



MAC TW1™  
Tungsten Wash



Just like sunlight, an incandescent source is ideal for highlighting skin tones or textiles, making it the preferred light source for television, theatre, concerts, film sets, fashion shows and corporate events.

# Living colors

The MAC TW1 is Martin's 1200 W Tungsten Wash fixture that brings to the stage and studio all the optical brilliance and feature quality of the MAC range – with the warmth of tungsten halogen.

# The edge of beauty

The MAC TW1 has truly beautiful soft beam edges and an unquestionable uniformity in light and color output.

This gives an even distribution across a projected surface and allows seamless overlapping of beams for large stage and set areas.



## Dynamic zoom and lens options

A twin lens zoom offers lighting designers the flexibility of working with different beam angles, while the zoom system ensures total control of the beam angle without compromising the quality of the light itself. The standard lens gives a variable field angle range of 18° to 40°. Two optional lens kits are available – a very wide-angle lens with a range of 94° to 102°, and a narrow-angle lens with a 14° to 27° range, if longer throw distances are required.



## Internal and external dimming

Prepared for use with external dimming systems, the MAC TW1 has also been fitted with an internal IGBT dimmer. This is advantageous for smaller productions not requiring external dimmer racks or off-stage fixture placement where dimmer cables can be cumbersome. When using external dimming, no power can reach the fixture's lamp before its safety features are activated.



## Mechanical dimming

In addition to the electronic dimming options, the MAC TW1 is also fitted with a mechanical dimmer. As this mechanical dimmer is independent of the lamp itself, the color temperature remains in balance throughout the dimming process. The mechanical shutter also gives you instant snaps to full or zero, and variable speed strobe effects.



# The science of silence

Despite being the brightest 1200 W fixture in its class, the MAC TW1 is also exceptionally quiet. Less than 40dBA.

This is achievable through its cold-light reflector technology and a new, patent-pending silent cooling design, which traps the heat and silently dissipates it away from the back of the fixture.



## **Heat management**

Convection cooling through a magnesium shell ensures the fixture has an extremely quiet operating noise level while also directing heat away from the stage or set.

The MAC TW1 operates in three modes:

