

DEC Laser 1152 Printer

Level 2 PostScript Programmer's
Supplement

EK-PSPTR-RM. A01

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A Definition of Terms

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Preface

This book discusses the following areas as they apply to the DEClaser 1152 printer:

- Product-specific, key-value pairs for standard Level 2 dictionaries
- Supported media
- Supported fonts
- DECimage
- Definition of terms

This book supplements the following documents:

PostScript Language Reference Manual Supplement by Adobe Systems Incorporated, January 24, 1992; available through the Adobe Systems Developer Support organization (see address below).

PostScript Language Reference Manual, Second Edition by Adobe Systems Incorporated, ISBN 0-201-18127-4; available in bookstores

The priority of PostScript Level 2 information for the DEClaser 1152 printer is as follows:

1. *PostScript Level 2 Printers Programmer's Supplement*
2. *PostScript Language Reference Manual Supplement, January 24, 1992*
3. *PostScript Language Reference Manual, Second Edition*

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1 Key-Value Pairs

This section lists all the keys and the associated values for use with the DEClaser 1152 printer.

Table 1 Page Device Parameters

Parameter	Default	Type	Valid Values
BeginPage	{pop}	procedure	any PostScript language procedure
EndPage	{exch pop 2 ne}	procedure	any PostScript language procedure
ExitJamRecovery	true	Boolean	true, false
HWResolution	[300 300]	array	read-only
ImagingBBox	null	array or null	4-element array of integers or null
InputAttributes	<i>See Table 2 and Table 3</i>	dictionary	PostScript language dictionary
Install	<i>See Section 2.1</i>	procedure	any PostScript Language procedure
ManualFeed ¹	false	Boolean	true, false
ManualFeedTimeout	60	integer	<i>pos_integer32</i> ³
Margins ¹	[0 0]	array	any 2-element array of integers in the range of -512 to 511.
MediaColor	null	string	<i>string_nonnull</i> or null
MediaType	null	string	<i>string_nonnull</i> or null
MediaWeight ⁴	null	real	<i>pos_real_32</i> or null
NumCopies	null	integer	<i>pos_integer32</i> or null
OutputFaceUp	false	Boolean	false
OutputPage	true	Boolean	true, false

¹Persistent across power cycles if set in an unencapsulated job, or from the front panel.

³Look for explanations of *italicized* table entries in Table A-1.

⁴MediaWeight will select the media with an allowance of plus or minus 2%. If two trays have defined media weights within this tolerance of each other, Policies are invoked.

(continued on next page)

Table 1 (Cont.) Page Device Parameters

Parameter	Default	Type	Valid Values
PageSize	if 110VAC [612 792], if 220VAC [595 842]	array	any two element array of integers ²
Policies	<</PolicyNotFound dictionary 1 /PageSize 0 /PolicyReport {pop}>>		PostScript language dictionary

²The size of the integers is limited to the array describing the largest media that the DEClaser 1152 can handle, namely legal size. However, setpagedevice will flag a match if the array describes a [width,height] or a [height,width] and makes the appropriate rotations and transformations. Do not confuse PageSize with the /PageSize entry in the Policies dictionary. See Table 3.

There are factory-set defaults for the InputAttributes key in the page device dictionary. These defaults depend on the expected power line voltage and if an optional cassette is installed. The DEClaser 1152 does not do voltage detection to determine the default settings.

The InputAttributes default dictionaries are in Table 2 and Table 3.

Table 2 Default Dictionaries for InputAttributes - Multipurpose Feeder Only

Voltage	Dictionary
110VAC	<< 0 <</PageSize [612 792]>> >>
220VAC	<< 0 <</PageSize [595 842]>> >>

Table 3 Default Dictionaries for InputAttributes - with Optional Tray Installed

Voltage	Dictionary
110VAC	<< 0 <</PageSize [612 792] >> /Priority[1 0] 1<</PageSize [value of inserted tray] or [297 684]>> >>
220VAC	<< 0 <</PageSize [595 842] >> /Priority[1 0] 1<</PageSize [value of inserted tray] or [297 684]>> >>

