XGA 50 inch PLASMA DISPLAY
# PDP-502MX

50 inch

Providing a Large Screen in a Lightweight and Ultra-Slim Package, the Plasma Display Panel (PDP) is a Next-Generation Technology that Completely Revolutionizes Visual Presentation

Large-screen PDP units boast ultra-slim dimensions, are surprisingly light in weight and deliver superb picture quality - a combination of features that open up a host of opportunities in the visual presentation field, especially in the current HDTV/DVD era. As the advantages of PDPs over conventional CRT and projection-type video displays become increasingly apparent, PIONEER's next-generation PDP technology has established itself as a core element in all kinds of public display and visual communication systems. The launch of this new model, with its further improved picture quality and durability, represents a major triumph for PIONEER, which has continued to lead the industry in developing and mass producing PDPs from its early days.
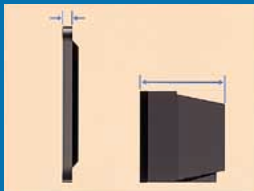
A Large Screen in an Extremely Thin Package

Unlike conventional CRTs or projection displays, PDP has extraordinarily slim dimensions relative to its large screen size.

Lightweight Unit Design

In addition to their slender proportions, PDP units are also ultra-light in weight, two features that make these revolutionary displays ideal for wall- or ceiling-mounting installation.
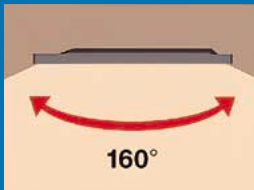
A Wider Viewing Angle

160°

PDPs provide an effective visual field angle of more than 160 degrees both horizontally and vertically. Spectators can enjoy sharp on-screen images from almost any viewing point, not just from immediately in front of the screen.

Accurate Display Characteristics

PDPs incorporate a true flat panel screen which ensures accurate and distortion-free images all the way out to the screen corners. Instant setup and convergence free operation assures the image quality will never change.
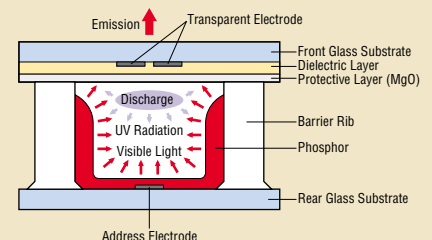
Free From Magnetic Interference

PDPs are not affected by magnetic fields, so they can be used close to loudspeakers without risk of screen distortion due to magnetic interference.

PDP Technology

In a PDP unit, a gas fills the spaces between two glass sheets which are lined up in parallel separated by a gap just 100 to 200 microns wide. UV light is generated by discharging this gas using electrodes. Red, green and blue fluorescent substances absorb these UV discharges and then re-radiate the energy as visible light to produce the colors that appear on the screen.

■ PDP Operating Principle

Emission
Transparent Electrode
Front Glass Substrate
Dielectric Layer
Protective Layer (MgO)
Discharge
UV Radiation
Visible Light
Barrier Rib
Phosphor
Rear Glass Substrate
Address Electrode

PIONEER is the World Leader in the Manufacture of Industrial-Use Large-Screen Displays

For decades, PIONEER has led the world in the development, production and sale of the display systems. One of our most notable successes has been the Multi-Projection CUBE Video Wall system. Cube has achieved unrivaled popularity worldwide as a display system for public and commercial-use facilities as well as for all kinds of exhibitions and shows. Over the years, we have also established much of the technology and know-how to provide the solid reliability so important in the industrial-use market. For the future, PIONEER is positioning PDP as one of the core businesses in its long-term development strategy. Making the most of our expertise in video display-related circuit and panel manufacturing technologies, we are determined to continue providing PDP products that lead this field. As we move deeper into the era of multimedia, professional demands in respect of more effective video display systems will steadily increase and PIONEER will continue to respond to these demands through technological improvement and innovative design.

PIONEER's PDP Products are Created Totally in-House From Design to Assembly

While some PDP manufactures are content to OEM major display components, PIONEER manufactures all major PDP display components in it's own fabrication facility. In order to realize an ideal display system, PIONEER performs all processes in-house from the initial screen design and development through final assembly.

Only PIONEER Grasps Total Market Demands and Provides Products That Can be Installed Exactly as Desired

Thanks to a wealth of experience in the sale and installation of industrial-use display systems, PIONEER is adept at satisfying diverse operating environment-related demands. We provide strong and secure installation fixtures that make possible versatile installation configurations. What's more, we provide comprehensive customer service and support backed by a long record of excellence.

