI/UL 1573

**Construction**

- ☞ Housing: UV-resistant fiber-reinforced composite
- ☞ Finish: black, integral color
- ☞ Protection factor: IP 20

**Ordering information**

- ☞ MAC 250+ in cardboard: 90225200
- ☞ MAC 250+; flight case: 90225201

**Accessories**

- ☞ Flight case, 4 x MAC 250/300: 91510005
- ☞ Flight case, 2 x MAC 250/300: 91510004
- ☞ MP-2 Uploader: 90758420
- ☞ G-clamp: 91602003
- ☞ Half-coupler clamp: 91602005
- ☞ Optional gobos

**Gobos**

- ☞ Outside diameter: 22.5 mm + 0/- 0.3 mm (0.886 in. +0/- 0.012 in)
- ☞ Maximum image diameter: 17 mm (0.669 in)
- ☞ Maximum thickness: 1.8 mm (0.071 in)
- ☞ Glass: high temperature Borofloat or better with
- ☞ Glass coating: dichroic or enhanced aluminum
- ☞ Metal: aluminum (steel for short term use)

**Included items**

- ☞ Omega bracket, MAC 250/300, 1/4-turn: 91602000
- ☞ XLR cable, 5 m, black, 3-pin: 11820008
- ☞ Mains cable, 3 m, IEC 3-pin: 11501013
- ☞ User manual: 35000067

**Sample project specification****General**

The luminaire shall be an automated yoke-mounted profile spotlight employing a 250 watt disc lamp as the light source. The luminaire shall be the Martin MAC 250+.

**Mechanical effects**

The luminaire shall have one wheel with 12 dichroic glass color filters and an open position. The color wheel shall rotate continuously clockwise and counterclockwise and shall be positionable between filters. The color filters shall be manually insertable. The luminaire shall have one wheel with eight rotating holders for insertable glass and metal gobos. The gobo wheel shall rotate continuously clockwise and counterclockwise at variable speeds and be programmed with an oscillating "shake" function. The rotating holders shall turn continuously clockwise and counterclockwise at variable speed and shall accommodate gobos 22.5 mm (0.886 in) in diameter and up to 1.8 mm (0.071 in.) thick. Gobo rotation shall be indexable to any of 256 repeatable positions. The luminaire shall have a variable focus system capable of focusing gobo patterns a distance of 2 meters (6.5 ft.) to infinity. The luminaire shall have a three-facet prism that rotates clockwise and counterclockwise at variable speeds sufficient to create harmonic interference effects when combined with gobo patterns. The luminaire shall have a mechanical dimmer system that varies the intensity of the light output from 0 to 100 percent in 256 steps and create stroboscopic effects at speeds up to 20 flashes per second. The dimmer shall be capable of simulating the dimming curve of incandescent lamps. The luminaire shall pan 540° and tilt 289°.

**Control**

The luminaire shall respond to command signals conforming to either the USITT DMX512 (1990 standard) or the Martin RS485 standard. All user-selected software settings shall be adjustable on an onboard control panel with LED display or via data cabling in conjunction with a remote control unit. The luminaire shall have two locking 3-pole XLR connectors for serial data transfer.

**Performance**

When fitted with a new MSD 250/2 discharge lamp, the luminaire shall emit a total luminous flux of 3180 lumens in a focused beam. The optical system shall employ achromatic lenses and provide a beam angle of 18.3°.

☛ **Housing**

The exterior of the luminaire shall be constructed of high temperature UV-resistant fiberglass-reinforced nylon with integral black color. The housing shall provide a protection factor of IP 20

☛ **Installation**

The luminaire shall operate in any orientation. It shall be supplied with a bracket to which mounting clamps may be bolted. The bracket shall attach to the base with quarter-turn fasteners such that the luminaire may be installed at any increment of 90° in a plane parallel to the structure. When installed above floor level, secondary attachment shall be fastened to an attachment point in the luminaire's base.

☛ **Electrical**

The luminaire shall operate, within a tolerance of five percent, on 50 and 60 Hz supplies at 100, 120, 210, 230, and 250 volts. It shall be fitted with a three-prong male IEC socket for connecting AC power. The luminaire shall be electrically grounded. The luminaire shall conform with CE safety standards EN 60598-1 and EN 60598-2-17, and with CE electromagnetic compatibility standards EN 50 081-1 and EN 50 082-1. The luminaire shall be cETL certified for compliance with CSA standard C22.2 No. 166, and ETL certified for compliance with ANSI/UL standard 1573.

☛ **Environmental**

The luminaire shall be located in a dry area in which the ambient temperature does not exceed 40°C (104°F).

☛ **Physical**

Size (head at maximum tilt): 384 x 330 x 525 mm (13.0 x 15.1 x 20.7 in.) Weight: 22.0 kg (48.5 lbs)