Table 4 User Parameters

Parameter	Default	Type	Valid Values
JobName	()	string	<i>string_prn</i>
JobTimeout ³	from system parameters	integer	≥ 0
MaxDictStack	530	integer	≥ 0
MaxExecStack	10015	integer	≥ 0
MaxOpStack	100000	integer	≥ 0
MaxFontItem	12500	integer	≥ 0
MaxFormItem	100000	integer	≥ 0
MaxLocalVM	2147483647 bytes ¹	integer	≥ <i>Min</i> ≤ <i>Max</i> ⁴
MaxScreenItem	6000	integer	≥ 0
MaxPatternItem	20000	integer	≥ 0
MaxUPathItem	5000	integer	≥ 0
MinFontCompress	1250	integer	≥ 0
VMReclaim ²	0	integer	0, -1, or -2
VMThreshold	40000	integer	≥ 0
WaitTimeout	from system parameters	integer	≥ 0

¹This number (>2000 MEG) is the maximum theoretical limit.

²Garbage collection control: a value of 0 enables garbage collection, -1 disables it for local VM, and -2 disables it for both local and global VM.

³NOT subject to save and restore.

⁴The *Min* value is an integer of value equal to the current local VM. The *Max* value is an integer of value equal to the largest possible integer, which is 2147483647. If a value is set that is less than the amount currently in use, the value will change to amount currently in use.

Table 5 System Parameters

Parameter	Default	Type	Valid Values
BuildTime	Development Dependent	integer	read-only
ByteOrder	false	Boolean	read-only
CurDisplayList	0	integer	read-only
CurFontCache	0	integer	read-only
CurFormCache	0	integer	read-only
CurInputDevice	current value	string	read-only
CurOutlineCache	0	integer	read-only
CurOutputDevice	current value	string	read-only
CurPatternCache	0	integer	read-only
CurScreenStorage	0	integer	read-only
CurSourceList	0	integer	read-only
CurUPathCache	0	integer	read-only
DoStartPage ¹	true	Boolean	true, false
FactoryDefaults ^{1‡}	false	Boolean	true, false
FatalErrorAddress	0	integer	<i>integer32</i>
FontResourceDir	(fonts/)	string	<i>string_nonnull</i>
GenericResourceDir	(Resource/)	string	<i>string_nonnull</i>
GenericResourcePathSep	(/)	string	<i>string_nonnull</i>
JobTimeout ¹	0	<i>pos_integer32</i>	0 or ≥ 20 sec ²
MaxDisplayList	83866	integer	<i>pos_integer32</i>
MaxFontCache	285000	integer	<i>pos_integer32</i>
MaxFormCache	100000	integer	<i>pos_integer32</i>
MaxOutlineCache	65536	integer	<i>pos_integer32</i>
MaxPatternCache	100000	integer	<i>pos_integer32</i>

¹Persistent across power cycles.

²If this value is not 0 (infinite) then the value must be at least 20 seconds or greater. The minimum time to produce a single page is only slightly less than 20 seconds.

‡Setting this parameter to *true* will return the printer settings to North American defaults. Users using the A4 paper size as a default must manually change the default paper size from Letter to A4. See Table 1. However, through the front panel, there is a facility to set one of two different default sets.

(continued on next page)

Table 5 (Cont.) System Parameters

Parameter	Default	Type	Valid Values
MaxScreenStorage	60000	integer	<i>pos_integer32</i>
MaxSourceList	24576	integer	<i>pos_integer32</i>
MaxUPathCache	300000	integer	<i>pos_integer32</i>
PageCount ^{1†}	current value	integer	read-only
PrinterName ¹	(DEClaser 1152)	string	<i>string32_nonnull</i>
RamSize	current value	integer	read-only
RealFormat	(IEEE)	string	read-only
StartJobPassword ¹	()	string	<i>string32_nonnull</i>
SystemParamsPassword ¹	(DEClaser 1152)	string	<i>string32_nonnull</i>
ValidNV	current value	Boolean	read-only
WaitTimeout ¹	40	integer	<i>pos_integer32</i> ⁵
Revision	Returns systemdict value	integer	read-only

Parameters Unique to the DEClaser 1152

SheetCount ^{1†}	current value	integer	read-only
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Parameters Used for DECimage Control³

InstallDotSize	1	integer	≥ 1
InstallPunch0	0.0	real	$\geq 0 \leq 1$
InstallPunch1	1.0	real	$\geq 0 \leq 1$
InstallSharp	1.5	real	any real number ≥ -1 ⁴
InstallSpecialImageActive	false	Boolean	true, false

¹Persistent across power cycles.

