

# Fondazione Arena di Verona

**CAPITOLATO DI GARA PER LA FORNITURA A NOLEGGIO DI n° 42 (+ 2 spare) APPARECCHI MOTORIZZATI MARTIN MAC 3 PERFORMANCE COME DA SPECIFICA DELLA SCHEDA TECNICA ALLEGATA E n° 18 (+2 spare) APPARECCHI MOTORIZZATI TIPO ROBE BMFL WASH BEAM 1700W DA UTILIZZARE NELL 'IMPIANTO ILLUMINOTECNICO PER IL 97° ARENA OPERA FESTIVAL 2019**

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Le apparecchiature dovranno essere in ottime condizioni, con lampada nuova, completi di fly case e tutti gli accessori per sospensione. Le specifiche tecniche sotto elencate sono da ritenersi inderogabili. Si prega di controllare l'esatta posizione/sequenza dei gobos.

## **PERIODO DI NOLEGGIO**

Gli apparecchi dovranno essere consegnati presso l'anfiteatro Arena il giorno 20 Giugno 2019 e ritirati il giorno 8 Settembre 2019 presso la medesima sede.

# SPECIFICHE TECNICHE

## Physical

|                                 |                      |
|---------------------------------|----------------------|
| Length .....                    | 690 mm (27.2 in.)    |
| Width .....                     | 536 mm (21.1 in.)    |
| Height (head straight up) ..... | 914 mm (36.0 in.)    |
| Weight .....                    | 53.5 kg (117.9 lbs.) |

## Lamp

|                                   |                            |
|-----------------------------------|----------------------------|
| Type .....                        | 1500 W short arc discharge |
| Approved lamp .....               | Osram HTI 1500W/60/P50     |
| Color temperature .....           | 6000 K                     |
| CRI (Color rendering index) ..... | >85                        |
| Average lifetime .....            | 750 hours                  |
| Hot restrike .....                | Semi-hot                   |
| Socket: .....                     | PGJ50                      |
| Ballast .....                     | Electronic                 |

## Dynamic Effects

|                                  |  |
|----------------------------------|--|
| Color mixing .....               | CMY, independently variable 0 - 100%   |
| Color temperature control .....  | CTO, variable 6000 - 3200 K  |
| Color wheel .....                | 7 interchangeable dichroic filters + open, indexing,<br>continuous rotation, random color                      |
| Framing .....                    | Continuously rotatable framing module with 4<br>individually controllable blades                               |
| Rotating gobos .....             | Rotating gobo wheel with 5 interchangeable rotating<br>gobos + open, indexing, continuous gobo rotation, shake |
| Gobo animation .....             | Interchangeable animation wheel, indexing, continuous<br>rotation with variable angle, speed and direction     |
| Beam effect .....                | Interchangeable frost filter   |
| Iris .....                       | 0 - 100%, pulse effects  |
| Mechanical dimmer .....          | 0 - 100%   |
| Mechanical shutter .....         | Strobe effect 2 - 10 Hz, pulse effects, instant open and blackout  |
| Focus .....                      | 2 m to infinity  |
| Zoom .....                       | 11.5° - 55°  |
| Pan .....                        | 540°   |
| Tilt .....                       | 268°   |
| Position correction system ..... | Absolute position monitoring   |

## Control and programming

|                              |  |
|------------------------------|--|
| DMX channels .....           | 33/40  |
| Setting and addressing ..... | Control panel with backlit graphic display                             |
| RDM .....                    | Implemented  |
| 16-bit control .....         | Dimmer, gobo indexing (gobo wheels 1 and 2), focus, zoom, pan and tilt |
| Protocol .....               | USITT DMX512-A, ANSI/ESTA E1.20 RDM                                    |
| Fixture identification ..... | Four-digit user-settable ID number                                     |
| Receiver .....               | Opto-isolated RS-485   |
| Firmware update .....        | USB memory device or USB/DMX hardware interface                        |

## Photometric data

### Standard lens, zoom at minimum

|                            |          |
|----------------------------|----------|
| Efficiency .....           | 22%      |
| One tenth-peak angle ..... | 11°      |
| Total output .....         | 31500 lm |

### Standard lens, zoom at median

|                            |          |
|----------------------------|----------|
| Efficiency .....           | 23%      |
| One tenth-peak angle ..... | 32°      |
| Total output .....         | 33300 lm |

### Standard lens, zoom at maximum

|                            |          |
|----------------------------|----------|
| Efficiency .....           | 23%      |
| One tenth-peak angle ..... | 53°      |
| Total output .....         | 33800 lm |

