

Appendix A: PX-716 Specifications

This appendix shows specifications for all PX-716 drives, followed by unique specifications for the PX-716A and PX-716SA.

Specifications for All PX-716 Drives

Front Panel

Eject Eject button; manual emergency eject; software eject.

LED Indicator

- Yellow when initializing, reading, or ejecting disc.
- Green during standby and when Buffer Underrun Proof Technology or Lossless Linking/Zero Link is active.
- Blinking amber when writing to disc. Blink rate indicates writing speed.

Disc Loading Auto

DVD Regional Setting

Compatibility RPC phase-2-compatible

Changing regional setting Max. 5 times

Other Features

Data Buffer 8 MB

Usable Formats

Logical DVD Read/Write	DVD-ROM, DVD-Video, multi-border, multi-session, DVD+VR, DVD-VR
Logical CD Read/Write	CD-DA, CD-Extra, CD-ROM Mode-1, CD-ROM Mode-2, CD-ROM XA, Photo CD, Video CD, multi-session, CD-TEXT, CD-I, CD+G, UDF
Write Methods, DVD+R/RW, DVD+R DL	<ul style="list-style-type: none">▪ DVD+R: Disc-at-once (DAO), multi-session, incremental▪ DVD+RW: Random access write, sequential write▪ DVD+R DL: DAO, multi-session, incremental
Write Methods, DVD-R/RW, DVD-R DL	<ul style="list-style-type: none">▪ DVD-R: DAO, incremental recording, multi-border recording▪ DVD-RW: DAO, multi-border recording, incremental recording, restricted overwriting, DRT-DM▪ DVD-R DL: Sequential write
Write Methods, CD-R/RW	Track-at-once (TAO), DAO, packet write (variable and fixed), session-at-once (SAO)

Supported MediaSupported
Media, DVD

- Stamped DVDs: Single layer / Double layer
- DVD-R: For General Part 1 Physical Specification Version 2.1
- DVD-R DL: Part 1 Physical Specification 3.0
- DVD-RW: Part 1 Physical Specification Version 1.1/1.2
- DVD+R: Part 1 Volume Basic Format Version 1.3
- DVD+R DL: Part 2 Basic Format Specification Version 1.0
- DVD+RW: Part 1 Volume 1 Basic Format Specification Version 1.3;
Part 1 Volume 2 Basic Format Specification Version 1.0

Supported
Media, CD

- Stamped CDs: Discs compliant with Red/Yellow/Green/White/Blue Book
- CD-R: Orange Book Pt II-compliant discs (Type 74, Type 80)
- CD-RW: Orange Book Pt III-compliant discs

Supported
Media SizeCD: 12 cm
DVD: 12 cm, 8cm (DVD-R/RW)

Recommended Media

Recommended media are recordable or rewritable CD and DVD media that have been tested by Plextor. For the latest updated list of recommended media for the PX-716, see the Plextor web site at www.plextor.com.

NOTE: For the media below:

Rated means the maximum write speed established by the media vendor.

Recommended is the Plextor-recommended speed, which means that testing by Plextor engineers indicates the media will achieve top quality when written with the PX-716 at that speed.

Compatible means the manufacturer indicates the disc can be written at this higher-than-rated speed, although an increase in errors may occur.

PowerRec in the Plextor drive performs real-time monitoring of write quality and adjusts the write speed up and down to ensure the best quality possible.