³The values of these parameters is stored in NVRAM.

⁴No sharpening is done with a value of 1.0. Useful values are in the range -1.0 to +4.0. Values less than -1.0 are not meaningful.

⁵If the value is not 0 (infinite) then the value must be ≥ 15 .

†Unaffected by a reset to factory defaults.

Table 6 Valid Combinations for /Interpreter and /Protocol

/Interpreter	/Protocol
/LaserJetIIP	/Raw
/PostScript	/Binary
/PostScript	/Normal

Table 7 Parameters for %Serial%, %Serial_NV%, %Serial_Pending%

Parameter	Default	Type	Valid Values
Baud	9600	integer	$\geq 0 \leq 38400$, rounded ¹
CheckParity	false	Boolean	true, false
DataBits	8	integer	8,7
Enabled	true	Boolean	true, false
FlowControl ³	/XonXoff	name	/XonXoff, /Dtr, /EtxAck
HasNames	false	Boolean	read-only
Interpreter	/PostScript	name	/PostScript, /LaserJetIIP
On	true	Boolean	true, false
Parity	/None	name	/Mark, /Space, /Odd, /Even, /None
Protocol	/Normal	name	/Normal, /Raw, /Binary ²
StopBits	1	integer	1,2
Type	/Communications	name	read-only

¹Only certain discrete values are allowed. The communications hardware will round the value entered to the nearest valid value. When queried, the value will reveal the entered number and not the rounded value.

²/Binary protocol is Adobe's tagged 8-bit protocol, /Raw is a straight 8-bit protocol, and /Normal gives special handling to various control characters.

³RCV XON/XOFF is used implicitly if Protocol is set to /Raw, and the current flow control was XON/XOFF. There is no other provision to select this flow control method.

Table 8 Parameters for %SerialB%, %SerialB_NV%, %SerialB_Pending%

Parameter	Default	Type	Valid Values
Baud	9600	integer	$\geq 0 \leq 38400$, rounded ¹
CheckParity	false	Boolean	true, false
DataBits	8	integer	8,7
Enabled	false	Boolean	true, false
FlowControl ³	/XonXoff	name	/XonXoff, /Dtr, /EtxAck
HasNames	false	Boolean	read-only
Interpreter	/PostScript	name	/PostScript, /LaserJetIIP
On	true	Boolean	true, false
Parity	/None	name	/Mark, /Space, /Odd, /Even, /None
Protocol	/Normal	name	/Normal, /Raw, /Binary ²
StopBits	1	integer	1,2
Type	/Communications	name	read-only

¹Only certain discrete values are allowed. The communications hardware will round the value entered to the nearest valid value. When queried, the value will reveal the entered number and not the rounded value.

²/Binary protocol is Adobe's tagged 8-bit protocol, /Raw is a straight 8-bit protocol, and /Normal gives special handling to various control characters.

³RCV XON/XOFF is used implicitly if Protocol is set to /Raw, and the current flow control was XON/XOFF. There is no other provision to select this flow control method.

Table 9 Parameters for %Parallel%, %Parallel_NV%, %Parallel_Pending%

Parameter	Default	Type	Valid Values
Enabled	true	Boolean	true, false
HasNames	false	Boolean	read-only
Interpreter	/PostScript	name	/PostScript, /LaserJetIIP
On	true	Boolean	true, false
OutputDevice	()	string	(%Serial%), (%SerialB%), ()
Protocol	/Normal	name	/Normal, /Raw, /Binary
Type	/Communications	name	read-only

Table 10 Parameters for %LocalTalk%, %LocalTalk_NV%, %LocalTalk_Pending%

Parameter	Default	Type	Valid Values
Enabled	true	Boolean	true, false
HasNames	false	Boolean	true, false
Interpreter	/PostScript	name	/PostScript, /LaserJetIIP
LocalTalkType ²	(LaserWriter)	string	<i>string32_nonull</i>
NodeID ¹	0	integer	read-only in the range of 0-254 inclusive
On	true	Boolean	true, false
Type	/Communications	name	read-only

¹Legal addresses are values between 1 and 254 inclusive. A value of 0 indicates that no valid address has been established.