Measurement source: Osram HTI 1500W/60/P50

Measurement conditions: 227 V, 50 Hz, no effects applied

### Construction

|                         |  |
|-------------------------|--|
| Color .....             | Black  |
| Housing .....           | Magnesium alloy, UV-resistant fiber-reinforced composite |
| Reflector .....         | Glass, cold light  |
| Protection rating ..... | IP20   |

### Gobos

|                              |   |
|------------------------------|---|
| Size .....                   | E   |
| Outside diameter .....       | 37.5 mm (1.5 in.) +/- 0.2 mm (0.01 in.)                                   |
| Maximum image diameter ..... | 30 mm (1.2 in.) +/- 0.4 mm (0.02 in.)                                     |
| Maximum thickness .....      | 1.1 mm (0.04 in.) +/- 0.1 mm (0.004 in.)                                  |
| Recommended glass .....      | Borosilicate 3.3 or better with dichroic or heavy matted aluminum coating |

### Gobo animation wheel

|                            |   |
|----------------------------|---|
| Outside diameter .....     | 133.9 mm (5.3 in.) +/- 0.1 mm (0.004 in.)   |
| Image outer diameter ..... | 130 mm (5.1 in.)  |
| Image inner diameter ..... | 32 mm (1.3 in.)   |
| Thickness .....            | 1.1 mm (0.04 in.) +/- 0.1 mm (0.004 in.)  |
| Recommended glass .....    | Borosilicate 3.3 or better with dichroic or normal/double mirror aluminum coating |

### Installation

|   |                           |
|---|---------------------------|
| Mounting points .....                             | 2 pairs of 1/4-turn locks |
| Orientation .....                                 | Any                       |
| Minimum distance from illuminated surface .....   | 2.5 m (100 in.)           |
| Minimum distance from combustible materials ..... | 0.2 m (8 in.)             |

### Connections

|  |   |
|--|---|
| AC power input .....                             | Neutrik PowerCon connector with 3 m (9.8 ft.) cable tail              |
| DMX and RDM data in/out .....                    | 5-pin locking XLR   |
| Ethernet (Artnet II compatible, ACN-ready) ..... | Neutrik RJ-45 socket (accepts Neutrik EtherCon connectors in housing) |
| USB devices (including USB memory storage) ..... | USB host socket   |
| Future USB options .....                         | USB device socket   |

### Electrical

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| AC input .....                        | 3 m trailing cable w/o cord cap     |
| AC power .....                        | 200-240 V nominal, 50/60 Hz         |
| Power supply .....                    | auto-ranging electronic switch-mode |
| Main fuse for 200 - 240 V power ..... | 16 AT (x 2)                         |

# PROTOCOLLO DMX

| Basic 16-bit Mode | 16-bit Extended Mode | DMX Value                            | Percent | Function   |
|-------------------|----------------------|--------------------------------------|---------|--|
| 1                 | 1                    | 0 - 19                               | 0 - 7   | <b>Strobe/shutter</b><br>Shutter closed (Lamp Switches to 800 watt mode after shutter is closed for 10 seconds)            |
|                   |                      | 20 - 49                              | 8 - 19  | Shutter open   |
|                   |                      | 50 - 64                              | 20 - 25 | Strobe, fast → slow  |
|                   |                      | 65 - 69                              | 26 - 27 | Shutter open   |
|                   |                      | 70 - 84                              | 28 - 33 | Opening pulse, fast → slow   |
|                   |                      | 85 - 89                              | 34 - 35 | Shutter open   |
|                   |                      | 90 - 104                             | 36 - 41 | Closing pulse, fast → slow   |
|                   |                      | 105 - 109                            | 42 - 43 | Shutter open   |
|                   |                      | 110 - 124                            | 44 - 49 | Random strobe, fast → slow   |
|                   |                      | 125 - 129                            | 50 - 51 | Shutter open   |
|                   |                      | 130 - 144                            | 52 - 57 | Random opening pulse, fast → slow  |
|                   |                      | 145 - 149                            | 58 - 59 | Shutter open   |
|                   |                      | 150 - 164                            | 60 - 65 | Random closing pulse, fast → slow  |
|                   |                      | 165 - 169                            | 66 - 67 | Shutter open   |
|                   |                      | 170 - 184                            | 68 - 73 | Burst pulse, fast → slow   |
|                   |                      | 185 - 189                            | 74 - 75 | Shutter open   |
|                   |                      | 190 - 204                            | 76 - 81 | Random burst pulse, fast → slow  |
|                   |                      | 205 - 209                            | 82 - 83 | Shutter open   |
|                   |                      | 210 - 224                            | 84 - 89 | Electronic sine wave strobe, fast → slow   |
|                   |                      | 225 - 229                            | 90 - 91 | Shutter open   |
| 230 - 244         | 92 - 97              | Electronic burst strobe, fast → slow |         |  |
| 245 - 255         | 98 - 100             | Shutter open                         |         |  |
| 2                 | 2                    | 0 - 255                              | 0 - 100 | <b>Dimmer fade (MSB)</b><br>Closed → open  |
| -                 | 3                    | 0 - 255                              | 0 - 100 | <b>Dimmer fade, fine (LSB)</b>   |
| 3                 | 4                    | 0 - 255                              | 0 - 100 | <b>Cyan</b><br>White → full cyan   |
|                   |                      |                                      |         | <b>Cyan range in random CMY color</b><br><i>when random CMY selected on channel 21 (16-bit) or 25 (16-bit extended)</i>    |
|                   |                      | 0                                    | 0       | Normal (full range)  |
|                   |                      | 1 - 127                              | 1 - 50  | Minimum cyan setting (127 = full cyan)   |
|                   |                      | 128 - 254                            | 51 - 99 | Maximum cyan setting (128 = no cyan)   |
| 255               | 100                  | Normal (full range)                  |         |  |
| 4                 | 5                    | 0 - 255                              | 0 - 100 | <b>Magenta</b><br>White → full magenta   |
|                   |                      |                                      |         | <b>Magenta range in random CMY color</b><br><i>when random CMY selected on channel 21 (16-bit) or 25 (16-bit extended)</i> |
|                   |                      | 0                                    | 0       | Normal (full range)  |
|                   |                      | 1 - 127                              | 1 - 50  | Minimum magenta setting (127 = full magenta)   |
|                   |                      | 128 - 254                            | 51 - 99 | Maximum magenta setting (128 = no magenta)   |
| 255               | 100                  | Normal (full range)                  |         |  |