Recommended Media (continued)

DVD+R media Mitsubishi Chemical/Verbatim 16X-rated DVD+R media:

- 16X writing recommended

Maxell 16X-rated DVD+R media:

- 12X writing recommended
- 16X compatible with PX-716 firmware v. 1.04

Taiyo Yuden 16X-rated DVD+R media:

- 16X writing recommended with PX-716 firmware v. 1.05, scheduled for release in March 2005

Taiyo Yuden 8X-rated DVD+R media:

- 16X writing recommended with PX-716 firmware v. 1.02 and later

Maxell, Mitsubishi Chemical/Verbatim, Ricoh 8X-rated DVD+R media:

- 12X writing recommended with PX-716 firmware v. 1.02 and later

Taiyo Yuden, Mitsubishi Chemical/Verbatim, Ricoh, Maxell 4X-rated DVD+R media:

- 8X writing recommended

Mitsubishi Chemical/Verbatim, Ricoh 2.4X-rated DVD+R media:

- 2.4X writing recommended

Recommended Media (continued)

DVD+RW media

Mitsubishi Chemical/Verbatim 8X-rated DVD+RW media:

- 8X writing recommended

Ricoh 8X-rated DVD+RW media:

- 8X writing recommended with PX-716 firmware v. 1.05, scheduled for release in March 2005

Mitsubishi Chemical/Verbatim, Ricoh 4X-rated DVD+RW media:

- 4X writing recommended

Mitsubishi Chemical/Verbatim, Ricoh 2.4X-rated DVD+RW media:

- 2.4X writing recommended

NOTE: All DVD+RW media are rewritable up to 1,000 times.

DVD+R DL media

Mitsubishi Chemical/Verbatim 2.4X-rated DVD+R media:

- 4X writing recommended with PX-716 firmware v. 1.03
- 6X writing recommended with PX-716 firmware v. 1.04

Recommended Media (continued)

- DVD-R media Taiyo Yuden, Mitsubishi Chemical/Verbatim, TDK
16X-rated DVD-R media:
- 16X writing recommended with PX-716
firmware v. 1.04 and later
- Maxell 16X-rated DVD-R media:
- 12X writing recommended
 - 16X compatible with PX-716 firmware v. 1.04 and
later
- Taiyo Yuden 8X-rated DVD-R media:
- 16X writing recommended with PX-716
firmware v. 1.04 and later
- Maxell, Mitsubishi Chemical/Verbatim 8X-rated
DVD-R media:
- 8X writing recommended
- TDK 8X-rated DVD-R media:
- 8X writing recommended
 - 12X compatible with PX-716
firmware v. 1.02 and later
- Taiyo Yuden, TDK 4X-rated DVD-R media:
- 8x writing recommended
- Maxell, Mitsubishi Chemical/Verbatim 4X-rated
DVD-R media:
- 4X writing recommended
- Taiyo Yuden, Maxell, Mitsubishi Chemical/Verbatim,
TDK 2X-rated DVD-R media:
- 2X writing recommended

Recommended Media (continued)

DVD-R DL media	Mitsubishi Chemical/Verbatim 2X-rated DVD-R DL media: <ul style="list-style-type: none">▪ 2X compatible with PX-716 firmware v. 1.04▪ 6X compatible with firmware v. 1.05, scheduled for release in March 2005
DVD-RW media	Victor, Mitsubishi Chemical/Verbatim, TDK 4X-rated DVD-RW media: <ul style="list-style-type: none">▪ 4X writing recommended Victor, Mitsubishi Chemical/Verbatim, TDK 1-2X-rated DVD-RW media: <ul style="list-style-type: none">▪ Writing at rated speed recommended NOTE: All DVD-RW media are rewritable up to 1,000 times.
CD-R media	52X-rated: Maxell 80 min, TDK 74 min, TDK 80 min, Fuji 80 min 48X-rated: Taiyo Yuden 80 min 40X-rated: Ricoh 80 min (16X writing recommended) 32X-rated: Taiyo Yuden 80 min
CD-RW media	24X-rated: Mitsubishi Chemical/Verbatim 74 min 10X-rated: Ricoh, Mitsubishi Chemical/Verbatim 74 min and 80 min 4X-rated: Ricoh, Mitsubishi Chemical/Verbatim 74 min/80 min

Performance Specifications

Read Speed, DVD	Speed	Stamped DVD		DVD ±R	DVD ±RW	DVD ±R DL
		SL	DL			
	6-16X CAV	✓	–	–	–	–
	5-12X CAV	✓	✓	✓	✓	–
	3-8X CAV	✓	✓	✓	✓	✓
	2-5X CAV	✓	✓	✓	✓	✓
	2X CLV	✓	✓	✓	✓	✓

NOTES: SL = Single layer disc, DL = Double layer disc.