²It is recommended that the user NOT modify the value of this parameter.

Table 11 Parameters for %cartridge1% and %cartridge2%

Parameter	Default ³	Type	Valid Values
CartridgeID	read off the cartridge	integer	read-only
CartridgeType	4	integer	read-only
Free	0	integer	read-only
HasNames	true	Boolean	read-only
InitializeAction	0	integer	read-only
LogicalSize ²	2097152	integer	read-only
Mounted	true ¹	Boolean	true (mount), false (dismount)
PhysicalSize	equal to LogicalSize	integer	read-only
Removable	true	Boolean	read-only
Searchable	true	Boolean	read-only
SearchOrder	11	integer	read-only
Type	/FileSystem	name	read-only
Writeable	false	Boolean	read-only

¹The system attempts to mount the filesystem device upon startup. If mounting is successful, then the value will be *true*, otherwise *false*.

²When set, *LogicalSize* specifies the size, in bytes, of the PostScript file system to be created, and is used as an argument to the action carried out by *InitializeAction*. If *LogicalSize* is 0, *InitializeAction* uses a default size that is normally the size of the entire device. When queried, this parameter indicates the current size of the PostScript file system on the device. A value of zero indicates that there is no valid PostScript file system.

³Only valid when a cartridge is installed.

Table 12 Regular Resources

Category Name	Instances
ColorRendering	/DefaultColorRendering
ColorSpace	None
Encoding	/ISOLatin1Encoding /StandardEncoding
Font	/Courier ¹

¹Standard Font Complement.

(continued on next page)

Table 12 (Cont.) Regular Resources

Category Name	Instances
	/Courier-Bold ¹
	/Courier-BoldOblique ¹
	/Courier-Oblique ¹
	/Emulatorfont ¹
	/Emulatorfont-Bold ¹
	/Helvetica ¹
	/Helvetica-Bold ¹
	/Helvetica-BoldOblique ¹
	/Helvetica-Oblique ¹
	/Helvetica-Narrow ¹
	/Helvetica-Narrow-Bold ¹
	/Helvetica-Narrow-BoldOblique ¹
	/Helvetica-Narrow-Oblique ¹
	/Symbol ¹
	/Times-Bold ¹
	/Times-BoldItalic ¹
	/Times-Italic ¹
	/Times-Roman ¹
	<i>/Cartridge-Font-Name²</i>
Form	None
Halftone	/DefaultOtherHalftone
OutputDevice	Default
Pattern	None

¹Standard Font Complement.

²A name of a font in a cartridge that may be installed.

Table 13 Implicit Resources

Category Name	Instances	Instances
ColorRenderingType	1	
ColorSpaceFamily	/CIEBasedA	/CIEBasedABC
	/DeviceCMYK	/DeviceGray
	/DeviceRGB	/Indexed
	/Pattern	/Separation
Emulator	/LaserJetIIP	
Filter	/ASCII85Decode	/ASCII85Encode
	/ASCIHexDecode	/ASCIHexEncode
	/CCITTFaxDecode	/CCITTFaxEncode
	/DCTDecode	/DCTEncode
	/LZWDecode	/LZWEncode
	/NullEncode	/RunLengthEncode
	/RunLengthDecode	/SubFileDecode
FMapType	2, 3, 4, 5, 6, 7, 8	
FontType	0, 1, 3, 4, 5	
FormType	1	
HalftoneType	1, 2, 3, 4, 5, 7†	
ImageType	1	
IODEvice	(%Serial%)	(%Serial_NV%)
	(%Serial_Pending%)	
	(%SerialB%)	(%SerialB_NV%)
	(%SerialB_Pending%)	
	(%Parallel%)	(%Parallel_NV%)
	(%Parallel_Pending%)	
	(%LocalTalk%)	(%LocalTalk_NV%)
	(%LocalTalk_Pending%)	
	(%cartridge1%)‡	(%cartridge2%)‡
	(%LaserJetIIP%)	

†A HalftoneType value of 7 is required for DECimage.

