

# UML Series 17-, 19-, 20-inch High-performance LCD Flat Panel Monitors

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**BOSCH**

Invented for life



- ▶ High-resolution—500 TVL, 1600 x 1200 (UML-202-90) or 1280 x 1024 (UML-192-90 and UML-172-90)—image
- ▶ Picture-in-Picture or split screen function for viewing video on the PC screen
- ▶ Analog RGB, digital DVI, and digital HDMI inputs
- ▶ Two (2) composite BNC inputs and loop-through outputs
- ▶ Y/C (S-video) and loop-through video and audio inputs

The Bosch family of high-performance LCD monitors are high-resolution (SXGA / UXGA), high-performance liquid crystal display (LCD) video display monitors. Available in an ergonomic and aesthetically pleasing design, these state-of-the-art monitors include a color thin film transistor (TFT) active matrix LCD panel. Designed for the professional CCTV security marketplace, the Bosch High-performance LCD monitors include two looping composite video inputs, two looping audio inputs and one looping Y/C input.

## Functions

### Flexible interface

These monitors include an analog RGB mode, a Digital DVI input, and an HDMI (high definition multimedia) input to accommodate the increasing use of PCs and digital video devices in security applications. To enhance the multi-input capability, the monitor includes a “picture-in-picture” function. This also enables any of the composite video or Y/C input to be inserted into the RGB/DVI/HDMI input display.

### Features designed for the professional

A security officer can make standard adjustments to monitor display parameters with user-friendly choices displayed using on-screen menus (available in several languages) and front panel controls. For additional security, the monitor includes a front panel lockout feature that disables the front panel control buttons. Long-life fluorescent backlights maintain the monitor’s brightness level over time, because the LCD monitor design avoids the brightness degradation experienced with aging CRT-type monitors. This energy-saving technology also provides a sharp display, free of the annoying flicker prevalent in traditional CRT monitors, allowing longer use of your LCD monitor with little or no eyestrain. The monitors also feature an alarm trigger input providing the ability to switch input sources automatically. You can program the monitor to switch input sources and to sound a buzzer when it receives an alarm signal. In addition, the AutoSwitching feature lets the monitor cycle through selected video inputs.

**Versatile design**

The versatile design allows these monitors to accept NTSC and PAL signal formats automatically as well as power supply voltages from 90 to 256 VAC. Compact styling makes the Bosch High Performance line the color monitors of choice for large-screen, space-constrained applications. With a wide range viewing angle, these LCD monitors may be easily viewed whether they are placed on a desktop, mounted to a VESA standard wall mount, or rack mounted in a standard EIA rack.

**Certifications and approvals**

Electromagnetic Compatibility (EMC)	Complies with FCC Part 15, ICES-003, and CE regulations
Product Safety	Complies with CE regulations, UL, CSA, EN, and IEC standards

Region	Certification
Europe	CE

**Technical specifications**

**Electrical**

	UML-172-90	UML-192-90	UML-202-90
Rated Voltage	110/230 VAC, 50/60 Hz	110/230 VAC, 50/60 Hz	110/230 VAC, 50/60 Hz
Voltage Range	90-256 VAC	90-256 VAC	90-256 VAC
Power at Rated Voltage	<45 W	<50 W	70 W
Sync Format	PAL/NTSC	PAL/NTSC	PAL/NTSC
LCD Panel	TFT LCD	TFT LCD	TFT LCD
Screen Size (H x V)	338 x 270 mm (13.3 x 10.6 in.)	376 x 301 mm (14.8 x 11.9 in.)	408 x 306 mm (16 x 12 in.)
Viewable Picture Area	17 in. (432 mm) measured diagonally	19 in. (483 mm) measured diagonally	20.1 in. (511 mm) measured diagonally
Pixel Pitch: (H x V)	0.264 x 0.264 mm (0.01 x 0.01 in.)	0.294 x 0.294 mm (0.01 x 0.01 in.)	0.255 x 0.255 mm (0.01 x 0.01 in.)
Resolution	1280 x 1024 pixels, 500 TV lines typical	1280 x 1024 pixels, 500 TV lines typical	1600 x 1200 pixels, 500 TV lines typical
Aspect Ratio	5:4	5:4	4:3
Display Colors	16.7 million colors	16.7 million colors	16.7 million colors