Introducing the Industry's Highest-Level Display Performance
PIONEER's Top-of-the Line Professional-Use
Plasma Display XGA Model Undergoes Full Model Change

Newly Developed Panel Pushes the Previous Limits of Illumination Efficiency

New True Matrix Imaging Technology Makes On-Screen Images Brighter Than Ever

PIONEER's newly developed Encased Cell Structure ensures superior illumination efficiency by increasing phosphor surface area and eliminating light leakage from the neighboring above and below cells, thereby improving clarity in the vertical direction. In addition, this arrangement increases the amount of light produced resulting in brighter on-screen images.

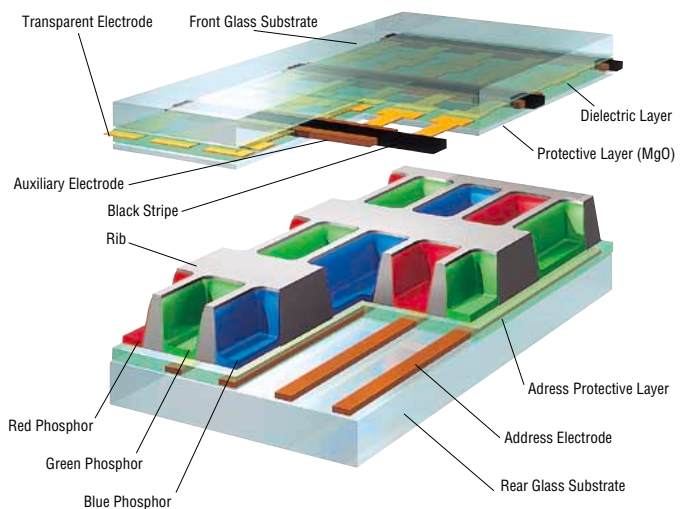### Black Stripes Greatly Improve Contrast Especially in Bright Locations

The new black stripes on the panel's non-luminous front section reduce the amount of external light reflected off the screen surface to effectively double the on-screen image contrast when the display is used in bright locations. Thanks to this innovation, viewers can enjoy sharp pictures, even under bright ambient lighting conditions, with no reduction in black contrast.

Improved Blue Phosphor Makes On-Screen Whites Even Whiter

PIONEER's new plasma display achieves more brilliant white reproduction thanks to the employment of an improved blue phosphor that features an improved illumination efficiency balance. The color temperature can be set by changing the color balance controls.* Our new phosphor development brings enhanced white reproduction and sharper contrast to every image.

These values have individually adjusted high and low levels. Once adjusted, color balance settings can be set into one of two color memories for each type of input. All of these adjustments can be done via a wireless remote or RS-232C control.

Strucure of Newly Developed Panel

Transparent Electrode
Front Glass Substrate
Dielectric Layer
Protective Layer (MgO)
Auxiliary Electrode
Black Stripe
Rib
Adress Protective Layer
Red Phosphor
Address Electrode
Green Phosphor
Rear Glass Substrate
Blue Phosphor

Digital High Density Image Scaling Technology Achieves 8 Times the Normal NTSC Signal Density for the Ultimate in High-Picture Quality

PIONEER's exclusive Digital Signal Processor (DSP) - Digital High Density Image Scaling Technology - uses progressive conversion to boost the NTSC picture quality by first doubling interlaced signal to VGA level. Then, by interpolation and estimation, doubles the information content in both the horizontal and vertical directions. The result is an 8-fold increase in original signal density that optimizes picture reproduction. Together with the high-definition panel this technology ensures very smooth picture reproduction. Moreover, in an industry first, PIONEER's Digital High Density Image Scaling Technology also succeeds in doubling the 1080i HD signal density, which means viewers can enjoy superb high-definition pictures that no CRT-based system can match.
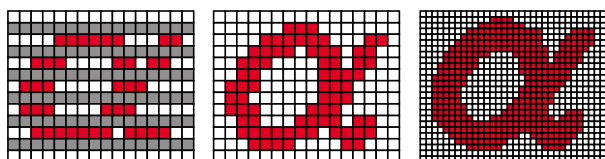
Original (1 field)   **Conventional Progressive**   **8-fold Density Progressive**

Continuous Emission Display Technology Realizes Improved Contrast in Dark Image Sections and Eliminates False Contours

Most plasma displays require a continuous fixed discharge level, known as the reset level, in order to display an image. The problem is that if this level is too high, it can produce negative display qualities. However, PIONEER's original Continuous Emission Display Technology has succeeded in almost eliminating the need for a Rest Level. This allows the PDP-502MX to achieve a deeper and firmer black contrast for dark locations along with improved dark-scene gradation. Thanks to this advancement, PIONEER has completely eliminated one of the greatest image problems with conventional plasma displays, false contours.