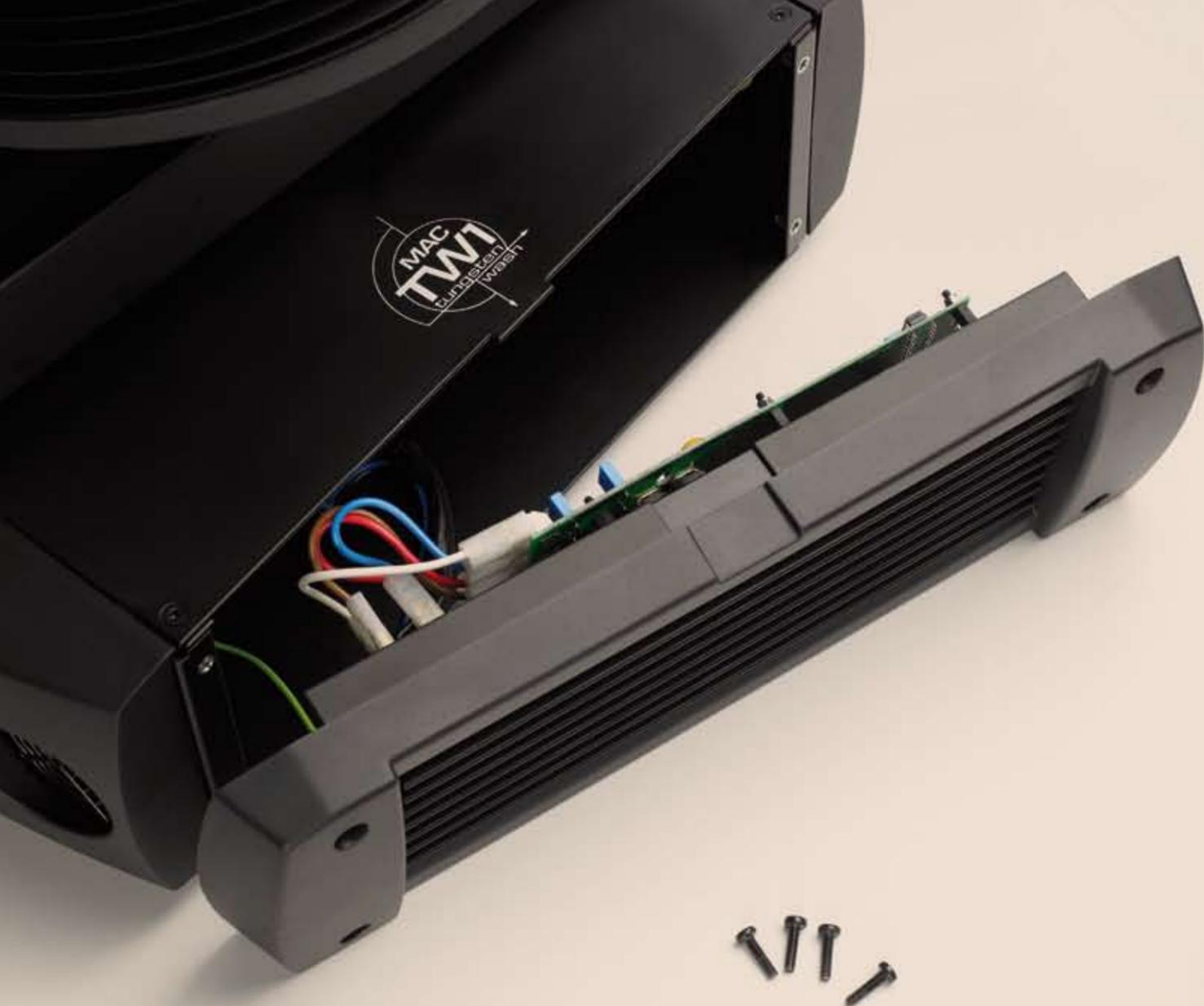
## **Normal, Studio and Silent.**

Selectable from your lighting desk, Silent mode reduces the speed of effects and mechanical movements for an even smoother, quieter performance. A convection cooling only setting is also available from the lighting desk.

## **Accurate and quiet movement**

A precise pan and tilt system (540°/242°) gives measured and accurate movement - no matter how fast or slow, while Martin's yoke technology ensures the quietest movement in its class.





# The finer details...

It is not only about bright, brilliant, colorful output, but also ensuring that service and day-to-day adjustments are straightforward and fast. That is the philosophy behind all Martin luminaires, and in the MAC TW1 this objective comes into its own.



## The complete global package

The MAC TW1 comes out of the box as a complete operating fixture. A full auto-sensing switch-mode power supply means one single fixture can be used all over the world without the need for external power boxes and cables that increase transport costs and hassles.



## Simple lamp replacement & adjustment

A single-ended, quarter-turn lamp makes lamp replacement simple and fast, cutting down service and maintenance time. Three illuminated lamp indicators on the back of the fixture allow easy adjustment in the dark. The MAC TW1 can be fitted with a 230 V, 240 V or 115 V lamp as well as a new breed of 80 V lamp that offers a far superior output to traditional mains voltage lamps.

## Easy maintenance

A clever modular design with multi-connectors for easy access, maintenance and cleaning reduces service time and cost of ownership. The fixture is prepared for a range of accessories, such as barndoors, gel frames and top hats.



# Optical accessories



## Dramatic new flexibility

Extend the functionality of the MAC TW1 with a range of optical accessories. All lenses and attachments can be used without compromising the quality of light. Simply swap the current lens with the new narrow-angle or very wide-angle front, fasten with four quarter-turns and attach the safety wire. No components need to be changed inside the fixture.



### Narrow-angle lens kit

The narrower zoom range of 14° to 27° enhances beam intensity and provides a tight beam for venues where longer throw distances are necessary, for example at larger theatres, concert halls, and opera houses.



### Very wide-angle lens kit

The very wide-angle lens spreads light from 94° to 102° and is perfect for short-distance projection to light up a large area, for example cycloramas and scenery.

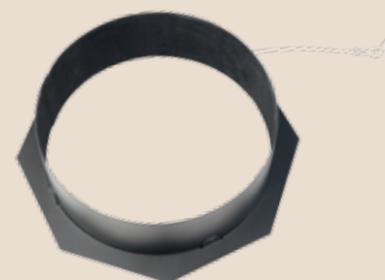


### Front accessory holder

The front accessory holder is easily attached to the front of all lens options, with four runners (three static and one spring-mounted clip) to lock accessories into place. Silicone rubber inserts stop any vibration noise while the fixture is moving.

## Front accessories

We have teamed up with City Theatrical Inc. of New York to offer front accessories that increase the flexibility of the MAC TW1, for additional optical control. Up to two accessories can fit onto the front accessory holder, and all accessories, except for the gel frame, come with a safety wire.



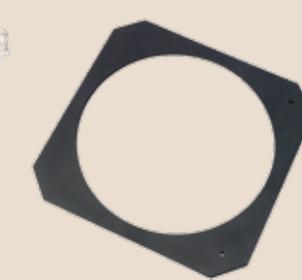
### Top hat

The top hat is designed to shield the audience or a camera from the direct source of light. With a flock coating on the inside, the top hat effectively absorbs light spill, eliminating unwanted reflections.



### Top hat with louver

With the additional honeycomb louver insert, this top hat further eliminates unwanted glare.



### Gel frame

The gel frame is a standard holder that accepts regular gel filters from major manufacturers, including all diffusion and correction gels.