‡Only if a cartridge is installed.

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Table 13 (Cont.) Implicit Resources

Category Name	Instances	Instances
PatternType	1	

Table 14 Resources Used to Define New Resource Categories

Category Name	Instances	Instances
Category	/Category	
	/ColorRendering	/ColorRenderingType
	/ColorSpace	/ColorSpaceFamily
	/Emulator	/Encoding
	/Filter	/FMapType
	/Font	/FontType
	/Form	/FormType
	/Generic	
	/Halftone	/HalftoneType
	/ImageType	/IODevice
	/OutputDevice	
	/Pattern	/PatternType
	/ProcSet	/HWOptions
Generic	None	

Table 15 Standard statusdict Compatibility Operators

statusdict Operator	statusdict Operator
a4tray	appletalktype
b5tray	buildtime
byteorder	checkpassword
defaulttimeouts	dostartpage
emulate	firstside ¹

¹The PostScript Language Supplement states that these operators are defined only when the page device parameter Duplex is present. The statement in the Supplement is untrue for these operators which will be defined in statusdict on both simplex and duplex printers.

(continued on next page)

Table 15 (Cont.) Standard statusdict Compatibility Operators

statusdict Operator	statusdict Operator
hardwareiomode	jobname
jobtimeout	legaltray
lettertray	manualfeed
manualfeedtimeout ³	margins
newsheet ¹	pagecount
pagestackorder	printername
product	ramsize
realformat	revision
setdefaulttimeouts ⁴	setdostartpage ⁴
sethardwareiomode ⁴	setjobtimeout
setmargins ⁴	setpagestackorder ⁴
setprintername ⁴	setscbatch ⁴
setscinteractive ²	setsoftwareiomode ⁴
sccbatch	sccinteractive ²
sheetcount	softwareiomode
waittimeout	

¹The PostScript Language Supplement states that these operators are defined only when the page device parameter Duplex is present. The statement in the Supplement is untrue for these operators which will be defined in statusdict on both simplex and duplex printers.

²Functions as a NO-OP.

³manualfeedtimeout only exists if it is defined.

⁴This operator can only be executed successfully in an unencapsulated job.

Table 16 Digital Specific Additions to statusdict Compatibility Operators

statusdict Operator	statusdict Operator
3.875x7.5tray	4.125x9.5tray
7x9tray	a5tray
c5tray	DECimage
DECimageparams	defaultDECimage

(continued on next page)

Table 16 (Cont.) Digital Specific Additions to statusdict Compatibility Operators

statusdict Operator	statusdict Operator
defaultDECimageparams	defaultenvelopetraysize
defaultmansize	defaultpagetimeout
defaultpapertray	dltray
envelopetray	executivetray
halflettertray	pagetimeout
papertray	setDECimage
setDECimageparams	setdefaultDECimage ¹
setdefaultDECimageparams ¹	setdefaultenvelopetraysize ¹
setdefaultmansize ¹	setdefaultpagetimeout ¹
setdefaultpapertray ¹	setpagetimeout
setpapertray	twothirdsa4tray

¹This operator can only be executed successfully in an unencapsulated job.

Table 17 Standard userdict Compatibility Operators

userdict Operator	userdict Operator	userdict Operator
a4	a4small	b5
legal	letter	lettersmall
note ¹		

¹The note operator functions differently from the PostScript Level 1 counterpart. The level 1 function of imposing a 'small' clippath on the letter, a4, and legal has been replaced by a level 2 function of imposing a smaller clippath to any currently defined page size.

Table 18 Digital Specific Additions to userdict Compatibility Operators

userdict Operator	userdict Operator	userdict Operator
3.875x7.5	4.125x9.5	7x9
a5	c5	dl
executivepage	halfletter	legalsmall

(continued on next page)

Table 18 (Cont.) Digital Specific Additions to userdict Compatibility Operators

userdict Operator	userdict Operator	userdict Operator
twothirdsa4		

All Level 1 compatibility operators are implemented by way of PostScript Level 2 procedures. This has caused some Level 2 operators to return different error messages from their Level 1 counterparts. Always check the range and type of operands used with compatibility operators carefully.

