
SAP Printing

Customer documentation

Volume 3 : [DC68]

Device-specific information

for

- Ricoh Pro 907
Pro 1107
Pro 1357

Version: 1.25

Abstract:

This document contains device-specific information about the device hardware and accessories, the configurable features, related limitations, and the commands necessary to configure the settings in the device type.

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Important notice

Parts of this manual are subject to change without prior notice.

1. General Device Information

This chapter contains general information about the devices.

SAP device types to use:

- PCL-based **ZB0x**, ver 025+

Device / Model name:

Device / Model name:		
• [DC68a]	Pro 907	
• [DC68b]	Pro 1107	
• [DC68c]	Pro 1357	

Compatibilities/Emulation: HP LaserJet 4 PCL5e

Firmware (PCL): **Note:** It is recommended to always use the latest firmware.

Speed: [DC68a]: 90 ppm (A4/LTR simplex LEF)
[DC68b]: 110 ppm (A4/LTR simplex LEF)
[DC68c]: 135 ppm (A4/LTR simplex LEF)

Printer queue name lp

2. Device Hardware Accessories

This chapter contains information about the standard or optionally available hardware accessories of the devices.

The Description column indicates the name of the unit, its properties, and, where applicable, the supported paper sizes and the sheet capacity. It also contains a list of features which can be configured on the device's front panel, as well as their initial factory defaults.

For more device-specific information, see also the device's corresponding Operating Instructions manual.

Device Hardware Accessories

Unit		Description
Memory (RAM)	standard	1 GB
Hard Disk	standard	- Capacity = 160 GB
Standard Paper Trays		Standard input bins
- Tray 1	standard	- Capacity = 2 x 1000 sheets (Tandem Tray) - Paper = A4 (LEF); LTR (LEF)
- Tray 2	standard	- Capacity = 500 sheets - Paper = see (*)
- Tray 3	standard	- Capacity = 500 sheets - Paper = see (*)
A3/DLT Tray Kit (A3/11" x 17" Tray Kit)	optional	(paper input) • [A3/11"x17" Tray Unit TK5010] - Paper = A3, A4, B4, DLT, LGL (SEF); LTR - Capacity = 1000 sheets - This kit changes Tray 1 from a Tandem tray (2 x 1000 sheets; A4/LTR) to one 1000 sheets tray (A3, DLT).
Large Capacity Tray ("LCT")	optional	(paper input) • [LCIT RT5030] - consists of 3 trays - Capacity = 4550 sheets - Tray 4: 1000 sheets - Tray 5: 1000 sheets - Tray 6: 2550 sheets - Paper = see (*)
Large Capacity Tray ("Wide LCT")	optional	(paper input) • [LCIT RT5040] - consists of 3 trays - Capacity = 4000 sheets