# MAC TW1 Specifications



## PHYSICAL

|              |                                     |
|--------------|-------------------------------------|
| Base length: | 454 mm (17.9 in.)                   |
| Base width:  | 362 mm (14.3 in.)                   |
| Yoke width:  | 489 mm (19.3 in.)                   |
| Height:      | 709 mm (27.9 in.), head straight up |
| Weight:      | 27 kg (59.5 lbs.)                   |

## LAMP

|                 |   |
|-----------------|---|
| Type:           | 1200 W tungsten halogen   |
| Socket:         | PGJX-50   |
| Approved lamps: | Philips 1200/115, 1200/230 or 1200/240 FastFit,<br>Philips Hi-Brite 1200/80 FastFit |

Lamp voltage must match internal or external dimmer output voltage

## DYNAMIC EFFECTS

|                     |  |
|---------------------|--|
| Color mixing:       | CMY, independently variable 0 - 100%,<br>8- or 16-bit control                            |
| Shutter:            | Fast-action mechanical shutter,<br>variable speed strobe effect 1 - 10 Hz                |
| Zoom:               | 20° - 41° (2.1:1), 8- or 16-bit control  |
| Pan:                | 540°, 16-bit control   |
| Tilt:               | 242°, 16-bit control   |
| Electronic dimming: | Multi-voltage IGBT and 80 V internal dimmer<br>options, 'plug and play' external dimming |

## CONTROL AND PROGRAMMING

|                         |                            |
|-------------------------|----------------------------|
| DMX channels:           | 14/20                      |
| Setting and addressing: | Control panel with display |
| Pan/tilt resolution:    | 16-bit                     |
| CMY resolution:         | 8- and 16-bit              |
| Zoom resolution:        | 8- and 16-bit              |
| Control options:        | Tracking and/or vector     |
| Protocol:               | USITT DMX 512-A            |
| Receiver:               | Opto-isolated RS-485       |
| Firmware update:        | Serial upload (MUF)        |

## DIMMING SYSTEM OPTIONS

|                                     |  |
|-------------------------------------|--|
| Internal multi-voltage IGBT dimmer: | 0 - 100%, 8- or 16-bit dimming<br>resolution, controlled via DMX |
| Internal 80 V dimmer:               | 0 - 100%, 8- or 16-bit dimming<br>resolution, controlled via DMX |
| External dimmer input:              | Intelligent lamp power control                                   |

## CONSTRUCTION

|                    |  |
|--------------------|--|
| Color:             | Black  |
| Housing:           | Magnesium alloy, UV-resistant fiber-reinforced composite |
| Chassis:           | Steel & aluminum, shock-resistant design                 |
| Reflector:         | Glass, cold light  |
| Protection rating: | IP 20  |

## INSTALLATION

|   |                           |
|---|---------------------------|
| Orientation:  | Any                       |
| Mounting points:  | 2 pairs of 1/4-turn locks |
| Minimum distance to illuminated surfaces:                                     | 0.5 m (1.6 ft.)           |
| Minimum distance to combustible materials:                                    | 0.5 m (1.6 ft.)           |
| Minimum center-to-center installation distance:<br>(no accessories installed) | 550 mm (21.7 in.)         |

## CONNECTIONS

|                             |   |
|-----------------------------|---|
| Power connection:           | 3 m (9.8 ft.) integral cable without power plug |
| Data connection:            | 3-pin and 5-pin locking XLR                     |
| External dimmer connection: | Neutrik Powercon                                |

## ELECTRICAL

|            |                                     |
|------------|-------------------------------------|
| AC power:  | 100-120/200-240 V nominal, 50/60 Hz |
| Main fuse: | 20 A                                |

## TYPICAL POWER AND CURRENT

|  |                          |
|--|--------------------------|
| 115 V, 60 Hz:  | 1226 W, 10.7 A, PF 0.998 |
| 230 V, 50 Hz:  | 1220 W, 5.3 A, PF 0.995  |
| 240 V, 50 Hz:  | 1233 W, 5.2 A, PF 0.996  |
| 230 V, 50 Hz using internal 80 V dimmer:                         | 1219 W, 5.5 A, PF 0.970  |
| 230 V, 50 Hz using external dimmer,<br>figures for fixture only: | 93 W, 1.0 A, PF 0.420    |

Wattage, amperage and power factor figures are typical, not maximum.  
Allow for a deviation of +/- 10%.

## THERMAL

|  |  |
|--|--|
| Lamp cooling:  | Patent-pending low-noise ducted forced air system      |
| Cooling:   | Filtered forced air (temperature-regulated, low noise) |
| Maximum ambient temperature (Ta):                                    | 40° C (104° F)   |
| Maximum surface temperature,<br>steady state, Ta=40° C (104° F):     | 200° C (392° F)  |
| Total heat dissipation<br>(calculated, 230 V, 50 Hz / 110 V, 60 Hz): | 4160 / 4180 BTU/hr.                                    |

## ACOUSTIC

|              |   |
|--------------|---|
| Noise level: | Below 40 dBA at 1 m (3.3 ft.), Ta=20° C (68° F),<br>steady state, lamp on, effects static |
|--------------|---|

## APPROVALS

|                  |                                   |
|------------------|-----------------------------------|
| US safety:       | ANSI/UL 1573                      |
| Canadian safety: | CSA C22.2 No. 166                 |
| EU safety:       | EN 60598-2-17                     |
| EU EMC:          | EN 55 015, EN 55 103-1, EN 61 547 |

