

# UML Series 19- and 22-inch High Performance HD LED Monitors

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Advantage Line

The Bosch High Performance LED monitors offer HD resolution (up to 1080p) and precise color reproduction. These monitors are ideal for use with analog video, digital video recorders (DVRs), and with PC applications. The monitors feature a color LED flat-screen panel and are available with 18.5-inch or 21.5-inch viewable picture areas. Each monitor features a wide range of horizontal and vertical viewing angles that provide comfortable, clear viewing – whether you place it on a desktop or mount it to a wall or to a ceiling.

These monitors use advanced gamma curve correction and enhanced color temperature calibration to deliver a crisp, clear picture with precise color reproduction.

## Features

- ▶ Support up to 1920 x 1080 Full HD resolution (UML-223-90) and 1366 x 768 (UML-193-90)
- ▶ HDMI, DVI, and VGA inputs
- ▶ High contrast ratio 1,000:1
- ▶ Precise color reproduction
- ▶ LED backlight panel for higher luminance and lower power consumption

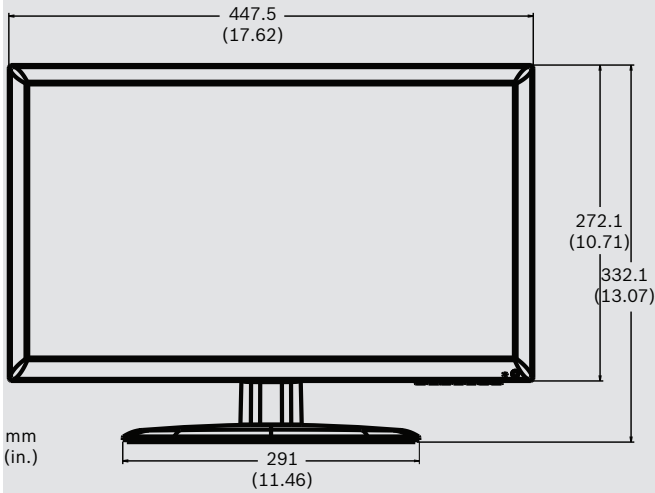
## 2 | UML Series 19- and 22-inch High Performance HD LED Monitors