		<ul style="list-style-type: none"> - Tray 4: 1000 sheets - Tray 5: 2000 sheets - Tray 6: 1000 sheets - Paper = see (*) - Note: All trays support. paper size A3 / DLT
Bypass ("Multi-bypass")	optional	<p>(paper input) Bypass Tray unit</p> <ul style="list-style-type: none"> • [Multi Bypass Tray Type BY5000] - mounted on top of LCT unit - Capacity = 500 sheets - Paper = see (*) - This is the input bin "Tray 7"
Cover Interposer Tray	optional	<p>(paper input)</p> <p>This option inserts paper sheets (possibly preprinted) into the sequence of printed sheets ejected by the printer before they enter the Finisher. (No image can be printed on the inserted sheets.)</p> <ul style="list-style-type: none"> • [Interposer Tray CI5010] - mounted between printer and Finisher - Finisher SR5000 is needed - Capacity = 400 sheets <ul style="list-style-type: none"> - Interposer Upper Tray: 200 sheets - Interposer Lower Tray: 200 sheets - Paper = A4 - A5 (EU); DLT - HLT (US)
Duplex unit	standard	<p>(paper path) needed for duplexing</p> <ul style="list-style-type: none"> - Paper = see (*)
Stacker Tray	optional	<p>(paper output)</p> <ul style="list-style-type: none"> • [High Capacity Stacker SK5010] - mounted between printer and Finisher - Trays: 1 Proof tray (*), 1 Shift tray - Capacity (# sheets) = <ul style="list-style-type: none"> - Proof Tray: 250 (A3 - B5; DLT - HLT) - Finisher Shift Tray: 5000 (A4 - A3; LTR - 13"x19.2") <p>Note: (*) Proof Tray This tray cannot be selected by any output bin selection command.</p> <p>Note: A 2nd Stacker can be only installed together with Finisher SR5020. Only 1 stacker is attachable, if Finisher SR5000 is installed.</p>
Finisher		<p>(paper output) device to perform stapling and/or punching functions</p> <ul style="list-style-type: none"> - only 1 Finisher can be mounted - Stapling: not all supported due to physical mechanism restrictions (see at each type below)
- Finisher SR5000 (3000 sheets Finisher with 100 sheets stapler)	optional	<ul style="list-style-type: none"> • [SR5000] - mounted at left-hand side - Trays: 1 Shift tray, 1 Proof tray ("Finisher Upper Tray") - Capacity (# sheets) = <ul style="list-style-type: none"> - Finisher Upper Tray: 500 (A4/LTR or smaller) - Finisher Shift Tray: 3000 (A4/LTR or smaller) - Staple capacity = <ul style="list-style-type: none"> - 100 sheets: A4, LTR, B5 - 50 sheets: A3, B4, DLT, LGL - Staple positions = (*)
- Booklet Finisher SR5020 (Saddle stitch finisher)	optional	<ul style="list-style-type: none"> • [Booklet Finisher SR5020] - mounted at left-hand side - Trays: 1 Shift tray, 1 Proof tray ("Finisher Upper Tray") - Capacity (# sheets) = <ul style="list-style-type: none"> - Finisher Upper Tray: 250 (A4/LTR or smaller) - Finisher Shift Tray: 2500 (A4/LTR or smaller) - Staple capacity = <ul style="list-style-type: none"> - 100 sheets: A4, LTR, B5 - 50 sheets: A3, B4, DLT, LGL - Staple positions = (*) <p>Note: The booklet finishing option cannot be supported under SAP.</p>
Punch Kits	optional	<p>(paper output) a piece of electro-mechanical hardware which can be installed into the Finisher.</p> <ul style="list-style-type: none"> - Number of punched holes can be selected via PJI command. - Only one Punch Kit can be installed.
- US 2/3-hole Punch Kit for SR5000	optional	<ul style="list-style-type: none"> • [Punch Unit PU5000 NA] - US 2/3-hole type
- EU 2/4-hole Punch Kit for SR5000	optional	<ul style="list-style-type: none"> • [Punch Unit PU5000 EU] - European 2/4-hole type
- Scandinavian 4-hole Punch Kit for	optional	<ul style="list-style-type: none"> • [Punch Unit PU5000 SC]

SR5000		- Scandinavian 4-hole type
- US 2/3-hole Punch Kit for SR5020	optional	<ul style="list-style-type: none"> • [Punch Unit PU5020 NA] - US 2/3-hole type
- EU 2/4-hole Punch Kit for SR5020	optional	<ul style="list-style-type: none"> • [Punch Unit PU5020 EU] - European 2/4-hole type
- Scandinavian 4-hole Punch Kit for SR5020	optional	<ul style="list-style-type: none"> • [Punch Unit PU5020 SC] - Scandinavian 4-hole type
- Folding Unit	optional	<ul style="list-style-type: none"> • [Multi-Folding Unit FD5000] This unit folds sheets of a larger paper size to the next smaller size. E.g. A3 folded to A4; A4 folded to A5. Mounted between Printer and Finisher. Note: This option is not supported under SAP!

Note: (*) = See the corresponding Operating Instructions manual.

Note:

There is no Mailbox.