## INCLUDED ITEMS

Two Omega brackets, 1/4-turn

## ACCESSORIES

|   |              |
|---|--------------|
| Very wide-angle lens kit:                         | P/N 91610032 |
| Narrow-angle lens:                                | P/N 91610033 |
| Front accessory holder:                           | P/N 91611260 |
| Internal 80 V dimmer:                             | P/N 91614026 |
| Flight case (holds 2 fixtures):                   | P/N 91510019 |
| Half-coupler clamp:                               | P/N 91602005 |
| G-clamp:  | P/N 91602003 |
| Quick trigger clamp:                              | P/N 91602007 |
| Omega bracket:                                    | P/N 91602001 |
| Safety wire, universal, 50 kg safe work load:     | P/N 91604003 |
| DMX cable, STP, 1 pair + shield, IEC/UL-CL, 1 m:  | P/N 91611242 |
| DMX cable, STP, 1 pair + shield, IEC/UL-CL, 2 m:  | P/N 91611243 |
| DMX cable, STP, 1 pair + shield, IEC/UL-CL, 5 m:  | P/N 91611244 |
| DMX cable, STP, 1 pair + shield, IEC/UL-CL, 10 m: | P/N 91611245 |
| DMX cable, STP, 1 pair + shield, IEC/UL-CL, 20 m: | P/N 91611246 |
| Top hat*  |              |
| Gel frame*  |              |
| Top hat with louver*                              |              |

\*Available from City Theatrical [www.citytheatrical.com](http://www.citytheatrical.com)  
or call Martin for details

## RELATED ITEMS

DABS1 Hardware Interface (USB-XLR): P/N 91611144

## SPARE PARTS

|   |              |
|---|--------------|
| Philips Hi-Brite 1200/80 FastFit 80 V lamp: | P/N 97000006 |
| Philips 1200/115 FastFit 115 V lamp:        | P/N 97000112 |
| Philips 1200/230 FastFit 230 V lamp:        | P/N 97000113 |
| Philips 1200/240 FastFit 240 V lamp:        | P/N 97000114 |

## ORDERING INFORMATION

|   |              |
|---|--------------|
| MAC TW1, Multi-voltage, IGBT dimmer,<br>cardboard packing case: | P/N 90202000 |
| MAC TW1, Multi-voltage, IGBT dimmer,<br>double flightcase:      | P/N 90202001 |
| MAC TW1, Multi-voltage, 80 V dimmer,<br>cardboard packing case: | P/N 90202400 |
| MAC TW1, Multi-voltage, 80 V dimmer,<br>double flightcase:      | P/N 90202401 |



# Photometric Data

## NARROW

## MEDIUM (STANDARD)

Test lamp  
Test conditions  
Rated color temperature  
Rated output



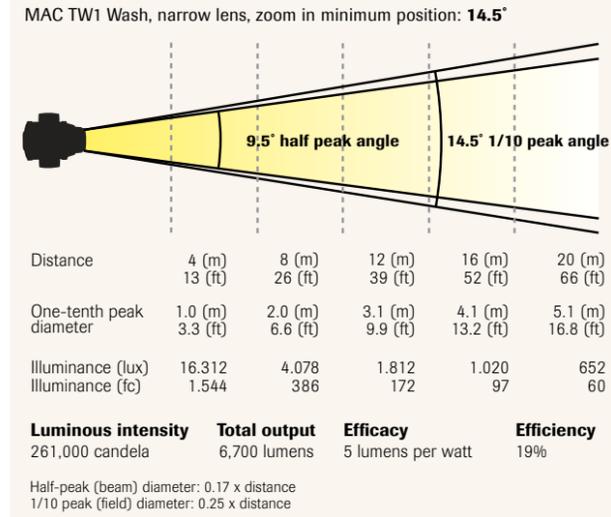
Test lamp  
Test conditions  
Rated color temperature  
Rated output



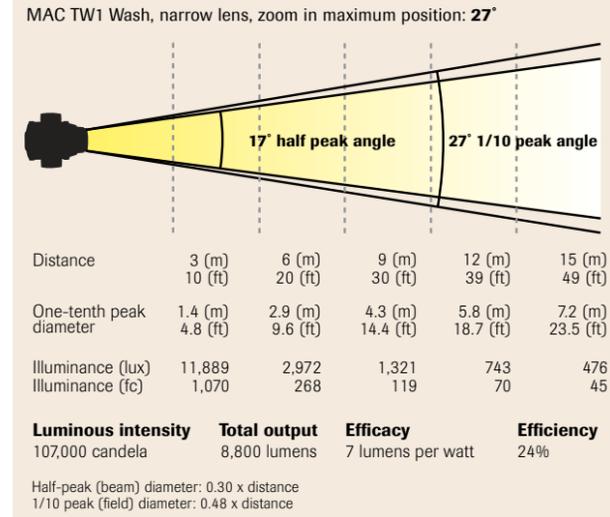
Test lamp  
Test conditions  
Rated color temperature  
Rated output