When a DVD-Video with CSS (copy protection via the Content Scrambling System) is loaded, the PX-716 slows its playback speed to reduce drive noise.

Read Speed, CD	Speed	Mode-1 Discs	Mode-2 Discs	CD-DA Discs
	20-48X CAV	Stamp,R (48X with SpeedRead; default is 40X)	–	–
	17-40X CAV	Stamp,R, RW	Stamp,R, RW	Stamp,R
	14-32X CAV	Stamp,R, RW	Stamp,R, RW	Stamp,R, RW
	10X-24X CAV	Stamp,R, RW	Stamp,R, RW	Stamp,R, RW
	8X CLV	Stamp,R, RW	Stamp,R, RW	Stamp,R, RW
	4X CLV	Stamp,R, RW	Stamp,R, RW	Stamp,R, RW

NOTE: “Stamp” indicates commercially pressed “silver” discs.

Performance Specifications (continued)Write Speed,
DVD \pm R/RW

Speed	+R	+RW	+R DL	-R DL	-R	-RW
16X CAV	✓	-	-	-	✓	-
12X PCAV	✓	-	-	-	✓	-
6X-8X PCAV	✓	✓	-	-	✓	-
6X CLV	✓	✓	-	✓	✓	-
4X CLV	✓	✓	✓	✓	✓	✓
2.4X CLV	✓	✓	✓	-	-	-
2X CLV	-	-	-	✓	✓	✓
1X CLV	-	-	-	-	-	✓

Write Speed,
CD-R/RW

Speed	CD-R	Ultra Speed CD-RW Media	High Speed CD-RW Media	Normal Speed CD-RW Media
48X CAV	✓	-	-	-
32X PCAV	✓	-	-	-
24X PCAV	-	✓	-	-
16X CLV	✓	-	-	-
10X CLV	-	-	✓	-
8X CLV	✓	-	-	-
4X CLV	✓	-	-	✓

Performance Specifications (continued)

DVD Transfer Rate	Speed	Write (KB/s)	Read (KB/s)
	16X	8310-22160 (CAV)	9280-22160 (CAV)
	12X	8310-16620 (PCAV)	6925-16620 (CAV)
	8X	8310-11080 (PCAV)	4709-11080 (CAV)
	6X	8310 (CLV)	–
	5X	–	2909-6925 (CAV)
	4X	5540 (CLV)	–
	2.4X	3324 (CLV)	–
	2X	2770 (CLV)	2770 (CLV)
	1X	1385 (CLV)	–

CD Transfer Rate	Speed	Write (KB/s)	Read (KB/s)
	48X	3180-7200 (CAV)	3180-7200 (CAV)
	40X	–	2710-6000 (CAV)
	32X	3180-4800 (PCAV)	2170-4800 (CAV)
	24X	3000-3600 (PCAV)	3000-3600 (CAV)
	16X	2400 (CLV)	–
	10X	1500 (CLV)	–
	8X	1200 (CLV)	1200 (CLV)
	4X	600 (CLV)	600 (CLV)

Initialization Time Time measured from power on until disc is available to read:

- DVD: < 18 sec. (typical), < 20 sec. (max.)
- CD: < 13 sec. (typical), < 15 sec. (max.)

Access Time Time measured from command phase until bus free (no disconnect):

- DVD: < 150 msec. (typical), < 180 msec (max.)
- CD: < 100 msec. (typical), < 130 msec (max.)