| Basic 16-bit Mode | 16-bit Extended Mode | DMX Value           | Percent | Function   |
|-------------------|----------------------|---------------------|---------|--|
| 5                 | 6                    | 0 - 255             | 0 - 100 | <b>Yellow</b><br>White → full yellow   |
|                   |                      | 0                   | 0       | <b>Yellow range in random CMY color</b><br>when random CMY selected on channel 21 (16-bit) or 25 (16-bit extended) |
|                   |                      | 1 - 127             | 1 - 50  | Normal (full range)  |
|                   |                      | 128 - 254           | 51 - 99 | Minimum yellow setting (127 = full yellow)   |
|                   |                      | 255                 | 100     | Maximum yellow setting (128 = no yellow)<br>Normal (full range)  |
| 6                 | 7                    | 0 - 255             | 0 - 100 | <b>CTO</b><br>Open (6000 K) → warm (3200 K)  |
|                   |                      |                     |         | <b>Color Wheel</b>   |
| 7                 | 8                    | 0                   | 0       | <i>Continuous Scroll</i><br>Open   |
|                   |                      | 1 - 19              | 1 - 7   | Open → Slot 1 - Blue   |
|                   |                      | 20                  | 8       | Slot 1   |
|                   |                      | 21 - 39             | 9 - 15  | Slot 1 → Slot 2 - Green  |
|                   |                      | 40                  | 16      | Slot 2   |
|                   |                      | 41 - 59             | 17 - 23 | Slot 2 → Slot 3 - Orange   |
|                   |                      | 60                  | 24      | Slot 3   |
|                   |                      | 61 - 79             | 25 - 31 | Slot 3 → Slot 4 - Minus green  |
|                   |                      | 80                  | 32      | Slot 4   |
|                   |                      | 81 - 99             | 33 - 39 | Slot 4 → Slot 5 - Yellow   |
|                   |                      | 100                 | 40      | Slot 5   |
|                   |                      | 101 - 119           | 41 - 47 | Slot 5 → Slot 6 - Congo (deep blue)  |
|                   |                      | 120                 | 48      | Slot 6   |
|                   |                      | 121 - 139           | 49 - 55 | Slot 6 → Slot 7 - Red  |
|                   |                      | 140                 | 56      | Slot 7   |
|                   |                      | 141 - 159           | 57 - 63 | Slot 7 → Open  |
|                   |                      | 160                 | 64      | Open   |
|                   |                      |                     |         | <i>Stepped Scroll (snap to full color positions)</i>   |
|                   |                      | 161 - 164           | 65 - 66 | Slot 7 - Red   |
|                   |                      | 165 - 168           | 67 - 68 | Slot 6 - Congo (deep blue)   |
|                   |                      | 169 - 172           | 69 - 70 | Slot 5 - Yellow  |
|                   |                      | 173 - 176           | 71 - 72 | Slot 4 - Minus green   |
|                   |                      | 177 - 180           | 73 - 74 | Slot 3 - Orange  |
|                   |                      | 181 - 184           | 75 - 76 | Slot 2 - Green   |
|                   |                      | 185 - 188           | 77 - 78 | Slot 1 - Blue  |
|                   |                      | 189 - 192           | 79 - 80 | Open   |
|                   |                      |                     |         | <i>Continuous Rotation</i>   |
|                   |                      | 193 - 214           | 81 - 86 | CW, Fast → Slow  |
|                   |                      | 215 - 221           | 87 - 88 | Stop (This will stop wherever the wheel is at the time)  |
|                   |                      | 222 - 243           | 89 - 94 | CCW, Slow → Fast   |
|                   |                      | <i>Random color</i> |         |  |
| 244 - 247         | 95 - 96              | Fast                |         |  |
| 248 - 251         | 97 - 98              | Medium              |         |  |
| 252 - 255         | 99 - 100             | Slow                |         |  |



