# UML Family 46-inch High Performance HD LED monitor

www.boschsecurity.com





The Bosch UML-463-90 High Performance LED monitor is a 1080p Full HD resolution color monitor ideal for use with digital video recorders (DVRs), and with PC applications. The monitor features a color LCD flatscreen panel with a 46-inch viewable picture area. The monitor features a wide range of horizontal and vertical viewing angles that provide comfortable, clear viewing – whether you mount it to a wall, ceiling or on a desktop.

### Functions

### **Excellent image quality**

The Bosch High Performance HD LED monitors automatically adapt to the input resolution of the incoming video signal, and support up to 1920 x 1080 resolution (Full HD). The monitors' analog VGA input easily accommodates the widespread use of PCs in today's security surveillance systems. Their high contrast ratio (3500:1) and a high brightness setting offers excellent color accuracy and imaging for easier viewing and interpretation of images. The panel can refresh in as little as 6.5 milliseconds, so you get crisp, clear images with less smearing - and less image "ghosting" in fast-motion video.



- ▶ Full HD 1920 x 1080 resolution
- Precise color reproduction
- HDMI, DVI, VGA, S-Video inputs
- Super-slim bezel (5 mm width L+R) for seamless tiled wall mounting
- High contrast ratio of 3500:1

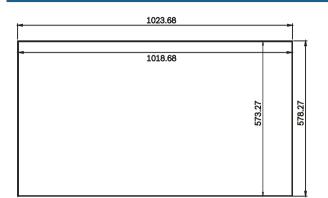
### **Tiled wall mounting**

The super-thin bezel screen surround means the wall mounted monitors can be precisely arranged in a tiled configuration. Especially suited for control room environment with multiple camera connections.

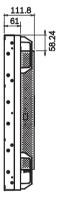
| Certifications and approvals        |  |  |
|-------------------------------------|--|--|
| Region                              | Safety Certification                             |  |
| Canada                              | cUL  |  |
| Europe                              | EN60950, CE Declaration of Conformity, CB scheme |  |
| USA                                 | UL60950  |  |
| Electromagnetic Compatibility (EMC) |  |  |
| Emission                            | EN55022:2010 class B, FCC part 15 class B        |  |
| Immunity                            | EN55024:2010, EN50130-4:2011                     |  |
| Environmental                       |  |  |
| Vibration<br>Energy Star 6.0        |  |  |

# 2 | UML Family 46-inch High Performance HD LED monitor

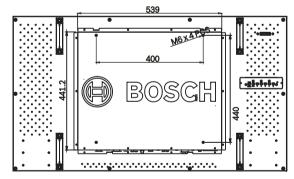
| Region                           | Certification |
|----------------------------------|---------------|
| Europe                           | CE            |
| Installation/configuration notes |               |



UML-463-90: Front View



UML-463-90: Side View



UML-463-90: Back View

### **Parts included**

### Quant. Component

| 1 | Bosch Full HD Color LED Flat Panel Monitor   |
|---|--|
| 2 | Power Cords, 3-wire with grounded plug 1.8 m (6 ft) long:<br>one with a U.S plug type and one with a European<br>Continental plug type |
| 1 | 1 DVI-D to DVI-D cable, 1.8 m (6 ft)   |

1 1 VGA to VGA (D-Sub), cable, 1.8 m (6 ft)

Remote control
AAA batteries for remote control
Installation Manual (English)
CD-ROM with multi-language Installation Manual

# Technical specifications

## Electrical

| Rated Voltage          | 120/230 VAC, 50/60 Hz                       |
|------------------------|---|
| Voltage Range          | 100-240 VAC, 50/60 Hz                       |
| Frequency              | Horizontal: 60–73 KHz<br>Vertical: 47–63 Hz |
| Power at Rated Voltage | On = 149 W<br>Active Off = 0.5 W            |