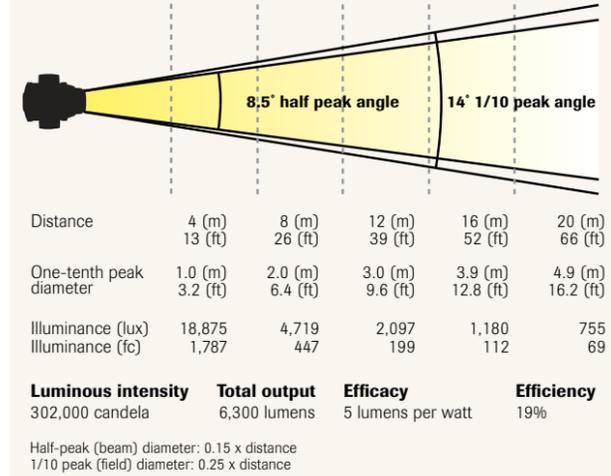
### Zoom in minimum position



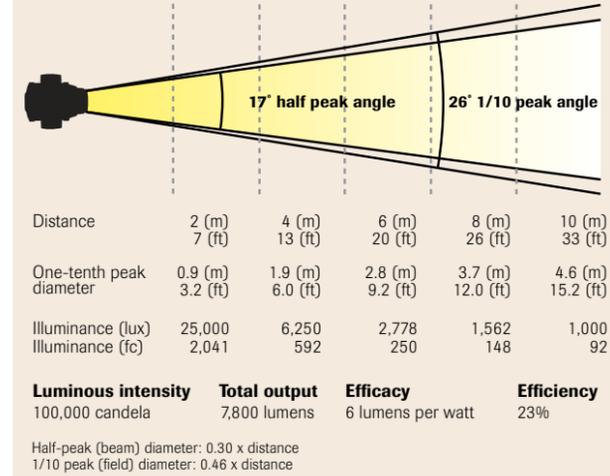
### Zoom in maximum position



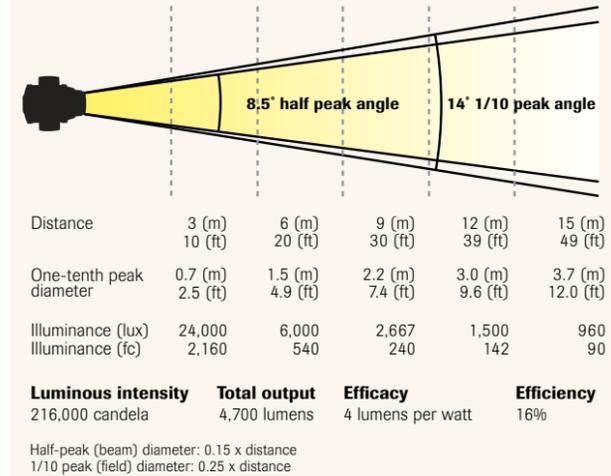
### MAC TW1 Wash, narrow lens, zoom in minimum position: 14°



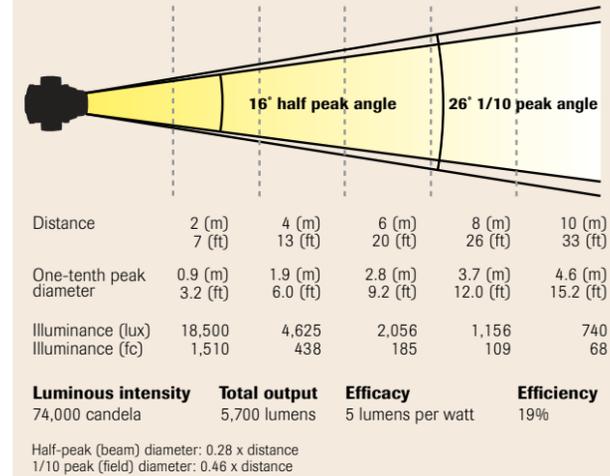
### MAC TW1 Wash, narrow lens, zoom in maximum position: 26°



### MAC TW1 Wash, narrow lens, zoom in minimum position: 14°



### MAC TW1 Wash, narrow lens, zoom in maximum position: 26°



Test lamp  
Test conditions  
Rated color temperature  
Rated output



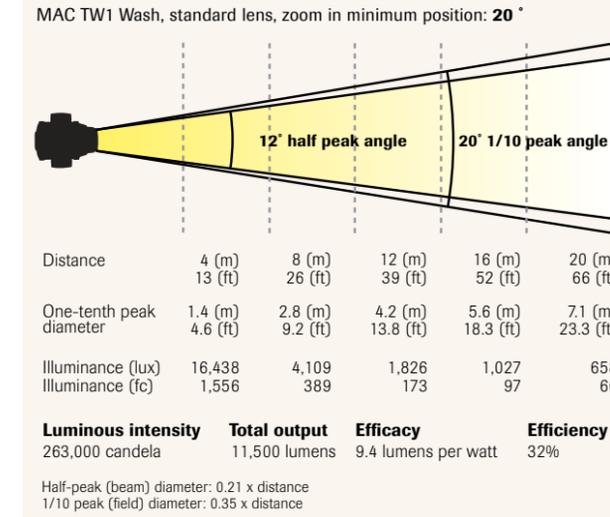
Test lamp  
Test conditions  
Rated color temperature  
Rated output