| Basic 16-bit Mode | 16-bit Extended Mode | DMX Value | Percent  | Function   |
|-------------------|----------------------|-----------|----------|--|
| 8                 | 9                    |           |          | <b>Gobo selection, indexing, shake, rotation</b><br><i>Indexed gobo selection: set indexed angle on channel 9 (16-bit) or 10 (16-bit ext.)</i><br>Open<br>Gobo 1 - Leaf breakup<br>Gobo 2 - Dot breakup<br>Gobo 3 - Limbo<br>Gobo 4 - Linear 3<br>Gobo 5 - Raytraces<br><i>Continuous gobo rotation: set gobo rotation speed on channel 9 (16-bit) or 10 (16-bit ext.)</i><br>Gobo 1 - Leaf breakup<br>Gobo 2 - Dot breakup<br>Gobo 3 - Limbo<br>Gobo 4 - Linear 3<br>Gobo 5 - Raytraces<br><i>Gobo shake centered on indexed position: set indexed angle on channel 9 (16-bit) or 10 (16-bit ext.). Shake angle increments in following steps: 10°, 15°, 30°, 45°, 60°, 90°, 135°, 180°, 270° and 360°</i><br>Gobo 1 - Leaf breakup, 360° slow → 10° fast<br>Gobo 2 - Dot breakup, 360° slow → 10° fast<br>Gobo 3 - Limbo, 360° slow → 10° fast<br>Gobo 4 - Linear 3, 360° slow → 10° fast<br>Gobo 5 - Raytraces, 360° slow → 10° fast<br><i>Continuous gobo wheel scroll with continuous gobo rotation: set gobo rotation speed on channel 9 (16-bit) or 10 (16-bit extended)</i><br>CW gobo wheel scroll, fast → slow*<br>CCW gobo wheel scroll, slow* → fast<br><i>*If gobo crossfading is enabled in control menu (PERSONALITY → GOBO X-FADE), slow = 5% speed. If gobo crossfading is disabled, slow = 30% speed</i> |
|                   |                      | 0 - 9     | 0 - 4    |  |
|                   |                      | 10 - 14   | 4 - 5    |  |
|                   |                      | 15 - 19   | 5 - 8    |  |
|                   |                      | 20 - 24   | 8 - 10   |  |
|                   |                      | 25 - 29   | 10 - 12  |  |
|                   |                      | 30 - 34   | 12 - 14  |  |
|                   |                      | 35 - 39   | 14 - 16  |  |
|                   |                      | 40 - 44   | 16 - 18  |  |
|                   |                      | 45 - 49   | 18 - 20  |  |
| 50 - 54           | 20 - 22              |           |          |  |
| 55 - 59           | 22 - 24              |           |          |  |
|                   |                      | 60 - 89   | 24 - 34  |  |
|                   |                      | 90 - 119  | 35 - 45  |  |
|                   |                      | 120 - 149 | 46 - 56  |  |
|                   |                      | 150 - 179 | 57 - 67  |  |
|                   |                      | 180 - 209 | 68 - 78  |  |
|                   |                      | 210 - 232 | 79 - 89  |  |
|                   |                      | 233 - 255 | 90 - 100 |  |
| 9                 | 10                   |           |          | <b>Gobo indexing, direction, speed (MSB)</b><br><i>If indexed gobo is selected on channel 8 (16-bit) or 9 (16-bit ext.)</i><br>Gobo indexing, 0 → 395°<br><i>If continuous gobo rotation is selected on channel 8 (16-bit) or 9 (16-bit ext.)</i><br>No gobo rotation<br>CW, fast → slow<br>No gobo rotation<br>CCW, slow → fast<br>No gobo rotation   |
|                   |                      | 0 - 255   | 0 - 100  |  |
|                   |                      | 0 - 2     | 0        |  |
|                   |                      | 3 - 126   | 1 - 50   |  |
|                   |                      | 127 - 129 | 51       |  |
| 130 - 253         | 52 - 99              |           |          |  |
| 254 - 255         | 100                  |           |          |  |
| 10                | 11                   |           |          | <b>Gobo fine indexing or rotation speed (LSB)</b><br><i>If indexed gobo is selected on channel 8 (16-bit) or 9 (16-bit ext.)</i><br>Gobo indexing, fine<br><i>If continuous gobo rotation is selected on channel 8 (16-bit) or 9 (16-bit ext.)</i><br>Gobo rotation speed, fine  |
|                   |                      | 0 - 255   | 0 - 100  |  |
|                   |                      | 0 - 255   | 0 - 100  |  |
| 11                | 12                   | 0 - 255   | 0 - 100  | <b>Framing blade 1, position</b><br>Out → in   |
| 12                | 13                   |           |          | <b>Framing blade 1, angle</b><br>Angle –<br>Parallel<br>Angle +  |
|                   |                      | 0 - 126   | 0 - 49   |  |
|                   |                      | 127 - 128 | 50       |  |
| 129 - 255         | 51 - 100             |           |          |  |
| 13                | 14                   | 0 - 255   | 0 - 100  | <b>Framing blade 2, position</b><br>Out → in   |
| 14                | 15                   |           |          | <b>Framing blade 2, angle</b><br>Angle –<br>Parallel<br>Angle +  |
|                   |                      | 0 - 126   | 0 - 49   |  |
|                   |                      | 127 - 128 | 50       |  |
| 129 - 255         | 51 - 100             |           |          |  |
| 15                | 16                   | 0 - 255   | 0 - 100  | <b>Framing blade 3, position</b><br>Out → in   |