# Video

| Sync Format                    | PAL/NTSC automatic detection                    |
|--------------------------------|---|
| LCD Panel                      | LED backlight                                   |
| Viewable Picture Area          | 46 in.  |
| Active Display Area<br>(H x V) | 1018.08 x 572.67 mm<br>(40.08 x 22.55 in.)      |
| Pixel Pitch<br>(H x V):        | 0.53025 x 0.53025 mm<br>(0.02088 x 0.02088 in.) |
| Resolution <sup>1</sup>        | 1920 x 1080                                     |
| Aspect Ratio                   | 16:9  |
| Display Colors                 | 1073.7 million                                  |
| Response Time                  | 6.5 ms (typical)                                |
| Backlight                      | 50,000 hours                                    |
|                                |   |

1. Pixel Policy: Bosch monitors follow the ISO 13406-2 Class II standard.

# **LCD Panel Optical Characteristics**

| Luminance      | 450 cd/m² (typical)                 |
|----------------|-------------------------------------|
| Contrast Ratio | 3500:1 (typical)                    |
| Viewing Angle  | Horizontal/Vertical: 178° (typical) |

# Video Input

| Composite<br>Video (CVBS) | 1.0 Vp-p (0.5–1.5 Vp-p), automatic switching from<br>75 Ohm unbalanced termination to Hi-Z with passive<br>loop-through operation |
|---------------------------|---|
| Y/C (S-video)             | 0.7 Vp-p (Y-signal), 0.3 Vp-p (C-signal), 75 Ohm termination  |
| Component                 | Y, Pb, Pr   |
| Digital Inputs            | DVI D (1 x) and HDMI (2 x)  |
| VGA (RGB<br>PC)           | 0.7 Vp-p (0.5–1 Vrms)   |
| Audio Input               | 2.0 V line level, mono  |

# 3 | UML Family 46-inch High Performance HD LED monitor

| RGB and DVI             | HDMI                      |
|-------------------------|---------------------------|
| 640 x 480 (60/72/75 Hz) | 640 x 480 (60/72/75 Hz)   |
| 720 x 400 (70 Hz)       | 720 x 400 (70 Hz)         |
| 800 x 600 (60/75 Hz)    | 800 x 600 (60/75 Hz)      |
| 1024 x 768 (60/75 Hz)   | 1024 x 768 (60/75 Hz)     |
| 1280 x 768 (60 Hz)      | 1280 x 768 (60 Hz)        |
| 1280 x 960 (60 Hz)      | 1280 x 960 (60 Hz)        |
| 1280 x 1024 (60 Hz)     | 1280 x 1024 (60 Hz)       |
| 1360 x 768 (60 Hz)      | 1360 x 768 (60 Hz)        |
| 1366 x 768 (60 Hz)      | 1366 x 768 (60 Hz)        |
| 1400 x 1050 (60 Hz)     | 1400 x 1050 (60 Hz)       |
| 1600 x 1200 (60 Hz)     | 1600 x 1200 (60 Hz)       |
| 1680 x 1050 (60 Hz)     | 1680 x 1050 (60 Hz)       |
| 1920 x 1080 (60 Hz)     | 1920 x 1080 (60 Hz)       |
|                         | 480i (60 Hz)              |
|                         | 480p (60 Hz)              |
|                         | 576i (50 Hz)              |
|                         | 576p (50 Hz)              |
|                         | 720p (25/3050/60 Hz)      |
|                         | 1080i (50/60 Hz)          |
|                         | 1080p (24/25/30/50/60 Hz) |
|                         | 1080p (24/25 Psf)         |

### Controls

| Input                    |  |
|--------------------------|--|
| Rear Control Panel       | Push-buttons   |
| Remote control           | Push-buttons   |
| Video Source             | Selects: Component Video, S-video, VGA, HDMI,<br>DVI-D   |
| Menu                     | Selects on-screen display (OSD), up cursor,<br>down cursor/auto adjust, left cursor, right<br>cursor |
| Power                    | On/Off   |
| Control Panel<br>Lockout | Multiple push-button combination   |