Response Time	< 5 ms (typical)	< 5 ms (typical)	< 16 ms (typical)
Backlight	Two (2) cold cathode fluorescent tubes, rated life 50,000 hours, at 50% brightness	Four (4) cold cathode fluorescent tubes, rated life 50,000 hours, at 50% brightness	Six (6) cathode fluorescent tubes, rated life 45,000 hours, at 50% brightness

LCD Panel Optical Characteristics	UML-172-90	UML-192-90	UML-202-90
Luminance	300 cd/m2, hard-coating (3H), non-glare treatment		
Contrast Ratio	1000:1	800:1	800:1
Viewing Angle	160°/160°	160°/160°	178°/178°

Video Input	All Models
Composite Video (CVBS)	1.0 Vp-p (0.5–1.5 Vp-p), automatic switching from 75 Ω unbalanced termination to Hi-Z with passive loop-through operation
Y/C (S-video)	0.7 Vp-p (Y-signal), 0.3 Vp-p (C-signal), 75 Ω termination
Picture-in-Picture	Video 1, Video 2, S-video

PC Input	UML-172-90	UML-192-90	UML-202-90
Analog RGB	0.7 Vp-p (0.5–1 Vrms)	0.7 Vp-p (0.5–1 Vrms)	0.7 Vp-p (0.5–1 Vrms)
Picture-in-Picture	Video 1, Video 2, S-video		

DVI/RGB/HDMI Timing Modes			
640 x 480	60/72/75 Hz	60/72/75 Hz	60/72/75 Hz
800 x 600	60/72/75 Hz	60/72/75 Hz	60/72/75 Hz
1024 x 768	60/70/75 Hz	60/70/75 Hz	60/70/75 Hz
1280 x 1024	60 Hz	60 Hz	60 Hz
1600 x 1200			60 Hz

Component Timing Modes			
640 x 480 (480i)	60 Hz	60 Hz	60 Hz
720 x 576 (576i)	50 Hz	50 Hz	50 Hz
640 x 480 (480P)	60 Hz	60 Hz	60 Hz

720 x 576 (576P)	50 Hz	50 Hz	50 Hz
1280 x 720 (720P)	50/60 Hz	50/60 Hz	50/60 Hz
1920 x 1080 (1080i)			50/60 Hz
1920 x 1080 (1080P)			50/60 Hz
<b>HDMI Timing Modes</b>			
640 x 480	50 Hz	50 Hz	50 Hz
720 x 600	50 Hz	50 Hz	50 Hz
1024 x 768	50/60 Hz	50/60 Hz	50/60 Hz
1280 x 1024			50/60 Hz
1600 x 1200			50/60 Hz
Audio Input	1.0 V line level, mono		
Audio Output	Loop-through line level Speaker: two (2), 2 W		

**Controls**

Video Input	All Models
Front Panel	Push-buttons
Input	Selects Video 1, Video 2, S-video, RGB, DVI, or HDMI input
Menu	Selects on-screen display (OSD) Up arrow, Menu select Down arrow, Menu select Left arrow, decrease Right arrow, increase
Power	On/Off
Front Panel Lockout	Multiple push-button combination

**On-screen Display**

On-screen Display	All Models
Video Mode	Custom (Brightness, Contrast, Color, Tint, Sharpness), Picture/Sound (Picture Mode, Color Tone, Mute, Volume, Size, DNR, 3D Comb), PIP (PIP, Input Source, Size, Position, Swap, Sound Select), Setup (Reset, Language, OSD Tone, Blue Screen, Key Lock, Trigger, Auto Switching, Firmware Version)
DVI/RGB	Custom (Brightness, Contrast, Sharpness), Picture/Sound (Picture Mode, Color Tone, Mute, Volume, PC, Auto Adjust, H-position, V-position, Frequency), PIP (PIP, Input Source, Size, Position, Swap, Sound Select), Setup (Reset, Language, OSD Tone, Blue Screen, Key Lock, Trigger, Auto Switching, Firmware Version)

**Indicators**

Indicators	All Models
LED	Power On (green) Power Off (red)

	Standby/Sleep Mode (flashes red)		
Connectors	UML-172-90	UML-192-90	UML-202-90
Video 1	Composite video: two (2) BNC (1 in, 1 out)		
Video 2	Composite video: two (2) BNC (1 in, 1 out)		
Y/C (S-video)	Two (2) mini-DIN, 4-pin (1 in, 1 out)		
Component	Y, Pb, Pr		
Audio	PC: one (1) 1/8 in. mini phono plug Video: four (4) RCA (2 in, 2 out)		
DVI-D/ HDMI/RGB	One (1) DVI in, One (1) HDMI in, One (1) RGB 15-pin D-sub in		
Trigger Input	One (1) 1/8 in. mini phono plug		
Power Cord	Two (2) 3-wire with a grounded plug, 1.8 m (6 ft) long, one (1) with a European/Continental plug type and one (1) with a U.S. plug type		
Power Adapter (attached)	Input: 100–240 VAC 50/60 Hz Output: 12 VDC, 4.2 A		Input: 100–240 VAC, 50/60 Hz Output: 12 VDC, 5.8 A