Features configurable on the device (front panel, web interface)

The following table specifies those features that can be configured from the device's front panel and/or by using the web interface, and their initial factory default settings.

For those features whose setting is typically unlikely to be changed often, they can be configured once on the device front panel, and thus need no configuration from the SAP system side.

Note that it will be these settings that become effective if no corresponding command is sent in the print job to override them.

Feature	Initial (factory) setting	configurable on:
• "Resolution"	600 dpi	panel, web interface ("Configurations/Jobs" --> "Printer Settings")
• "Tray switching"	Off	panel, web interface ("Configurations/Jobs" --> "Printer Settings" --> "PCL Menu")
• "Auto Orientation (Portrait to Landscape)"	Off	panel, web interface ("Configurations/Jobs" --> "Printer Settings" --> "PCL Menu")
• "Face Up"	Off	web interface ("Configurations/Jobs" --> "Printer Settings")
• "Reverse Order Printing"	Off	web interface ("Configurations/Jobs" --> "Printer Settings")
• "Input Tray"	Auto Select	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Paper Size"	A4 Portrait / Letter Portrait (US)	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Paper Type"	Plain Paper	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Paper Color"	White	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Output Tray"	Finisher Upper Tray	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Copies"	1	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Collate/Stack"	Collate	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Duplex"	Off	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Staple Settings"	Off	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")
• "Punch Settings"	Off	web interface ("Virtual Printer Settings" --> "Tray Paper Settings")

3. Features & Commands

This chapter contains one section for each configurable feature.

The features are ordered by importance (how often used) and logical order (in the processing of the job).

- 3.1 - 3.7 = likely to be configured / changed
- 3.8 - 3.13 = unlikely to be changed often
- 3.14 - 3.21 = changing makes no sense or has no effect, or it must or should not be changed
- 3.22 - ... = additional features

Each section contains the following information about the feature:

1. **Description** of the **Feature**
2. Table of all possible **Settings** for this feature, and the **Values** necessary to specify in the **Command(s)**.
An (*) indicates that the interpretation of a value is subject to some restriction.
3. **Dependencies/Constraints**, other remarks
4. (for each Printer language and each related Command):
 - a. **Tag** (this is used to clearly mark where the Command is located in the device type)
 - b. **Command syntax** (see Appendix 1 below for general information on the printer language)
 - c. **Initial command** (as an example, and as it is shipped in the device type)

The entire initial command sequence of a particular device type is listed in the corresponding Volume 2.

Note: (Print controls)

For some of those features that can be specified per page, paragraph, or character, Print controls are defined. Where applicable, these are also listed in the Settings/Values table of the feature.

General remarks:

- The order in which the commands appear in the device type, and in which they are sent to the printer, is roughly the same as the one generated by our Windows drivers. To make sure the controller doesn't get problems, this order should be maintained. Please also note that some commands are sent automatically by the SAPscript driver, on which we cannot take any influence.
- Be aware that some settings may require modifications in more than 1 place !

SAP-specific syntax issues:

- A "#" at the beginning of a line is the SAP comment symbol. It means that the line will not be sent to the printer.
- Non-printable characters have to be entered as SAP escape characters.

Notation conventions:

- All commands are printed in fixed-spaced Courier font.
- The "^^^" indicates a place-holder for a value that has to be looked up from the Settings/Values table.
- <...> indicates a place-holder.
- A "##" in front of a line is to indicate that it should never be uncommented.
- [...] indicates optional text that can be omitted.

3.1 Input Bin

Description:

Specify the input bin from where to take the paper.