Sleep Mode Entered after 2 minutes of no access to drive (default setting)

Wake Mode < 5 sec. (max.) to start drive after sleep

Environmental Conditions

Mounting Position	Horizontal or vertical orientation: <ul style="list-style-type: none">▪ Horizontal: ± 15 degrees▪ Vertical: Front side up or down, ± 15 degrees
Operating Temperature	5 to 40 degrees Celsius
Operating Humidity	20 to 80% (non-condensing)
Storage Temperature	-40 to 60 degrees Celsius
Storage Humidity	20 to 95 % (non-condensing)
Acoustic Noise	Playing balanced disc: Maximum 46dB Playing unbalanced disc: Maximum 46dB Tray ejecting: Maximum 50dB
Vibration, Operating	Sine sweep 5 minutes: <ul style="list-style-type: none">▪ CD/DVD read: $0.15G_{0-Pk}$ (5-300Hz)▪ CD-R write: $0.15G_{0-Pk}$ (5-300Hz)▪ CD-RW rewrite: $0.10G_{0-Pk}$ (5-300Hz)▪ DVD write: $0.10G_{0-Pk}$ (5-300Hz)
Vibration, Non-Operating	Sine sweep 5 minutes: $2.0G_{0-Pk}$ (5-300Hz) (Power off, without disc)
Shock, Operating	11msec half sine, 10 sec interval: <ul style="list-style-type: none">▪ CD read: $5.0G_{0-Pk}$ (5-300Hz)▪ DVD read: $5.0G_{0-Pk}$ (5-300Hz)▪ CD-R write: $1.5G_{0-Pk}$ (5-300Hz)▪ CD-RW rewrite: $0.5G_{0-Pk}$ (5-300Hz)▪ DVD write: $0.5G_{0-Pk}$ (5-300Hz)

Environmental Conditions (continued)

Shock, Non-operating Permissible acceleration range (cm/sec):

- Bottom: 594.0
- Top: 420.0
- Left: 507.9
- Right: 507.9
- Front: 462.5
- Rear: 462.5

(Power off, without disc)

Electrostatic Discharge ±8KV aerial discharge
 ±4KV contact discharge
 Both with no hard errors, no damage

Reliability

MTBF 60,000 hours

Tray Loading 50,000 load/unload cycles

Read Error Rate CD-ROM Mode 1: 1 block/10¹² bits
 CD-ROM Mode 2: 1 block/10⁹ bits

Safety, Laser, and EMC Standards

Country/ Region	Type	Agency	Standard
USA	Safety	UL	UL 60950
	Laser	FDA	FDA 21 CFR 1040.10 and 1040.11
Canada	EMC	FCC	FCC Part15B
	Safety	UL (C-UL)	CSA 22.2 No. 60950
Europe	EMC	IC	ICES-003 Class B
	Safety	CE	EN60950/IEC60950
	Laser	CE	EN60825-1
Taiwan	EMC	CE	EN55024, EN50022 Class B
	EMC	BSMI	CNS13438 Class B
	EMC	MIC	
Australia	EMC	C-Tick	EN55022 Class B

Specifications for the PX-716A Internal ATAPI Drive

Minimum System Requirements—PX-716A Internal ATAPI Drive

Computer	Pentium 4, 1.4-GHz or equivalent
Minimum RAM	256 MB
Hard Disk Size	1 GB of free space to write to a CD in image mode, or 10 GB of free space to create DVD images. (For more accurate guidelines, see the help files or documentation for the recording software you're using.)
Interface	IDE (ATAPI) supported
Operating System	Windows XP, 2000, Me, or 98SE

NOTE: Roxio Easy Media Creator 7 requires Microsoft Windows XP (SP 1 or later) or Microsoft Windows 2000 (SP 4 or later). This product will not work with Windows 95, Windows 98, Windows 98SE, or Windows ME.

For real-time MPEG-2 capture and burning, Easy Media Creator 7 requires a 1.6-GHz Pentium 4 or equivalent.