# **On-screen** Display

| Vid | eo N | lode |
|-----|------|------|
|-----|------|------|

# Indicators (on rear)

| LED | Power On (green)<br>Power Off, Standby (red) |
|-----|--|
|     | · · · · · · · · · · · · · · · · · · ·        |

Input Source, Screen, OSD, Utility

| Nideol (AV1)Composite vice (2) BNC (1 in, 1 out)DigitalFwo (2) (1 DVI-D out) (1 out)IRNov (2) (1 in, 1 out)Display portOne (1 inHDMITwo (2) inGomponentOne (1): T RGB 15- pin D-sub in, 1 RGB 15- pin D-sub out)YC (S vide)One (1): NPb, PrYC (S vide)One (1): MA-pin (1 in)AudioNaudio In: RCA (right/left)<br>shadio Out: RCA (right/left)Rower OutputBlackBlackShadio Out: RCA (right/left)<br>shadio Out   | Connectors            |   |
|--|-----------------------|---|
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| Display portOne (1) inHDMITwo (2) inHDMITwo (2) inVGAOne (1): 1 RGB 15-pin D-sub in, 1 RGB 15-pin<br>D-sub outComponentOne (1) W, Pb, PrY/C (S-video)One (1) min-DIN, 4-pin (1 in)Audio1 Audio In: RCA (right/left)<br>1 Audio Out: RCA (right/left)<br>1 Speaker Out (right/left)<br>1 Speaker Out (right/left)RS-232Two (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output100 - 240 VACFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Mith Packaging1023.68 x 578.27 x 111.8 mm<br>(46.85 x 30.08 x 11.42 in.)Mith Packaging100 x 54 x 290 mm<br>(de.85 x 30.08 x 11.42 in.)Monitor0 kg (66.14 lb)Shipping Weight0 kg (66.14 lb)Coperating<br>Temperature0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | Digital               | Two (2) (1 DVI-D in, 1 DVI-D out)                       |
| HDMITwo (2) inHDMITwo (2) inVGAOne (1): 1 RGB 15-pin D-sub in, 1 RGB 15-pin<br>D-sub outComponentOne (1) min-DIN, 4-pin (1 in)Y/C (S-video)One (1) min-DIN, 4-pin (1 in)Audio1 Audio In: RCA (right/left)<br>1 Audio Out: RCA (right/left)<br>1 Audio Out: RCA (right/left)<br>1 Speaker Out (right/left)RS-232Two (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower OutputSECCCabinet MaterialSECCFinishBlackMounting<br>ComplianceWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance002 3.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1002 3.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging190 x 754 x 290 mm<br>(a6.85 x 30.08 x 11.42 in.)Monitor Weight25 kg (55.12 lb)Shipping Weight0x (66.14 lb)Furieronmental0°C to +50°C (32°F to 122°F)Perating<br>Temperature0°C to +50°C (32°F to 122°F)  | IR                    | Two (2) (1 in, 1 out)                                   |
| VGAOne (1): 1 RGB 15-pin D-sub in, 1 RGB 15-pin<br>D-sub outComponentOne (1): Y, Pb, PrY/C (S-video)One (1) mini-DIN, 4-pin (1 in)Y/C (S-video)1 Audio In: RCA (right/left)<br>1 Audio In: phono jack<br>1 Audio Dut: RCA (right/left)<br>1 Speaker Out (right/left)RS-232Iwo (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output100 - 240 VACPower OutputSECCImage: Seccee Second Seco | Display port          | One (1) in  |
| InstantD-sub outComponentOne (1): Y, Pb, PrY/C (S-video)One (1) mini-DIN, 4-pin (1 in)Audio1 Audio In: RCA (right/left)<br>1 Audio In: phono jack<br>1 Audio Un: PROA (right/left)<br>1 Speaker Out (right/left)<br>1 Speaker Out (right/left)RS-232Two (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output100 - 240 VACPower Output100 - 240 VACPower OutputBlackMountSECCSECCSeccFinishBlackMountVall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)<br>(20°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | HDMI                  | Two (2) in  |
| Y/C (S-video)One (1) mini-DIN, 4-pin (1 in)Y/C (S-video)I Audio In: RCA (right/left)<br>1 Audio In: phono jack<br>1 Audio In: phono jack<br>1 Audio Out: RCA (right/left)<br>1 Speaker Out (right/left)RS-232Iwo (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output5ECCCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)<br>Desk mount (optional)VESA Mounting<br>Compliance1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Monitor Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)<br>(20°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | VGA                   |   |
| Audio1 Audio In: RCA (right/left)<br>1 Audio In: phono jack<br>1 Audio Out: RCA (right/left)<br>1 Speaker Out (right/left)<br>1 Speaker Out (right/left)RS-232Two (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output00 - 240 VACPower OutputSECCCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(potional)<br>Desk mount (optional)VESA Mounting<br>Compliance00 x 400 mm (15.7 x 15.7 in.)Monitor109 x 754 x 290 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor25 kg (55.12 lb)Monitor Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)<br>Corgerating<br>FemperatureOperating<br>remperature0°C to +50°C (32°F to 122°F)  | Component             | One (1): Y, Pb, Pr                                      |