Settings/Values:

^^^ [P.JL.18]	^^^ [PCL.01]	Print control	Interpretation	Capacity (# sheets)
--	0	TRYST	Print out current page from currently active input bin (remains unchanged)	--
AUTO	--	--	Auto Tray Select	--
TRAY1	1	TRY01	Tray 1 [as Tandem Tray [with A3/DLT Tray Kit]	2000 1000
TRAY2	2	TRY02	Tray 2	500
TRAY3	3	TRY03	Tray 3	500
TRAY4	4	TRY04	Tray 4 ("LCT") [if LCIT RT5030 is installed] [if LCIT RT5040 is installed]	1000 1000
TRAY5	5	TRY05	Tray 5 ("LCT") [if LCIT RT5030 is installed] [if LCIT RT5040 is installed]	1000 2000
TRAY6	6	TRY06	Tray 6 ("LCT") [if LCIT RT5030 is installed] [if LCIT RT5040 is installed]	2550 1000
TRAY7	7	TRY07	Tray 7 (Multi Bypass Tray) [if Multi Bypass Tray BY5000 is installed]	500
INSERT1	10	--	Interposer Upper Tray	200
INSERT2	11	--	Interposer Lower Tray	200

Note: (PCL mapping for input bins)

The controller of this device allows to specify different mappings of PCL values to input bins.

The mapping above is temporarily forced (only for one print job) in the device type (by PCL command string <esc>|x200J). Due to the temporary character any possible predefined customer mapping for input bins is not affected and thus remains valid.

Note: (Interposer Trays)

Paper fed via one of the Interposer Trays cannot be printed on. The above-mentioned values allow to specify also an interposer tray, although no printing is possible on the pages fed. The device type does not support slip-sheet printing.

Dependencies/Constraints:

- Trays 4, 5, 6 require an LCT unit.
- Tray 7 (Bypass tray) requires the Multi Bypass Tray unit.
- For the paper sizes supported by a particular bin, please see the corresponding Operating Instructions manual.
- Custom paper size and 12" x 18" only supported from Tray 2, Tray 3; LCIT RT5040 "Wide LCT" (Tray 4, Tray 5, Tray 6) and Bypass.
- If no Input bin select command is sent, the "Input Tray" setting of the device will become effective.

Note: (Using the HPL2 ABAP list driver)

When using the HPL2 ABAP list driver, the PCL command for this setting will not become effective.

You need to use the SAP mechanism to specify the Input Bin.

Note: (The SAP mechanism to specify the Input Bin)

- For ABAP & SmartForms:

Under SAP this setting can also be specified in the definition of the Output device.

The "Output attributes for list drivers" tab has a setting named "Paper tray".

The selectable values "Tray 1" | ... | "Tray 10" | "Single sheet" | "Envelopes" | "ManualEnvelope", correspond to the Print controls TRY01 | ... | TRY10 | TRYMN | TRYEN | TRYME.

This setting is only used by the HPL2 ABAP list driver.

If the standard ABAP list driver is used, the setting has to be specified in the command at [PCL.01] in the "Printer initialization" action in the Device type.

- **For SAPscript:**

The TRYxx print control to be used for a particular page can be specified in the definition of the Form used by the document, under "Page layout" -> <page> -> [Attributes] -> "Print attributes" -> "Resource name".

- **For SAPscript and SmartForms under POSS:**

The Input Bin can be configured using POSS option 01. For more information please refer to the section on POSS in Volume 2.

Note: (Forcing a particular Input bin for SAPscript)

As explained above, the desired input bin for SAPscript can be specified in the "Resource name" field of the definition of the SAPscript FORM. If it is not desired to assign a fixed input bin to a SAPscript FORM, then this field should be left empty, and the desired input bin should rather be specified in the "Printer initialization" action of the Device type, at tag [PCL.01]. This is, however, only possible if the SAPscript FORM does not specify an input bin yet. If the SAPscript FORM does already specify an input bin that is undesired, and if it cannot be changed, please contact Technical support for how to override it.

Note:

This command can NOT be used to specify the input bin for transparencies in connection with the slip sheet function. Instead, it needs to be commented out, and the PCL commands DOCBODYTRAY [PJL.20c] and possibly TRAY [PJL.20d] have to be used.

Note:

The Cover Interposer is not a proper input bin and currently only supported as a slip-sheet tray. Please refer to section 3.23.