Table 19 DEClaser 1152 Media Sizes and Operators

Operator	Size ¹	Dimensions ¹	Output Tray ³
3.875x7.5tray ³	#7 3/4 envelope	3 7/8 x 7.5 in.	front
4.125x9.5tray ³	#10 envelope	4.125 x 9.5 in.	front
7x9tray ⁶	Digital manual	7.0 x 9.0 in.	either
a4tray	A4	210 x 297 mm.	either
a5tray ³	A5	148 x 210 mm.	either
b5tray ⁶	B5	182 x 257 mm.	either
c5tray ³	C5 envelope	162 x 229 mm.	front
dltray ³	C5/6 envelope	110 x 220 mm.	front
envelopetray	Variable	min: 98 mm. x 190 mm, max: 162 mm. x 250 mm.	front ⁵
executivetray	Executive	7.25 x 10.5 in. ⁴	either
halflettertray ³	Half letter	5.5 x 8.5 in.	either
legaltray	Legal	8.5 x 14.0 in.	either
lettertray	Letter (or A)	8.5 x 11.0 in.	either
twothirdsa4tray ⁶	2/3 A4	198 x 210 mm.	either

¹The Size and Dimensions columns are provided for information only.

³Not supported by tray tags. In the Level 1 implementation, these operators would have defaulted to the envelopetray. The Level 2 implementation requires that the InputAttributes in the page device be defined accordingly for the envelopetray to be successfully selected.

⁶Media feeds only through the multipurpose tray. Equivalent to 0 setpapertray *mediasize*.

Table 20 DEClaser 1152 Page Size Operators

Operator	Imageable Region	Physical Media Size	/PageSize Array
3.875x7.5	3.46 x 7.3 in.	3.875 x 7.5 in.	[279 540]
4.125x9.5	3.73 x 9.3 in.	4.125 x 9.5 in.	[297 684]
7x9	6.61 x 8.8 in.	7.0 x 9.0 in.	[504 648]
a4	199.05 x 290.49 mm	210 x 297 mm	[595 842]
a4small	190.92 x 275.51 mm	210 x 297 mm	[595 842]
a5	138.09 x 204.81 mm	148 x 210 mm	[419 595]
b5	171.96 x 251.8 mm	182 x 257 mm	[515 728]
c5	151.64 x 223.77 mm	162 x 229 mm	[459 649]
dl	101.5 x 215 mm	110 x 220 mm	[311 623]
executivepage	6.93 x 10.28 in.	7.25 x 10.5 in.	[522 756]
halfletter	5.06 x 8.3 in.	5.5 x 8.5 in.	[396 612]
legal	8.1 x 13.78 in.	8.5 x 14.0 in.	[612 1008]
legalsmall	6.72 x 12.84 in.	8.5 x 14.0 in.	[612 1008]
letter	8.1 x 10.78 in.	8.5 x 11.0 in.	[612 792]
lettersmall	7.68 x 10.16 in.	8.5 x 11.0 in.	[612 792]
twothirdsa4	186.86 x 204.81 mm	198 x 210 mm	[561 595]

Table 21 DEClaser 1152 Font Cartridge Complement

Common Name	selectfont Name
ITC Avant Garde Book	/AvantGarde-Book
ITC Avant Garde Book Oblique	/AvantGarde-BookOblique
ITC Avant Garde Demi	/AvantGarde-Demi
ITC Avant Garde Demi Oblique	/AvantGarde-DemiOblique
ITC Bookman Demi	/Bookman-Demi
ITC Bookman Demi Italic	/Bookman-DemiItalic
ITC Bookman Light	/Bookman-Light
ITC Bookman Light Italic	/Bookman-LightItalic

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Table 21 (Cont.) DEClaser 1152 Font Cartridge Complement