| Basic 16-bit Mode | 16-bit Extended Mode | DMX Value  | Percent   | Function   |
|-------------------|----------------------|--|---|--|
| 16                | 17                   | 0 - 126<br>127 - 128<br>129 - 255  | 0 - 49<br>50<br>51 - 100  | <b>Framing blade 3, angle</b><br>Angle –<br>Parallel<br>Angle +  |
| 17                | 18                   | 0 - 255  | 0 - 100   | <b>Framing blade 4, position</b><br>Out → in   |
| 18                | 19                   | 0 - 126<br>127 - 128<br>129 - 255  | 0 - 49<br>50<br>51 - 100  | <b>Framing blade 4, angle</b><br>Angle –<br>Parallel<br>Angle +  |
| 19                | 20                   | 0 - 199<br>200 - 225<br>226 - 229<br>230 - 255   | 0 - 78<br>79 - 88<br>89 - 90<br>91 - 100  | <b>Frame rotation: indexing or rotation (MSB)</b><br>0 - 395°<br>CW, fast → slow<br>No rotation<br>CCW, slow → fast  |
| 20                | 21                   | 0 - 255  | 0 - 100   | <b>Frame rotation: Fine indexing or rotation speed (LSB)</b>   |
|                   | 22                   | 0 - 19<br>20 - 39<br>40 - 59<br>60 - 79<br>80 - 84<br>85 - 89<br>90 - 94<br>95 - 99<br>100 - 104<br>105 - 109<br>110 - 114<br>115 - 119<br>120 - 124<br>125 - 129<br>130 - 134<br>135 - 139<br>140 - 144<br>145 - 149<br>150 - 255 | 0 - 7<br>7 - 16<br>17 - 24<br>25 - 31<br>31 - 33<br>33 - 34<br>34 - 35<br>36 - 37<br>38 - 39<br>40 - 41<br>42 - 43<br>44 - 45<br>46 - 47<br>48 - 49<br>50 - 51<br>52 - 53<br>54 - 55<br>56 - 57<br>58 - 100 | <b>Frame shape macros</b><br>No macro applied, individual framing blade control channels active<br>Macro 1: Vertical Bar<br>Macro 2: Horizontal Bar<br>Macro 3: Square<br>Macro 4: Parallelogram Right<br>Macro 5: Parallelogram Left<br>Macro 6: Trapezoid Up<br>Macro 7: Trapezoid Left<br>Macro 8: Trapezoid Down<br>Macro 9: Trapezoid Right<br>Macro 10: Equilateral Triangle Up<br>Macro 11: Equilateral Triangle Left<br>Macro 12: Equilateral Triangle Down<br>Macro 13: Equilateral Triangle Right<br>Macro 14: Right-angled Triangle Down Left<br>Macro 15: Right-angled Triangle Down Right<br>Macro 16: Right-angled Triangle Up Right<br>Macro 17: Right-angled Triangle Up Left<br>Reserved for future use |
|                   | 23                   | 0 - 255  | 0 - 100   | <b>Frame shape macro size</b><br>Small → large   |
|                   | 24                   | 0 - 2<br>3 - 5<br>6 - 8<br>9 - 11<br>↓<br>165 - 167<br>168<br>169<br>↓<br>216<br>217<br>218<br>↓<br>228<br>229<br>230<br>↓<br>252<br>253 - 255   | 0<br>1<br>2<br>3<br>↓<br>65<br>66<br>66<br>↓<br>85<br>85<br>85<br>↓<br>89<br>90<br>90<br>↓<br>99<br>100   | <b>Frame shape macro crossfade timing</b><br>Follow console timing<br>0.2 seconds<br>0.4 seconds<br>0.4 seconds<br><i>0.2 second intervals up to 10.8 seconds</i><br>11 seconds<br>12 seconds<br>13 seconds<br><i>1 second intervals up to 60 seconds</i><br>60 seconds<br>65 seconds<br>70 seconds<br><i>5 second intervals up to 120</i><br>120 seconds<br>130 seconds<br>140 seconds<br><i>10 second intervals up to 360</i><br>360 seconds<br>Follow console timing  |