3.1.1 Tag: # [PJL.18] INPUT BIN 1/2

Command syntax:

- @PJL SET MEDIASOURCE = ^^^ \r\n

Initial / Example:

- #@PJL SET MEDIASOURCE = AUTO \r\n

Note: If both PJL and PCL commands are sent, the PCL setting takes precedence over the PJL setting.

3.1.2 Tag: # [PCL.01] INPUT BIN 2/2

Command syntax:

- \e&l1^^^H

Initial / Example:

- #\e&l17H

3.2 Paper Type

Description:

Paper type (**Media type**) should be configured for two reasons:

1. Different paper quality and thickness may require a different fusing temperature. This is called **Fuser control**.
2. The device keeps track of which paper type is contained in each input bin. When a certain paper type is specified in the print job, the controller can automatically select an appropriate input bin containing the requested paper type and paper size.

Both features can be configured through either the PCL command (preferred) or the PJL MEDIATYPE command.

Analogously, **Media color** can be configured, to force printing of jobs on a certain color type of paper (there is no fuser control aspect to it). This feature can be configured through either the PCL command (preferred) or the PJL MEDIACOLOR command.

Settings/Values:

Media type

^^^ [PJL.04b]	^^^ [PCL.12b]	Print control	Interpretation
PLAIN	6WdPlain	ZTPLN	Plain / Normal paper
TRANSPARENCY	13WdTransparency	ZTTRS	Transparency/OHP sheet
SPECIAL	8WdSpecial	ZTSPC	Special paper
RECYCLED	9WdRecycled	ZTRCY	Recycled paper
USERCOLOR1	7WdColor1	ZTCL1	User color1 paper
USERCOLOR2	7WdColor2	ZTCL2	User color2 paper
LETTERHEAD	11WdLetterhead	ZTLTH	Letterhead paper
PREPRINTED	11WdPreprinted	ZTPRN	Preprinted paper
PREPUNCHED	11WdPrepunched	ZTPNC	Prepunched paper
LABEL	6WdLabel	ZTLBL	Label paper
BOND	5WdBond	ZTBND	Bond paper
CARDSTOCK	10WdCardstock	ZTCST	Cardstock
COATED	7WdCoated	-- (*)	Coated paper

USED	5WdUsed	-- (*)	Back copied paper (used)
TRACING	8WdTracing	-- (*)	Translucent paper
INDEX	6WdIndex	-- (*)	Tabstock paper

Media color

^^^ [PJL.04c]	^^^ [PCL.12c]	Print control	Interpretation
"White"	6WeWhite	-- (*)	White colored paper
"Yellow"	7WeYellow	-- (*)	Yellow colored paper
"Goldenrod"	10WeGoldenrod	-- (*)	Goldenrod colored paper
"Green"	6WeGreen	-- (*)	Green colored paper
"Pink"	5WePink	-- (*)	Pink colored paper
"Buff"	5WeBuff	-- (*)	Buff colored paper
"Blue"	5WeBlue	-- (*)	Blue colored paper
"Color 1"	8WeColor 1	-- (*)	Custom color #1 (*C)
"Color 2"	8WeColor 2	-- (*)	Custom color #2 (*C)
...
"Color 80"	9WeColor 80	-- (*)	Custom color #80 (*C)

Note: (*): Currently not supported by a Print Control.

Note: (*C): For the Custom color names be aware of the blank space before the digits.

Note: [PJL.04c] Be aware of the surrounding quotes ("").

Dependencies/Constraints:

- "Label paper" is not supported by Tray 1, Tray 2, Tray 3, Tray 4, Tray 6, Bypass.
- "Transparency/OHP sheet" and "Translucent paper" is not supported by Tray 1.
- "Tabstock" is not supported by: Tray 1, Tray 2, Tray 3.
- "Coated paper" is only supported by: [LCIT RT5040] (Tray 4, Tray 5, Tray 6).
- For the paper types supported by a particular bin, please see the corresponding Operating Instructions manual.