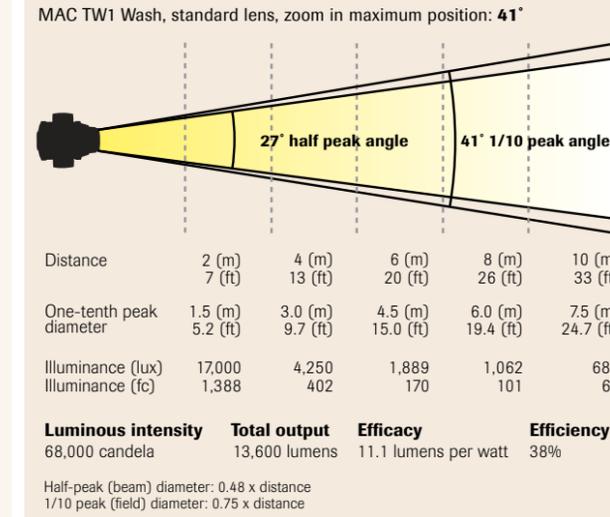
Test lamp  
Test conditions  
Rated color temperature  
Rated output



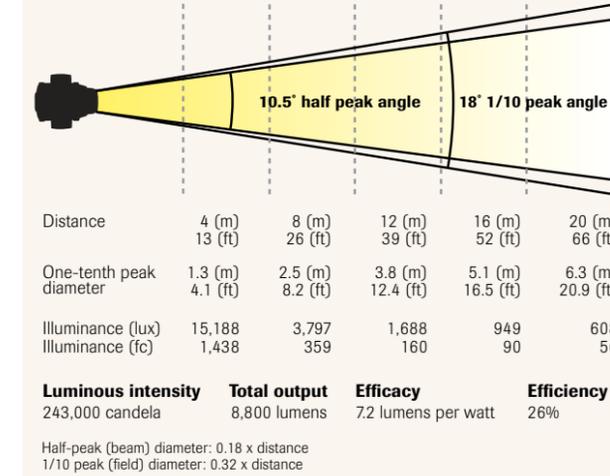
### Zoom in minimum position



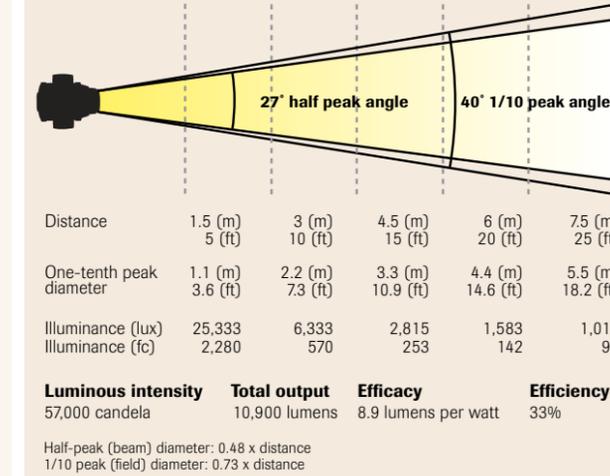
### Zoom in maximum position



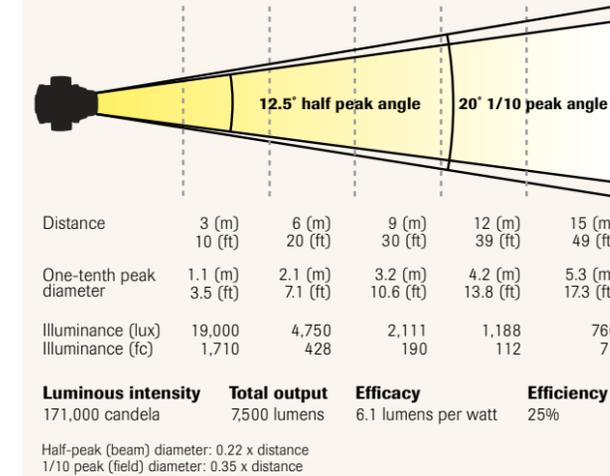
### MAC TW1 Wash, standard lens, zoom in minimum position: 18°



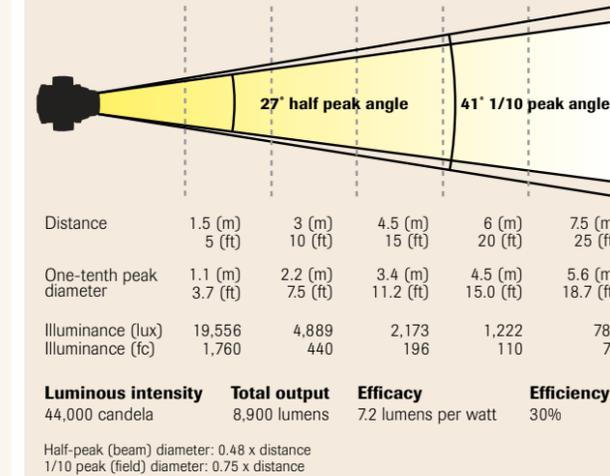
### MAC TW1 Wash, standard lens, zoom in maximum position: 40°