Common Name	selectfont Name
ITC Lubalin Graph Book	/LubalinGraph-Book
ITC Lubalin Graph Book Oblique	/LubalinGraph-BookOblique
ITC Lubalin Graph Demi	/LubalinGraph-Demi
ITC Lubalin Graph Demi Oblique	/LubalinGraph-DemiOblique
ITC Souvenir Demi	/Souvenir-Demi
ITC Souvenir Demi Italic	/Souvenir-DemiItalic
ITC Souvenir Light	/Souvenir-Light
ITC Souvenir Light Italic	/Souvenir-LightItalic
New Century Schoolbook Roman	/NewCenturySchlbk-Roman
New Century Schoolbook Bold	/NewCenturySchlbk-Bold
New Century Schoolbook Italic	/NewCenturySchlbk-Italic
New Century Schoolbook Bold Italic	/NewCenturySchlbk-BoldItalic
Palatino Roman	/Palatino-Roman
Palatino Bold	/Palatino-Bold
Palatino Italic	/Palatino-Italic
Palatino Bold Italic	/Palatino-BoldItalic
Zapf Chancery Medium Italic	/ZapfChancery-MediumItalic
Zapf Dingbats	/ZapfDingbats

Note

Hot-swapping of font cartridges is not allowed on the DEClaser 1152.

Table 22 Escape Sequence Value to Return to PostScript

Interpreter	Return Sequence	Hex
PCL4	ESC DEL 0	1B 7F 30

Table 23 setsoftwareiomode Parameters

Interpreter	Parameter Value
PCL4	5 ¹
PostScript	0 ²
PostScript Binary	100 ³

¹This sets the value of the Interpreter parameter to /LaserJetIIP and the value of the Protocol parameter to /Raw on the current communications device. See Table 7, Table 8, Table 9, and Table 10.

²This sets the value of the Interpreter parameter to /PostScript and the value of the Protocol parameter to /Normal on the current communications device. See Table 7, Table 8, Table 9, and Table 10.

³This sets the value of the Interpreter parameter to /PostScript and the value of the Protocol parameter to /Binary on the current communications device. See Table 7, Table 8, Table 9, and Table 10.

Table 24 Special Character Codes

Character	Code	Function
Control-A	1	Used when the Protocol is Binary. It is used as a prefix to quote the next character sent. Refer to the <i>Adobe Binary Communications Protocol, Technical Note #5081</i> , dated May 4, 1991.
Control-C	3	Asynchronous interrupt: It causes the execution of the PostScript language interrupt error. Execution of interrupt is sandwiched between execution of two objects being interpreted in normal sequence. The default definition of interrupt executes a stop. This provides the user with the ability to explicitly abort a PostScript computation. Stop is executed without the enclosing stopped context. The server throws away data from the data stream until an end-of-transmission character is found, in a process known as flushing. If queried with a Control-T character, while in this flushing state, the printer will return a "waiting" status message. If a Control-C character is received while in this state, the flushing process will ignore the Control-C and continue flushing until a Control-D is seen or until the entire buffer is flushed. If a Control-C is sent while the interpreter is in an "idle" state, the Control-C will be consumed and an error "offending command interrupt" message will be generated.
Control-D	4	End-of-transmission

(continued on next page)

Table 24 (Cont.) Special Character Codes

Character	Code	Function
Control-E	5	<i>Reserved for future use</i>
Control-Q	17	Start output (XON), works only if XON/XOFF flow control is in use.
Control-S	19	Stop output (XOFF), works only if XON/XOFF flow control is in use.
Control-T	20	Status query: causes the server to produce, asynchronously, a one-line message that describes the status of the interpreter.
Line-feed	10	End-of-line: This is the PostScript language newline character. See Section 3.8.1 of the <i>PostScript Language Reference Manual, Second Edition</i> . If a return and a line-feed are received in sequence, only one newline character is passed on to the interpreter. When a newline character is written to the standard output file, it is translated to the two character sequence return, line-feed.
Return	13	End-of-line: translated to the PostScript language newline character.
Control-\	26	<i>Reserved for future use</i>