| Basic 16-bit Mode | 16-bit Extended Mode | DMX Value | Percent  | Function  |
|-------------------|----------------------|-----------|----------|---|
| 21                | 25                   | 0 - 18    | 0 - 6    | <b>Color/CMY macros, gobo crossfading speed</b><br><i>No function</i> (Note: this value is used for setting calibration values on channel 34/40)  |
|                   |                      | 19 - 57   | 7 - 22   | Color wheel: fast narrow shake → slow wide shake, around currently selected color   |
|                   |                      | 58 - 83   | 23 - 32  | <i>Random CMY: set min./ max. CMY range limits on channels 3 - 5 (16-bit) or 4 - 6 (16-bit ext.)</i>  |
|                   |                      | 84 - 109  | 33 - 42  | Fast  |
|                   |                      | 110 - 135 | 43 - 52  | Medium  |
|                   |                      | 136 - 207 | 53 - 82  | Slow  |
|                   |                      | 208 - 255 | 83 - 100 | <i>If enabled in PERSONALITY → GOBO X-FADE control menu:</i><br>Gobo crossfading speed slow → fast<br><i>No function</i>  |
| 22                | 26                   | 0 - 5     | 0 - 2    | <b>Gobo animation wheel: position and function</b><br>Open  |
|                   |                      | 6 - 10    | 2 - 4    | Horizontal indexed position: set indexing on ch. 23 (16-bit) or 27 (16-bit ext.)  |
|                   |                      | 11 - 15   | 4 - 6    | Vertical indexed position: set indexing on ch. 23 (16-bit) or 27 (16-bit ext.)  |
|                   |                      | 16 - 20   | 6 - 8    | Horizontal position, continuous rotation: set direction & speed on ch. 23 (16-bit) or 27 (16-bit ext.)  |
|                   |                      | 21 - 25   | 8 - 10   | Vertical position, continuous rotation: set direction & speed on ch. 23 (16-bit) or 27 (16-bit ext.)  |
|                   |                      | 26 - 110  | 10 - 43  | Angled position, vertical → horizontal, continuous rotation: set direction & speed on ch. 23 (16-bit) or 27 (16-bit ext.)   |
|                   |                      | 111 - 195 | 44 - 76  | Angled position, horizontal → vertical: set indexing on ch. 23 (16-bit) or 27 (16-bit ext.)   |
|                   |                      | 196 - 255 | 77 - 100 | Angled position, vertical → open: set indexing on ch. 23 (16-bit) or 27 (16-bit ext.)   |
| 23                | 27                   | 0 - 255   | 0 - 100  | <b>Gobo animation wheel: indexed angled position, rotation direction and speed</b><br><i>If indexed angled position is selected on channel 22 (16-bit) or 26 (16-bit ext.):</i><br>Indexed angle, 0° → 395°                           |
|                   |                      | 0 - 2     | 0        | <i>If continuous rotation is selected on channel 22 (16-bit) or 26 (16-bit ext.):</i><br>No animation wheel rotation  |
|                   |                      | 3 - 126   | 1 - 50   | CW, fast → slow   |
|                   |                      | 127 - 129 | 51       | No animation wheel rotation   |
|                   |                      | 130 - 253 | 52 - 99  | CCW, slow → fast  |
|                   |                      | 254 - 255 | 100      | No animation wheel rotation   |
| 24                | 28                   | 0 - 19    | 0 - 7    | <b>Beam effect (frost or prism depending on which is installed)</b><br>Beam effect off  |
|                   |                      | 20 - 39   | 7 - 16   | Beam effect 1 indexing: set angle on ch. 25 (16-bit) or 29 (16-bit ext.)  |
|                   |                      | 40 - 59   | 17 - 24  | Beam effect 1 rotating: set direction and speed on ch. 25 (16-bit) or 29 (16-bit ext.)  |
|                   |                      | 60 - 79   | 25 - 31  | Beam effect off   |
|                   |                      | 80 - 255  | 32 - 100 | <i>No function</i>  |
| 25                | 29                   | 0 - 255   | 0 - 100  | <b>Beam effect (frost or prism depending on which is installed) indexing angle, rotation direction and speed</b><br><i>If beam effect indexing is selected on channel 24 (16-bit) or 28 (16-bit ext.):</i><br>Indexed angle 0° - 395° |
|                   |                      | 0 - 2     | 0        | <i>If beam effect rotation is selected on channel 24 (16-bit) or 28 (16-bit ext.):</i><br>No beam effect rotation   |
|                   |                      | 3 - 126   | 1 - 50   | CW, fast → slow   |
|                   |                      | 127 - 129 | 51       | No beam effect rotation   |
|                   |                      | 130 - 253 | 52 - 99  | CCW, slow → fast  |
|                   |                      | 254 - 255 | 100      | No beam effect rotation   |
| 26                | 30                   | 0 - 199   | 0 - 77   | <b>Iris</b><br>Open → closed  |
|                   |                      | 200 - 215 | 78 - 84  | Closed  |
|                   |                      | 216 - 229 | 85 - 89  | Opening pulse, fast → slow  |
|                   |                      | 230 - 243 | 90 - 94  | Closing pulse, fast → slow  |
|                   |                      | 244 - 249 | 95 - 97  | Random opening pulse, fast → slow   |
|                   |                      | 250 - 255 | 98 - 100 | Random closing pulse, fast → slow   |
| 27                | 31                   | 0 - 255   | 0 - 100  | <b>Focus (MSB)</b><br>Infinity → near   |