Conventional PDP   PDP-502MX

PIONEER's Digital Enhancer Achieves Clear, High-Resolution Pictures from All Input Signals Including PC, Video, etc.

To ensure the finest and clearest possible PC image reproduction, the PDP-502MX is equipped with PIONEER's exclusive Digital Enhancer signal processing circuitry. This development has resulted in a 1-dot unit image management and enhancement in both the horizontal and vertical directions. This means that this model is capable of displaying fine text and graphic images from PC sources with much more clarity than pre-existing plasma displays. Accordingly, the PDP-502MX is the ideal display for a wide variety of presentation tasks.

Conventional PDP   PDP-502MX

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PIONEER's Top-of-the Line Professional-Use XGA Plasma Display Undergoes Full Model Change

High Brightness and High Contrast

The PDP-502MX reproduces remarkably bright and high-contrast pictures while maintaining a high level of resolution thanks to a newly-developed display panel that pushes the limits of illumination efficiency and to a newly-developed drive technology.

High Picture Quality and Superb Clarity

Due to quantum advancements with the principal signal processing system and the adoption of several new innovations, the PDP-502MX is capable of exceptionally clear and high-resolution reproduction of pictures from a host of signal sources including HDTV, PC and standard video.

A true native XGA Display Compatible with SXGA and UXGA

The PDP-502MX is equipped with a 980,000-pixel (1280 x 768 dot) 50-inch high-resolution Plasma panel. This full-specification display accepts standard PC signals ranging from VGA (640 x 480 dot) to UXGA (1600 x 1200 dot) and everything in-between. What's more the full 1280 x 768 dot display can be used in a 16:9 native mode with an exclusive PC card or driver. Thanks to the high resolution and large signal bandwidth, the PDP-502MX is also compatible with HDTV signals from an optional tuner.

Versatile, Flexible, Slim Design

The PDP-502MX offers integrators and designers versatile installation options to suit virtually any application. This model now produces less heat and has an advanced environmental tolerance device which simultaneously reduces operating noise. The unit, although 50 diagonal inches, is surprisingly light weight and is one of the slimmest available on the market. With the 160 degree viewing angle, both vertically and horizontally, this plasma panel can be viewed from almost anywhere. The PDP-502MX can be integrated into new and existing applications with ease.

A Full Lineup of Professional Features and Functions

The PDP-502MX is equipped with a host of control and display features and functions that professional users will find invaluable. These features including both user and integrator adjustment modes, precise white balance adjustment, external RS-232C control interface (with loop through for multiple units), desecrate input and function control, white balance switching function, tools for managing image shadowing, a wealth of input terminals (4 sets of inputs + 2 sets of outputs), audio amplifier (2W x 2W), key lock function, operating status monitor, four mode display orientation (Up/Down and Left/Right Reverse mode), power management function, and an OSD (On-Screen Display) ON/OFF function.

PDP-502MX with Display Stand

Optional Side-Mount Speakers PDP-S03-LR

These vertical twin-system slim-type speaker systems, which are designed for mounting on both sides of the plasma display. Each combine a dome-type tweeter sandwiched between two woofers. Realizing extremely efficient audio reproduction for such a compact design, these speakers clearly reproduce a full range of audio sources.

Max. output
12 W / 8 ohms
Dimensions (W x D x H)
2-29/32" x 3-27/32" x 28-1/8"
(74 x 98 x 714 mm)
Weight
5 lbs. 15 oz (2.7 kg) x 2

■ SPECIFICATIONS

Effective Screen Size (W x H)	43-15/16" x 24-13/16" (1098.2 x 620.5 mm) (50in. diag.)
Aspect Ratio	16:9
Number of Pixels	1280 (Hor.) x 768 (Ver.)
Pixel Pitch	0.858 mm (Hor/RGB trio) x 0.808 (Ver.) mm
Color Resolution	256 gray scale, 16.7 million colors
Viewing Angle	More than 160° (Hor.) , more than 160° (Ver.)
Dimensions (W x H x D)	47-31/32" x 28-1/8" x 3-7/8" (1218 x 714 x 98 mm)

Weight	88 lbs. 14 oz (40.3 kg)
Power Consumption	470 W (0.6W at stand by)
Power Requirements	AC 100~120V±10%, 50/60Hz (4.7A)
Operating Temperature	32°F~104°F (0°C~40°C)
Operating Humidity	20%~80%
Operating Atmospheric Pressure	0.8~1.1 atmospheric pressure
Safety Regulations	UL 1492, FCC class B, C-UL