| 1 Audio In: phono jack<br>1 Audio Out: RCA (right/left)<br>1 Speaker Out (right/left)<br>1 Speaker Out (right/left)RS-232Two (2) (1 in for firmware update, 1 out for<br>firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output00 - 240 VACCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x)1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Monitor Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Operating<br>remperature0°C to +50°C (32°F to 122°F)Storage<br>remperature0°C to +50°C (32°F to 122°F)  | Y/C (S-video)         | One (1) mini-DIN, 4-pin (1 in)                          |
| firmware update)Power Input100 - 240 VACPower Output100 - 240 VACPower Output100 - 240 VACMechanicalSECCCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (Wx Hx)Vest and the standard bracket (0,00000000000000000000000000000000000   | Audio                 | 1 Audio In: phono jack<br>1 Audio Out: RCA (right/left) |
| Power Output100 - 240 VACPower Output100 - 240 VACMechanicalSECCCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)<br>Desk mount (optional)VESA Mounting<br>  | RS-232                |   |
| MechanicalCabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x D1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)<br>Comperating<br>TemperatureOperating<br>Temperature0°C to +50°C (32°F to 122°F)  | Power Input           | 100 – 240 VAC   |
| Cabinet MaterialSECCFinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x)400 x 400 mm (15.7 x 15.7 in.)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Monitor Weight30 kg (66.14 lb)Shipping Weight30 kg (66.14 lb)Operating<br>Temperature0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | Power Output          | 100 – 240 VAC   |
| FinishBlackMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x )1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Monitor Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)Operating<br>remperature0°C to +50°C (32°F to 122°F)  | Mechanical            |   |
| NumberProvide a stateMountWall mounting compatible with standard bracket<br>(optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x D)1023.68 x 578.27 x 11.8 mm<br>(40.30 x 22.77 x 4.4 in.)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Monitor Weight30 kg (66.14 lb)Shipping Weight30 kg (66.14 lb)Operating<br>Temperature0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | Cabinet Material      | SECC  |
| (optional)<br>Desk mount (optional)VESA Mounting<br>Compliance400 x 400 mm (15.7 x 15.7 in.)Dimensions (W x H x D)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Monitor Weight30 kg (66.14 lb)Shipping Weight0°C to +50°C (32°F to 122°F)Operating<br>Temperature0°C to +50°C (32°F to 122°F)   | Finish                | Black   |
| ComplianceDimensions (W x H x D)Monitor1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)EnvironmentalO°C to +50°C (32°F to 122°F)<br>Corage<br>TemperatureStorage<br>Temperature0°C to +50°C (32°F to 122°F)   | Mount                 | (optional)  |
| Monitor   1023.68 x 578.27 x 111.8 mm<br>(40.30 x 22.77 x 4.4 in.)     With Packaging   1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)     Weight   25 kg (55.12 lb)     Monitor Weight   25 kg (55.12 lb)     Shipping Weight   30 kg (66.14 lb)     Environmental   0°C to +50°C (32°F to 122°F)     Storage<br>Temperature   0°C to +50°C (32°F to 122°F)   |                       | 400 x 400 mm (15.7 x 15.7 in.)                          |
| (40.30 x 22.77 x 4.4 in.)With Packaging1190 x 754 x 290 mm<br>(46.85 x 30.08 x 11.42 in.)WeightMonitor Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)EnvironmentalOperating<br>Temperature0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | Dimensions (W x H x D | )   |
| Weight(46.85 x 30.08 x 11.42 in.)Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)Environmental0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)  | Monitor               |   |
| Monitor Weight25 kg (55.12 lb)Shipping Weight30 kg (66.14 lb)EnvironmentalOperating<br>Temperature0°C to +50°C (32°F to 122°F)Storage<br>Temperature0°C to +50°C (32°F to 122°F)   | With Packaging        |   |
| Shipping Weight 30 kg (66.14 lb)   Environmental   Operating<br>Temperature 0°C to +50°C (32°F to 122°F)   Storage<br>Temperature 0°C to +50°C (32°F to 122°F)   | Weight                |   |
| Environmental     Operating<br>Temperature   0°C to +50°C (32°F to 122°F)     Storage<br>Temperature   0°C to +50°C (32°F to 122°F)  | Monitor Weight        | 25 kg (55.12 lb)  |
| Operating<br>Temperature 0°C to +50°C (32°F to 122°F)   Storage<br>Temperature 0°C to +50°C (32°F to 122°F)  | Shipping Weight       | 30 kg (66.14 lb)  |
| Temperature   Storage   Temperature     0°C to +50°C (32°F to 122°F)   | Environmental         |   |
| Temperature  |                       | 0°C to +50°C (32°F to 122°F)                            |
| Humidity 0% to 90% Relative  |                       | 0°C to +50°C (32°F to 122°F)                            |
|  | Humidity              | 0% to 90% Relative                                      |