### MAC TW1 Wash, standard lens, zoom in minimum position: 20°



### MAC TW1 Wash, standard lens, zoom in maximum position: 41°



VERY WIDE

**Philips Hi-Brite 80 V, 50 Hz FastFit**  
80 V, 50 Hz, no effects applied  
3250 K  
36000 lumens

Test lamp  
Test conditions  
Rated color temperature  
Rated output

**Philips 115 V, 60Hz FastFit**  
115V, 60 Hz, no effects applied  
3200 K  
33600 lumens

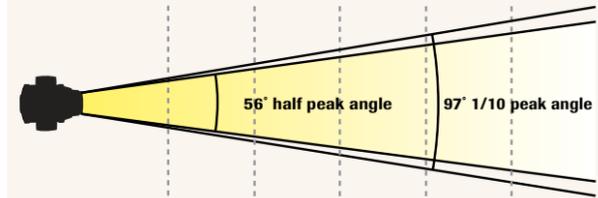
Test lamp  
Test conditions  
Rated color temperature  
Rated output

**Philips 230/240 V, 50 Hz FastFit**  
240 V, 50 Hz, no effects applied  
3200 K  
30000 lumens

Test lamp  
Test conditions  
Rated color temperature  
Rated output

**Zoom in minimum position**

MAC TW1 Wash, very wide lens, zoom in minimum position: **97°**



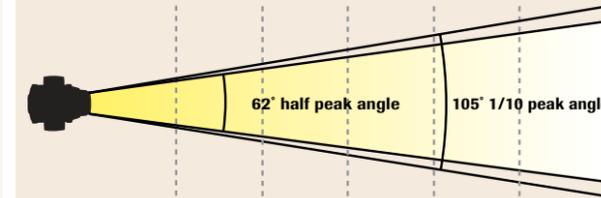
|                         |                     |                      |                      |                      |                       |
|-------------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)     | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.3 (m)<br>6.8 (ft) | 4.5 (m)<br>15.8 (ft) | 6.8 (m)<br>22.6 (ft) | 9.0 (m)<br>29.4 (ft) | 11.3 (m)<br>36.2 (ft) |
| Illuminance (lux)       | 14,000              | 3,500                | 1,556                | 875                  | 560                   |
| Illuminance (fc)        | 1,556               | 286                  | 140                  | 83                   | 55                    |

|                           |                     |                    |                   |
|---------------------------|---------------------|--------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>    | <b>Efficiency</b> |
| 14,000 candela            | 12,700 lumens       | 10 lumens per watt | 35%               |

Half-peak (beam) diameter: 1.06 x distance  
1/10 peak (field) diameter: 2.26 x distance

**Zoom in maximum position**

MAC TW1 Wash, very wide lens, zoom in maximum position: **105°**

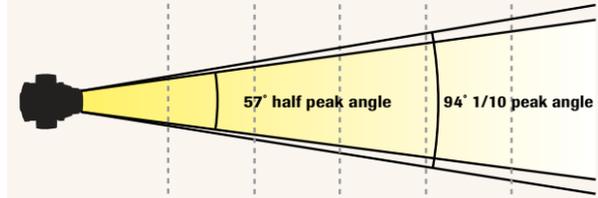


|                         |                     |                      |                      |                       |                       |
|-------------------------|---------------------|----------------------|----------------------|-----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)      | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.6 (m)<br>7.8 (ft) | 5.2 (m)<br>18.3 (ft) | 7.8 (m)<br>26.1 (ft) | 10.4 (m)<br>33.9 (ft) | 13.0 (m)<br>41.7 (ft) |
| Illuminance (lux)       | 13,000              | 3,250                | 1,444                | 812                   | 520                   |
| Illuminance (fc)        | 1,444               | 265                  | 130                  | 77                    | 51                    |

|                           |                     |                    |                   |
|---------------------------|---------------------|--------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>    | <b>Efficiency</b> |
| 13,000 candela            | 14,200 lumens       | 12 lumens per watt | 39%               |

Half-peak (beam) diameter: 1.2 x distance  
1/10 peak (field) diameter: 2.61 x distance

MAC TW1 Wash, very wide lens, zoom in minimum position: **94°**

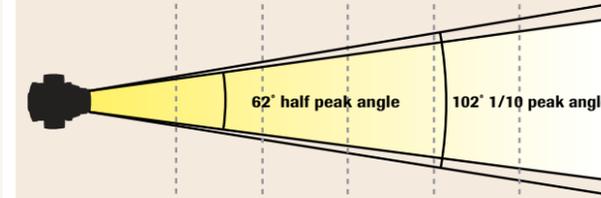


|                         |                     |                      |                      |                      |                       |
|-------------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)     | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.1 (m)<br>6.4 (ft) | 4.3 (m)<br>15.0 (ft) | 6.4 (m)<br>21.5 (ft) | 8.6 (m)<br>27.9 (ft) | 10.7 (m)<br>34.3 (ft) |
| Illuminance (lux)       | 12,000              | 3,000                | 1,333                | 750                  | 480                   |
| Illuminance (fc)        | 1,333               | 245                  | 120                  | 71                   | 47                    |

|                           |                     |                    |                   |
|---------------------------|---------------------|--------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>    | <b>Efficiency</b> |
| 12,000 candela            | 11,700 lumens       | 10 lumens per watt | 35%               |

Half-peak (beam) diameter: 1.09 x distance  
1/10 peak (field) diameter: 2.14 x distance