■ Video Input/Output Terminals

		Connector	Signal	Level/Impedance
INPUT 1	IN	BNC	Composite video signal	1Vp-p/75Ω
	OUT	BNC	Composite video signal	75Ω
INPUT 2	IN	Mini DIN 4 pin(S terminal)	Y/C separate video signal	Y : 1Vp-p/75Ω
				C : 0.286Vp-p/75Ω(NTSC)
		BNC x 2		0.3Vp-p/75Ω(PAL)
INPUT 3	IN	BNC x 5	RGB signal (G on Sync compatible)	RGB : 0.7Vp-p/75Ω
				G on Sync : 1Vp-p/75Ω
				HD/CS, VD : TTL level/75Ω or 2.2kΩ switchable
			Component video signal	Y : 1Vp-p/75Ω
				P$_B$/C$_B$, P$_R$/C$_R$: 0.525Vp-p/75Ω
INPUT 4	IN	Mini D-Sub 15-pin	RGB signal (G on Sync compatible)	R.G.B : 0.7Vp-p/75Ω
				G on Sync : 1Vp-p/75Ω
				HD/CS, VD : TTL level/2.2kΩ
			Component video signal	Y : 1Vp-p/75Ω
				P$_B$/C$_B$, P$_R$/C$_R$: 0.525Vp-p/75Ω
			*Compatible with Microsoft Plug & Play (VESA DDC1/2B)	
	OUT	Mini D-Sub 15-pin	RGB signal (G on Sync compatible)	75Ω

* For compatible input frequency of INPUT 3 and INPUT 4, refer to the chart right.   * INPUT 2 is Y/C separate signal (BNC) and Y/C separate signal (Mini DIN 4-pin/S terminal) selectable, while INPUT 3 and INPUT 4 are RGB signal and component signal selectable.

■ Personal Computer Input Signal

Resolution (dot x line)	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Usage
640 x 400	56.4	24.8	NEC PC-9800
	70.1	31.5	NEC PC-9800
	60	31.5	(852 x 480)
			(864 x 480)
	66.7	35	Apple Macintosh 13"
640x 480	72	37.9	
	75	37.5	
	85	43.3	
	56	35.2	
	60	37.9	(1072 x 600)
800 x 600	72	48.1	
	75	46.9	
	85	53.7	
832 x 624	74.6	49.7	Apple Macintosh 16"
	43 Interlace	35.5	
	60	48.4	(1376 x 768)
1024 x 768	70	56.5	
	75 (74.9)	60 (60.2)	( ) indicates Apple Macintosh 19"
	85	68.7	
	60	53.7	
1152 x 864*	72	64.9	
	75	67.7	
1152 x 870*	75.1	68.7	Apple Macintosh 21"
1152 x 900*	66	61.8	Sun Microsystems LO
	76	71.7	Sun Microsystems HI
1280 x 768	56	45.1	
1280 x 960*	60	60	
	43 Interlace	46.4	
1280 x 1024*	60	64	
	75	80	(1600 x 1024)
	85	91.1	
	60	75	
1600 x 1200*	65	81.3	
	70	87.5	

*Compressed or partial display

*Macintosh is a registered trademark of Apple Computer, Inc.   *PC-9800 is a registered trademark of NEC Corporation.   *NEC is a registered trademark of NEC Corporation.   *Microsoft is a registered trademark of Microsoft Corporation.   *VESA is a registered trademark of Video Electronics Standards Association.   *Sun Microsystems is a registered trademark of Sun Microsystems, Inc.   *Design and specifications are subject to change without notice.

■ Audio Input/Output Terminals

		Connector	
AUDIO INPUT (INPUT 1/2)	IN	Pin x 2 (L/R)	L/R : 500mVrms/more than 10kΩ
AUDIO INPUT (INPUT 3/4)	IN	Stereo mini	L/R : 500mVrms/more than 10kΩ
AUDIO OUTPUT	OUT	Stereo mini	L/R : Max. 500mVrms/less than 5kΩ
SPEAKER	OUT		L/R : 8~16Ω/2W + 2W (8Ω)

■ Control Terminals

RS-232C (for control of personal computer)	Connector	D-sub 9-pin
	Baud rate	1200, 2400, 4800, 9600, 19200bps
Combination IN/OUT	Connector	Mini-DIN 6-pin (x 2)
Control IN/OUT	Connector	Mini jack (x 2)

■ Video Input Signal Compatibility Chart (INPUT 1, INPUT 2)