Fondazione  
ARENA DI VERONA\*

| <b>Basic<br/>16-bit<br/>Mode</b> | <b>16-bit<br/>Extended<br/>Mode</b> | <b>DMX Value</b> | <b>Percent</b> | <b>Function</b>                                   |
|----------------------------------|-------------------------------------|------------------|----------------|---|
| -                                | <b>32</b>                           | 0 - 255          | 0 - 100        | <b>Focus, fine (LSB)</b>                          |
| <b>28</b>                        | <b>33</b>                           | 0 - 255          | 0 - 100        | <b>Zoom (MSB)</b><br>Flood → spot                 |
| -                                | <b>34</b>                           | 0 - 255          | 0 - 100        | <b>Zoom, fine (LSB)</b>                           |
| <b>29</b>                        | <b>35</b>                           | 0 - 255          | 0 - 100        | <b>Pan (MSB)</b><br>Left → right (128 = neutral)  |
| <b>30</b>                        | <b>36</b>                           | 0 - 255          | 0 - 100        | <b>Pan, fine (LSB)</b>                            |
| <b>31</b>                        | <b>37</b>                           | 0 - 255          | 0 - 100        | <b>Tilt (MSB)</b><br>Left → right (128 = neutral) |
| <b>32</b>                        | <b>38</b>                           | 0 - 255          | 0 - 100        | <b>Tilt, fine (LSB)</b>                           |