Table 25 Parameters For the %LaserJetIIP% Emulator

Parameter	Default	Type	Valid Values
Copies	1	integer	≥ 0
FontFixed	true	Boolean	true, false
FontHeight	12	real	≥ 0.0
FontItalic	false	Boolean	true, false
FontPitch	10	real	≥ 0.0
FontSymbolSet	277	integer	≥ 0
FontTypeface	3	integer	≥ 0
FontWeight	0	integer	$\geq -7 \leq 7$
Landscape	false	Boolean	true, false
LinesPerInch	6	real	≥ 0.0
ManualFeed	false	Boolean	true, false

(continued on next page)

Table 25 (Cont.) Parameters For the %LaserJetIIP% Emulator

Parameter	Default	Type	Valid Values
MaxLJMemory	300000	integer	≥ 0
Type	(Emulator)	string	(Emulator)
WaitTimeout	30	integer	≥ 0

2 Using DECimage with PostScript Level 2

DECimage renders images specified in the DeviceGray colorspace, with 2, 4, 8, or 12 bits per sample. In order to use DECimage, a halftone dictionary of type 7 must be used. Refer to Table 26 for a list of the keys in the type 7 dictionary.

Table 26 Keys for Halftone Dictionary of Type 7

Key	Default Value	Type	Valid Values
DotSize ⁶	1	integer	any integer ≥ 1
HalftoneType ¹	7	integer	7
Punch ⁴	[0.0 1.0]	array	positive real numbers not greater than 1.0
OtherHalftone ³	DefaultOtherHalftone	dictionary	halftone dictionary of type 1, 2, 3, 4, or 5
Sharp ⁵	1.5	real	any real number. See Table 5.
SpecialImageActive ²	true	Boolean	true, false

¹Must be 7.

²*true* means use DECimage rendering whenever possible, and *false* means do not use DECimage rendering.

³This is the halftone dictionary that gets used when DECimage is not used.

⁴This parameter is optional. The first array entry corresponds to Punch0, and the second array entry corresponds to Punch1 in a Level 1 DECimage implementation.

⁵This parameter is optional. It is the same as the Sharp value in Level 1 DECimage. A rangecheck error will occur if a value of less than -1 is used.

⁶This parameter is optional. It is the same as DotSize in a Level 1 implementation of DECimage.

In order to keep changes made to the DECimage parameters persistent, five new keys have been added to the system parameters dictionary. All of these are values used by the Install procedure in the page device dictionary to initialize the type 7 halftone dictionary. The Install procedure will run every time the setpagedevice operator is used. This means that non-persistent changes to the DECimage parameters will be overwritten by a call to setpagedevice. If setpagedevice is used inside a save and restore, then there is effectively an additional setpagedevice performed when the restore executes. Refer to Table 5 for a list of the system parameters associated with DECimage.

2.1 Default Install Procedure

The default Install procedure in the page device contains the following code to set the halftone, as well as some other graphics setup.

```
/Install { currentsystemparams begin
  << /HalftoneType 7
    /SpecialImageActive InstallSpecialImageActive
    /OtherHalftone /DefaultOtherHalftone /Halftone findresource
    /Punch [InstallPunch0 InstallPunch1]
    /Sharp InstallSharp
    /DotSize InstallDotSize
  >> sethalftone
  end
  {}settransfer
  false setstrokeadjust
  /DefaultColorRendering /ColorRendering findresource setcolorrendering
} bind def
```

The DEClaser 1152 is set-up with a type 7 halftone by default. Whether or not DECimage is turned on is dependent on the value of the system parameter InstallSpecialImageActive.

A

Definition of Terms

Table A–1 Terms found in this document

Term	Definition
integer16	An integer in the range of -2^{15} to $2^{15} - 1$
integer32	An integer in the range of -2^{31} to $2^{31} - 1$
neg_integer16	An integer in the range of -2^{15} to -1
neg_integer32	An integer in the range of -2^{31} to -1
pos_integer16	An integer in the range of 0 to $2^{15} - 1$
pos_integer32	An integer in the range of 0 to $2^{31} - 1$
pos_real32	A real number in the range of 0 to $10^{\pm 38}$ approximately. Values less than 10^{-38} will be converted to 0.
string32_nonull	A string of up to 32 non-null characters
string_nonull	A string of up to 65535 non-null characters
string_prn	A string of up to 65535 characters in the ASCII printable range