	Signal Format	Usage
3.58 NTSC	Composite Video	INPUT 1
	S-Video Signal (Y/C)	INPUT 2
PAL	Composite Video	INPUT 1
	S-Video Signal (Y/C)	INPUT 2
SECAM	Composite Video	INPUT 1
	S-Video Signal (Y/C)	INPUT 2
4.43 NTSC	Composite Video	INPUT 1
	S-Video Signal (Y/C)	INPUT 2

■ Video Input Signal Compatibility Chart (INPUT 3, INPUT 4)

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Usage
50	15.625	Component Video RGB	
	31.25	Component Video RGB	
	15.734	Component Video RGB	480i (SDTV)
	31.5	Component Video RGB	480p (SDTV)
60	33.75	Component Video RGB	1080i (HDTV) Hi-vision
	45	Component Video RGB	720p (HDTV)
	67.5	Component Video RGB	1080p (HDTV)

■ Personal Computer Screen Display

	VGA	SVGA	XGA	SXGA*1	UXGA*2
True					
4:3 Expanded/ Compressed					
Full					
Partial					

*1 4:3 Normal and Full pictures are compressed. Zoom image are shown in real size.   *2 Compressed

■ Accessories

•Pin/BNC Conversion Adaptor x 1 •Power Cord x 1 •Cleaning Cloth x 1 •Speed Clamp x 2 •Bead Band x 2 •Remote Control Unit x 1 •Remote Control Unit Case x 1 •AA (R6) Battery x 2 •Stand x 2 •Hex Hole Bolt x 2 •Washer (Large) x 2 •Washer (Small) x 2 •Operation Instructions •Warranty Card

■ **Dimensions**

1-11/16 (150)
47-31/32(1218)
3-27/32(98)
2-9/16(65)
1-7/8(48)
45-3/4(1162)
1-25/32(45)
43-1/4(1098.24)
3-11/32(85)
4-3/32(104)
23-7/32(590)
4-3/32(104)
28-1/8(714)
24-7/16(620.54)
49-21/32(1261.4)
19-7/32(488.5)
5-29/32(150)
9-27/32(250)
5-29/32(150)
9-27/32(250)
25-31/32(660)
2-11/32(59.5)
39-11/16(1008)
2-27/32(72)
19-17/32(496)

■ **Terminal Configration**

OPTIONS

	PDK-5002 CEILING MOUNT KIT
	PDK-5005 PDP BRACKET
	PDK-5006 HANG ON WALL UNIT
	PDK-5001 TABLE TOP STAND
	PDP-S03-LR SIDE-MOUNT SPEAKERS

*Only available as special order in the U.S.A.

	PDWB-5001(flat) WALL MOUNT KIT
PSA-1 ADJUSTABLE HEIGHT SUSPENSION ADAPTER	**PSA-2** ADJUSTABLE HEIGHT SUSPENSION ADAPTER
	PCA-1 1-1/2" NTP (SINGLE) CEILING ADAPTER
	PCA-2 2" NTP (DUAL) CEILING ADAPTER

* These products are offered for sale only in the US market. Pioneer cannot accept responsibility in the event that they are used in other regions.
*These items have been produced by Progressive Marketing Products, Inc.
If you need further information please call 1-800-368-9700 or access to http://www.pmpi.com.

Providing Unlimited Possibilities for Visual Exhibition, Pioneer PDPs are Available for Installation Virtually Anywhere
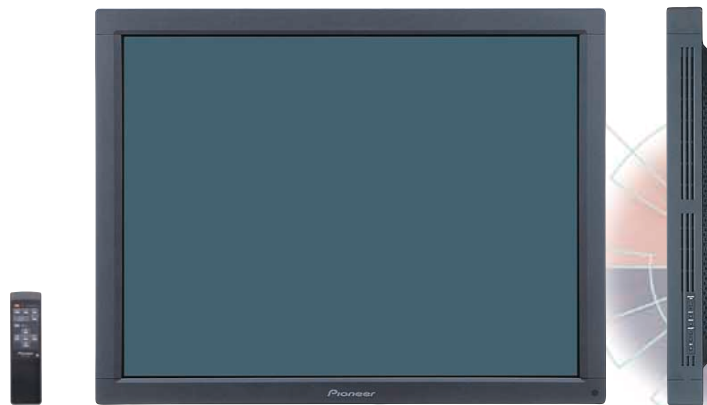
The Industrial Plasma Standard Model Undergoes Further Evolution!!

- ● 40" screen size
- ● 4:3 aspect ratio
- ● Black stripe screen for high contrast
- ● High brightness
- ● XGA compatible with optional down converter

VGA 40-INCH PLASMA DISPLAY
PDP-V402

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