| Basic<br>16-bit<br>Mode | 16-bit<br>Extended<br>Mode | DMX Value                                    | Percent | Function  |
|-------------------------|----------------------------|--|---------|---|
| <b>33</b>               | <b>39</b>                  | 0 - 9  | 0 - 1   | <b>Fixture control/settings</b>   |
|                         |                            | 10 - 14                                      | 2 - 3   | No function   |
|                         |                            | 15 - 19                                      | 4 - 5   | Reset entire fixture <sup>(1)</sup>   |
|                         |                            | 20 - 24                                      | 6 - 7   | Reset dimmer and shutter only <sup>(1)</sup>  |
|                         |                            | 25 - 29                                      | 8 - 9   | Reset CMYC and color wheel only <sup>(1)</sup>  |
|                         |                            | 30 - 34                                      | 10 - 11 | Reset effects module (gobo wheel, framing, gobo animation, iris, frost) only <sup>(1)</sup>                           |
|                         |                            | 35 - 39                                      | 12 - 13 | Reset zoom and focus only <sup>(1)</sup>  |
|                         |                            | 40 - 44                                      | 14 - 15 | Reset pan and tilt only <sup>(1)</sup>  |
|                         |                            | 45 - 49                                      | 16 - 17 | No function   |
|                         |                            | 50 - 54                                      | 18 - 19 | Lamp on   |
|                         |                            | 55 - 59                                      | 20 - 21 | Lamp off <sup>(1, 2)</sup>  |
|                         |                            | 60 - 64                                      | 22 - 23 | No function (Note: this value is used for managing pan/tilt limits and storing calibration values on channel 34/40)   |
|                         |                            | 65 - 69                                      | 24 - 25 | Dimmer curve = Optically linear (menu override, setting unaffected by power off/on) <sup>(2)</sup>                    |
|                         |                            | 70 - 74                                      | 26 - 27 | Dimmer curve = Square law (menu override, factory default setting, setting unaffected by power off/on) <sup>(2)</sup> |
|                         |                            | 75 - 79                                      | 28 - 29 | Dimmer curve = Inverse square law (menu override, setting unaffected by power off/on) <sup>(2)</sup>                  |
|                         |                            | 80 - 84                                      | 30 - 31 | Dimmer curve = S-curve (menu override, setting unaffected by power off/on) <sup>(2)</sup>                             |
|                         |                            | 85 - 89                                      | 32 - 33 | No function   |
|                         |                            | 90 - 94                                      | 34 - 35 | Pan & tilt speed = Normal (menu override - Setting returns to MENU setting after power on/off) <sup>(2)</sup>         |
|                         |                            | 95 - 99                                      | 36 - 37 | Pan & tilt speed = Fast (menu override - Setting returns to MENU setting after power on/off) <sup>(2)</sup>           |
|                         |                            | 100 - 139                                    | 38 - 53 | Pan & tilt speed = Slow (menu override - Setting returns to MENU setting after power on/off) <sup>(2)</sup>           |
|                         |                            | 140 - 144                                    | 54 - 55 | No function   |
|                         |                            | 145 - 149                                    | 56 - 57 | Parameter shortcuts = ON (menu override, setting stays at factory default ON at power off/on) <sup>(2)</sup>          |
|                         |                            | 150 - 154                                    | 58 - 59 | Parameter shortcuts = OFF (menu override, setting returns to factory default ON at power off/on) <sup>(2)</sup>       |
|                         |                            | 155 - 159                                    | 60 - 61 | No function   |
|                         |                            | 160 - 164                                    | 62 - 63 | Disable zoom/focus linking <sup>(2)</sup>   |
|                         |                            | 165 - 169                                    | 64 - 65 | Enable zoom/focus linking, near distance <sup>(2)</sup>   |
|                         |                            | 170 - 174                                    | 66 - 67 | Enable zoom/focus linking, medium distance (factory default setting) <sup>(2)</sup>                                   |
|                         |                            | 175 - 199                                    | 68 - 77 | Enable zoom/focus linking, far distance <sup>(2)</sup>  |
|                         |                            | 200 - 204                                    | 78 - 79 | No function   |
|                         |                            | 205 - 209                                    | 80 - 81 | Ballast output full, set to 1500 W  |
|                         |                            | 210 - 214                                    | 82 - 83 | Ballast output reduced, output set to 1200 W  |
|                         |                            | 215 - 219                                    | 84 - 85 | Ballast output reduced, output set to 1100 W  |
|                         |                            | 220 - 224                                    | 86 - 87 | Ballast output reduced, output set to 1000 W  |
| 225 - 239               | 88 - 93                    | Ballast output reduced, output set to 900 W  |         |   |
| 240 - 244               | 94 - 95                    | No function                                  |         |   |
| 245 - 249               | 96 - 97                    | Illuminate display on fixture <sup>(2)</sup> |         |   |
| 250 - 255               | 98 - 100                   | No function                                  |         |   |
|                         |                            |  |         | Trigger event log (inserts new dynamic content into current report)   |

<sup>(1)</sup> If DMX Reset or DMX Lamp Off are disabled in the control menus, a full or partial reset command or a lamp off command can be executed only if:  
Slot 1 is selected on the color wheel (DMX value 20 on channel 7 in 16-bit or 8 in 16-bit ext.), and  
The beam effect (frost filter or prism) is on (DMX value 20-59 on channel 24 in 16-bit or 28 in 16-bit ext.), and  
Open gobo is selected on the gobo wheel (DMX value 0 on channel 8 in 16-bit or 9 in 16-bit ext.)

<sup>(2)</sup> Value must be held for 5 seconds to activate



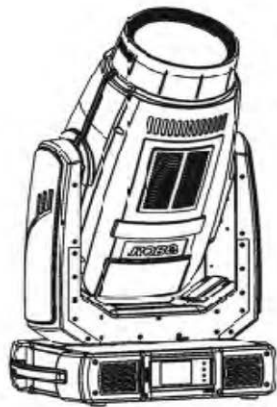
Fondazione  
ARENA DI VERONA

## BMFL WASH BEAM 1700w

# ROBE

## **ROBIN<sup>®</sup> BMFL** **WashBeam**

## **ROBIN<sup>®</sup> BMFL** **WashBeam Wireless DMX** **CRMX<sup>™</sup>**



 **ROBIN<sup>®</sup>**  
Innovative Technology

### USER MANUAL

Version 1.7

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