### **Ordering information**

UML-463-90 46-inch High Performance HD LED Monitor High-performance HD LED 46-inch monitor with superslim bezel (5 mm width L+R). 1920x1080p; 450 cd/m2; audio; BNC/HDMI/Component/DVI-D/VGA inputs; backlight 50,000 hours; viewing angle (HxW) 178x178; contrast 3500:1 Order number UML-463-90

### Accessories

UMM-LED46-SD Desktop Stand Desktop stand for monitor Order number UMM-LED46-SD

### Represented by:

#### Americas:

Bosch Security Systems, Inc. 130 Perinton Parkway Fairport, New York, 14450, USA Phone: +1 800 289 0096 Fax: +1 585 223 9180 security.sales@us.bosch.com www.boschsecurity.us Europe, Middle East, Africa: Bosch Security Systems B.V. P.O. Box 80002

P.O. Box 80002 5617 BA Eindhoven, The Netherlands Phone: + 31 40 2577 284 Fax: +31 40 2577 330 emea.securitysystems@bosch.com www.boschsecurity.com

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Asia-Pacific: Robert Bosch (SEA) Pte Ltd, Security

Systems 11 Bishan Street 21 Singapore 573943 Phone: +65 6571 2808 Fax: +65 6571 2808 Fax: +65 6571 2699 apr.securitysstems@bosch.com www.boschsecurity.asia

### China:

Bosch (Shanghai) Security Systems Ltd. 201 Building, No. 333 Fuquan Road North IBP Changning District, Shanghai 200335 China Phone +86 21 22181111 Fax: +86 21 22182398 www.boschsecurity.com.cn

### America Latina:

Robert Bosch Ltda Security Systems Division Via Anhanguera, Km 98 CEP 13065-900 Campinas, Sao Paulo, Brazil Phone: +55 19 2103 2860 Fax: +55 19 2103 2862 Iatam.boschsecurity@bosch.com www.boschsecurity@com