### Technical specifications

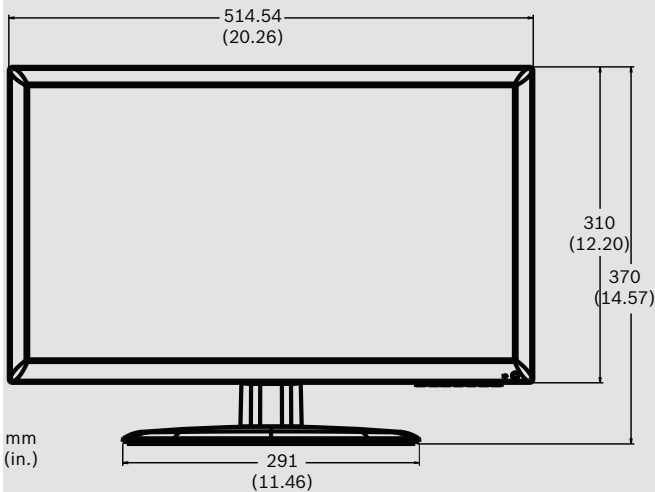
Electrical		
	<b>UML-193-90</b>	<b>UML-223-90</b>
Rated Voltage	12 VDC, 3.5 A	
Monitor	120/230 VAC, 50/60 Hz	
Power Adapter	100–240 VAC, 50/60 Hz	
Voltage Range	100–240 VAC, 50/60 Hz	
Frequency	Horizontal: 31 - 64 KHz Vertical: 50 - 75 Hz	Horizontal: 31 - 75 KHz Vertical: 50 - 75 Hz
Power at Rated Voltage		
On	42 W	42 W
Active Off	0.5 W	0.5 W
Video		
	<b>UML-193-90</b>	<b>UML-223-90</b>
Sync Format	PAL/NTSC	PAL/NTSC
LCD Panel	LED	LED
Viewable Picture Area	18.51 in.	21.53 in.
Active Display Area (H x V)	409.8 x 230.4 mm (16.1 x 9.1 in.)	476.64 x 268.11 mm (18.8 x 10.6)
Pixel Pitch (H x V):	0.3 x 0.3 mm	0.248 x 0.248 mm
Resolution <sup>1</sup>	1366 x 768	1920 x 1080
Aspect Ratio	16:9	16:9
Display Colors	16.7 million	16.7 million
Response Time	5 ms (typical)	5 ms (typical)
Panel Life	30,000 hours	30,000 hours
<small>1. Pixel Policy: Bosch monitors follow the ISO 13406-2 Class II standard.</small>		
LCD Panel Optical Characteristics		
	<b>All Models</b>	
Luminance	250 cd/m <sup>2</sup> (typical)	
Contrast Ratio	1000:1 (typical)	
Viewing Angle	Horizontal: 170° Vertical: 160°	
Input		
	<b>All Models</b>	
VGA (RGB PC)	0.7 Vp-p (0.5-1 Vrms)	
Timing Modes		
	<b>UML-193-90</b>	<b>UML-223-90</b>
VGA Input		
	640 x 480 (60 Hz)	640 x 480 (60 Hz)
	720 x 400 (70 Hz)	720 x 400 (70 Hz)
	800 x 600 (60 Hz)	800 x 600 (60 Hz)
	1024 x 768 (60 Hz)	1024 x 768 (60 Hz)
	1280 x 768 (60 Hz)	1280 x 768 (60 Hz)
	1360 x 768 (60 Hz)	1360 x 768 (60 Hz)
		1440 x 900 (60 Hz)
		1680 x 1050 (60 Hz)
		1920 x 1080 (60 Hz)
DVI/HDMI Input		
	480i (60 Hz)	480i (60 Hz)
	576i (50 Hz)	576i (50 Hz)
	480p (60 Hz)	480p (60 Hz)
	576p (50 Hz)	576p (50 Hz)
	720p (50/60 Hz)	720p (50/60 Hz)
	1080i (50/60 Hz)	1080i (50/60 Hz)
	1080p (24/25/30/50/60 Hz)	1080p (24/25/30/50/60 Hz)
	640 x 480 (60 Hz)	640 x 480 (60 Hz)
	720 x 400 (70 Hz)	720 x 400 (70 Hz)
	800 x 600 (60 Hz)	800 x 600 (60 Hz)
	1024 x 768 (60 Hz)	1024 x 768 (60 Hz)
	1280 x 768 (60 Hz)	1280 x 768 (60 Hz)
	1360 x 768 (60 Hz)	1360 x 768 (60 Hz)
		1440 x 900 (60 Hz)

		1680 x 1050 (60 Hz)
		1920 x 1080 (60 Hz)
Controls		
<b>Input</b>	<b>All Models</b>	
Control Panel	Push-buttons	
Source	Selects: HDMI, DVI-D, and VGA	
Menu	Selects on-screen display (OSD), up cursor, down cursor/auto adjust, left cursor, right cursor	
Power	On/Off	
Control Panel Lockout	Multiple push-button combination	
<b>On-screen Display</b>	<b>All Models</b>	
Video Mode	Input Source, Screen, OSD, Utility	
<b>Indicators</b>	<b>All Models</b>	
LED	Power On, Standby (blue) Power Off (LED off)	
<b>Connectors</b>	<b>All Models</b>	
Digital	One (1) DVI-D input	
HDMI	One (1) input	
VGA	One (1) RGB 15-pin D-sub input	
Audio Input	1.2 Vrms line level, stereo	
Mechanical		
	<b>All Models</b>	
Cabinet Material	SECC	
Finish	Black	
Mount	Wall mounting compatible with standard bracket, or Desktop mounting with included stand	
VESA Mounting Compliance	100 x 100 mm	
Dimensions (W x H x D)		
	<b>UML-193-90</b>	<b>UML-223-90</b>
Monitor	447.5 x 272.1 x 45.107 mm (17.62 x 10.71 x 1.77 in.)	514.54 x 310 x 45.107 mm (20.26 x 12.20 x 1.77 in.)
With Stand	447.5 x 332.1 x 182 mm (17.62 x 13.07 x 7.16 in.)	514.54 x 370 x 182 mm (20.26 x 14.57 x 7.16 in.)
With Packaging	505 x 380 x 130 mm (19.88 x 14.96 x 5.12 in.)	570 x 420 x 130 mm (22.44 x 16.54 x 5.12 in.)
Weight		
Monitor Weight	3.0 kg (6.6 lb)	3.6 kg (7.9 lb)
Shipping Weight	4.4 kg (9.7 lb)	5.2 kg (11.5 lb)
Environmental		
	<b>All Models</b>	
Operating Temperature	0°C to +50°C (32°F to 122°F)	
Storage Temperature	0°C to +50°C (32°F to 122°F)	
Humidity	0% to 90% Relative	
Certifications and approvals		
<b>Region</b>	<b>Safety Certification</b>	
Canada	cUL	
Europe	EN60950, CE Declaration of Conformity, CB scheme	
USA	UL60950	
Electromagnetic Compatibility (EMC)		
Emission	EN55022 class B, FCC part 15 class B	
Immunity	EN50130-4 (CE)	
Environmental		
Vibration and Shock		