MAC TW1 Wash, very wide lens, zoom in maximum position: **102°**

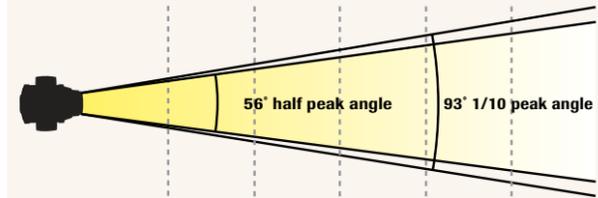


|                         |                     |                      |                      |                      |                       |
|-------------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)     | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.5 (m)<br>7.4 (ft) | 4.9 (m)<br>17.3 (ft) | 7.4 (m)<br>24.7 (ft) | 9.9 (m)<br>32.1 (ft) | 12.4 (m)<br>39.5 (ft) |
| Illuminance (lux)       | 11,000              | 2,750                | 1,222                | 688                  | 440                   |
| Illuminance (fc)        | 1,222               | 224                  | 110                  | 65                   | 43                    |

|                           |                     |                    |                   |
|---------------------------|---------------------|--------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>    | <b>Efficiency</b> |
| 11,000 candela            | 13,200 lumens       | 11 lumens per watt | 39%               |

Half-peak (beam) diameter: 1.20 x distance  
1/10 peak (field) diameter: 2.47 x distance

MAC TW1 Wash, very wide lens, zoom in minimum position: **93°**

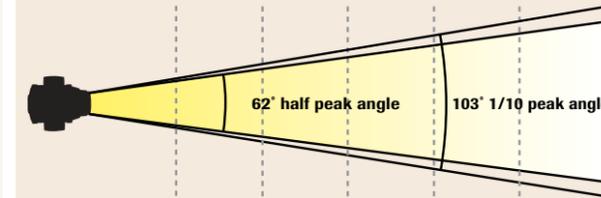


|                         |                     |                      |                      |                      |                       |
|-------------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)     | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.1 (m)<br>6.3 (ft) | 4.2 (m)<br>14.8 (ft) | 6.3 (m)<br>21.1 (ft) | 8.4 (m)<br>27.4 (ft) | 10.5 (m)<br>33.7 (ft) |
| Illuminance (lux)       | 9,000               | 2,250                | 1,000                | 562                  | 360                   |
| Illuminance (fc)        | 1,000               | 184                  | 90                   | 53                   | 35                    |

|                           |                     |                   |                   |
|---------------------------|---------------------|-------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>   | <b>Efficiency</b> |
| 9,000 candela             | 8,700 lumens        | 7 lumens per watt | 29%               |

Half-peak (beam) diameter: 1.06 x distance  
1/10 peak (field) diameter: 2.11 x distance

MAC TW1 Wash, very wide lens, zoom in maximum position: **103°**



|                         |                     |                      |                      |                       |                       |
|-------------------------|---------------------|----------------------|----------------------|-----------------------|-----------------------|
| Distance                | 1 (m)<br>3 (ft)     | 2 (m)<br>7 (ft)      | 3 (m)<br>10 (ft)     | 4 (m)<br>13 (ft)      | 5 (m)<br>16 (ft)      |
| One-tenth peak diameter | 2.5 (m)<br>7.5 (ft) | 5.0 (m)<br>17.6 (ft) | 7.5 (m)<br>25.1 (ft) | 10.1 (m)<br>32.7 (ft) | 12.6 (m)<br>40.7 (ft) |
| Illuminance (lux)       | 8,000               | 2,000                | 889                  | 500                   | 320                   |
| Illuminance (fc)        | 889                 | 163                  | 80                   | 47                    | 31                    |

|                           |                     |                   |                   |
|---------------------------|---------------------|-------------------|-------------------|
| <b>Luminous intensity</b> | <b>Total output</b> | <b>Efficacy</b>   | <b>Efficiency</b> |
| 8,000 candela             | 9,900 lumens        | 8 lumens per watt | 33%               |

Half-peak (beam) diameter: 1.20 x distance  
1/10 peak (field) diameter: 2.51 x distance

THEATRE

Vince Herbert, Head of Lighting, Royal Shakespeare Company



“We finally have an ideal moving light for theatre.” *Vince Herbert*

Simon Fraulo, Chief Lighting Technician, The National Theatre, UK



“I like how I can get from one color to another without passing through unpleasantness.” *Simon Fraulo*

CONCERTS

Glen Johnson, Lighting Director, Crowded House 'Time on Earth' tour, Lighting Designer, Paul Normandale



“The TW1s saved us thousands of dollars where a union crew was to stay and focus the rig, but ... we don't need to climb and focus, so production was rather happy.” *Glen Johnson*

OPERA

Valo Virtanen, Lighting Designer, Finland



“I'm glad that I finally have a quiet and powerful tool to use for operas and classical concerts ... Nowadays the sound guys actually speak and smile to me!” *Valo Virtanen*

TV & EVENTS

Chris Medvitz, Principal Lighting Designer, Lightswitch, Nissan and Infiniti booth, 2006-07 LA Auto Show



“They looked beautiful and operated flawlessly.” *Chris Medvitz*

Rohan Thornton, Lighting Designer, L'Oréal Paris 2007 AFI Awards, Australia



“They're bright and the colors are excellent - in fact I can't fault any of their features.” *Rohan Thornton*



**Martin**<sup>®</sup>

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Specifications are subject to change without notice

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