**Mechanical**

	UML-172-90	UML-192-90	UML-202-90
Cabinet Material	Front and Chassis: electrolytic galvanized iron		Front: ABS plastic Chassis: electrolytic galvanized iron
Finish	Charcoal black		
Mount	Wall mounting compatible with standard bracket, 100 mm centers, M4 thread		

**Dimensions (W x H x D)**

Monitor	UML-172-90	UML-192-90	UML-202-90
Monitor	389.7 x 348.9 x 74.5 mm (15.3 x 13.7 x 2.9 in.)	428.5 x 379.0 x 79.5 mm (16.9 x 14.9 x 3.3 in.)	460.4 x 395.1 x 81.0 mm (18.1 x 15.5 x 3.19 in.)
Monitor with Packaging	540 x 488 x 180 mm (21.3 x 19.2 x 7.1 in.)	540 x 488 x 180 mm (21.3 x 19.2 x 7.1 in.)	540 x 488 x 180 mm (21.3 x 19.2 x 7.1 in.)

**Weight**

Monitor	UML-172-90	UML-192-90	UML-202-90
Monitor	5.86 kg (12.9 lb)	6.36 kg (14.0 lb)	7.50 kg (16.5 lb)
Monitor with Packaging	8.08 kg (17.8 lb)	8.58 kg (18.9 lb)	9.72 kg (21.5 lb)

**Environmental**

	All Models
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	10%-90%, non-condensing

**Parts Included**

One (1) Bosch High Performance Color LCD Flat Panel Monitor  
 One (1) VGA to VGA cable, One (1) DVI to DVI cable,  
 Two (2), 3-wire power cords with a grounded plug:  
 one (1) with a European/Continental plug type and  
 one (1) with a U.S. plug type

**UMM-LW-20B Fixed Wall Mount**

Fixed wall mount that supports a flat panel LCD monitor up to 12 kg (26.5 lb) in weight, black  
 Order number **UMM-LW-20B**

**UMM-LCDUB-RM Rack Mount Bracket for LCD Monitors**

Supports dual 8.4-in. and single 8.4- to 19-in. LCD monitors in a standard VESA rack cabinet  
 Order number **UMM-LCDUB-RM**

**Ordering information****UML-172-90 17-inch Color LCD Display Monitor**

17-inch (432 mm) color LCD monitor, 1280 X 1024 resolution, VGA, DVI, HDMI, CVBS, audio, 120/230 VAC, 50/60 HZ  
 Order number **UML-172-90**

**UML-192-90 19-inch Color LCD Display Monitor**

19-inch (483 mm) color LCD monitor, 1280 X 1024 resolution, VGA, DVI, HDMI, CVBS, audio, 120/230 VAC, 50/60 HZ  
 Order number **UML-192-90**

**UML-202-90 20-inch Color LCD Display Monitor**

20-inch (501 mm) color LCD monitor, 1600 X 1200 resolution, VGA, DVI, HDMI, CVBS, audio, 120/230 VAC, 50/60 HZ  
 Order number **UML-202-90**

**UMM-LW-20B Fixed Wall Mount**

Fixed wall mount that supports a flat panel LCD monitor up to 12 kg (26.5 lb) in weight, black  
 Order number **UMM-LW-20B**

**UMM-LW-30B Swivel/Tilt Wall Mount**

Swivel/Tilt wall mount that supports a flat panel LCD monitor up to 12 kg (26.5 lb) in weight, black  
 Order number **UMM-LW-30B**

**Accessories****EOL-UMP-12V5B0-90 Power Supply**

Power supply for one 15-in., 17-in., or 19-in. LCD monitor, 120/230 VAC, 50/60 Hz, 12 VDC, 5 A  
 Order number **UMP-12V5B0-90**

**UMM-LW-30B Swivel/Tilt Wall Mount**

Swivel/Tilt wall mount that supports a flat panel LCD monitor up to 12 kg (26.5 lb) in weight, black  
 Order number **UMM-LW-30B**

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