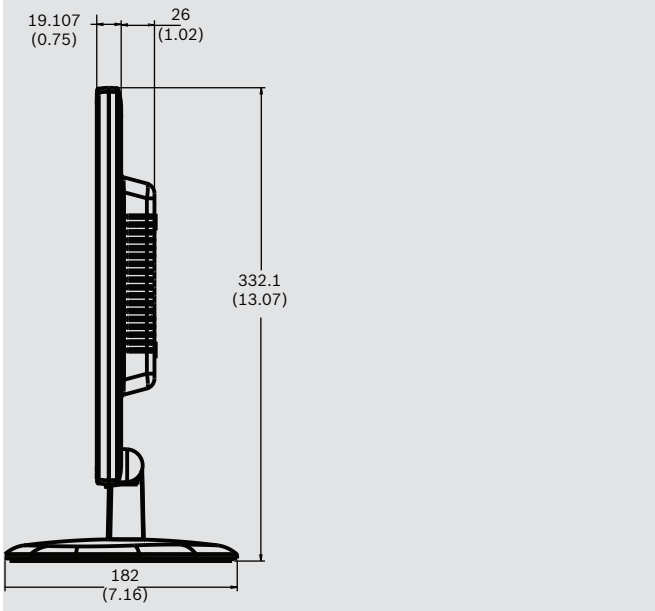
**Installation/configuration notes**



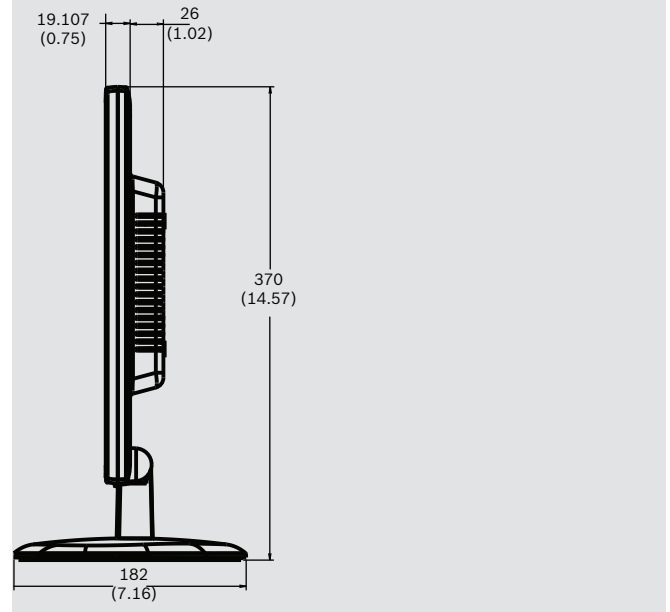
UML-193-90: Front View



UML-223-90: Front View



UML-193-90: Side View



UML-223-90: Side View

**Parts included**

Quant.	Component
1	Bosch Full HD Color LED Flat Panel Monitor
1	Monitor Stand
2	FS4 x 12 screws, for monitor stand
2	Power Cords, 3-wire with grounded plug 1.8 m (6 ft) long: one with a U.S plug type and one with a European Continental plug type
1	Power Adapter
1	DVI-D to DVI-D cable, 1.8 m (6 ft)
1	VGA to VGA (D-Sub), cable, 1.8 m (6 ft)
1	Stereo Cable, 1.8 m (6 ft)
1	Installation Manual (English)
1	CD-ROM with multi-language Installation Manual

**Ordering information**

UML-193-90 19-inch High Performance HD LED Monitor	UML-193-90
UML-223-90 22-inch High Performance Full HD LED Monitor	UML-223-90

**Accessories**

UMM-LW-20B Fixed Wall Mount	UMM-LW-20B
UMM-LW-30B Swivel/Tilt Wall Mount	UMM-LW-30B

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