3.2.1 Tag: # [PJL.04] PAPER TYPE 1/2

Command syntax:

- @PJL SET FUSERCONTROL = ^^^ \r\n -- [PJL.04a] -- This command is NOT supported by this device.
- @PJL SET MEDIATYPE = ^^^ \r\n -- [PJL.04b]
- @PJL SET MEDIACOLOR = ^^^ \r\n -- [PJL.04c] -- to be added at [PJL.04], if needed

Initial / Example:

- #@PJL SET FUSERCONTROL = PLAINPAPER \r\n
- #@PJL SET MEDIATYPE = PLAIN \r\n
- @PJL SET MEDIACOLOR = "Color 2" \r\n -- not contained in Device Type

3.2.2 Tag: # [PCL.12] PAPER TYPE 2/2

Command syntax:

- \e&n^^^ -- the value ^^ has the following structure: "<decimal length of keyword> W <keyword>"; the <keyword> starts with a "d" for "media type" and with an "e" for "media color".

Hence:

- \e&n#Wd... -- [PCL.12b]
- \e&n#We... -- [PCL.12c] -- to be added at [PCL.12], if needed

Initial / Example:

- #\e&n6WdPlain
- \e&n7WeYellow -- not contained in Device Type

3.3 Duplex Mode

Description:

Duplex means printing on both sides of a sheet of paper.

Depending on the **Binding edge** (the edge of the page that would be used for binding the document), there are 2 different orientations of the rear page with respect to the orientation of the front page possible and necessary.

There are two different notions of indicating the binding edge.

- The notion of **Long/Short-edge binding** is independent of the orientation of the contents of the pages.
- The notion of **Side (Left-edge) / Top binding** is related to the above through the orientation of the printout, as follows:

	Portrait	Landscape
Long-edge	Side	Top
Short-edge	Top	Side

Settings/Values:

^^^ [PJL.17a]	^^^ [PJL.17b]	^^^ [PCL.03]	Print control	Interpretation
OFF	--	0	SPMSI	Simplex
ON	LONGEDGE	1	SPMDU	Duplex, Long-edge binding
ON	SHORTEGE	2	SPMTU	Duplex, Short-edge binding (Tumble)

Dependencies/Constraints:

- For Stapling, Punching, Duplexing, Orientation, and Paper feed direction, only certain combinations make sense and are permitted. See chapter "Limitations" below.
- Duplex is disabled for these Paper types: "Label", "Tabstock", "Transparency/OHP", "Translucent" and "Back copied paper".
- Switching between different duplex modes within a document is supported.

Note: (Using the HPL2 ABAP list driver)

When using the HPL2 ABAP list driver, the PCL command for this setting will not become effective. You need to use the SAP mechanism to specify the Duplex mode.

Note: (The SAP mechanism to specify the Duplex mode)

• For ABAP & SmartForms:

Under SAP this setting can also be specified in the definition of the Output device.

The "Output attributes for list drivers" tab has a setting named "Print mode".

The selectable values are: DEFAULT, SIMPLEX, DUPLEX, and TUMBLE DUPLEX.

This setting is only used by the HPL2 ABAP list driver.

If the standard ABAP list driver is used, the setting has to be specified in the command at [PCL.03] in the "Printer initialization" action in the Device type.

• For SAPscript:

The Duplex mode to be used for a particular page can be specified in the definition of the Form used by the document, under "Page layout" -> <page> -> [Attributes] -> "Print attributes" -> "Print mode".

The selectable values are: <empty>, "S", "D", "T".

• For SAPscript and SmartForms under POSS:

The Duplex Mode can be configured using POSS option 04. For more information please refer to the section on POSS in Volume 2.

Note: (Forcing a particular Duplex mode for SAPscript)

As explained above, the desired duplex mode for SAPscript can be specified in the "Print mode" field of the definition of the SAPscript FORM. If it is not desired to assign a fixed duplex mode to a SAPscript FORM, then this field should be left empty, and the desired duplex mode should rather be specified in the "Printer initialization" action of the Device type, at tag [PCL.03]. This is, however, only possible if the SAPscript FORM does not specify a duplex mode yet. If the SAPscript FORM does already specify a duplex mode that is undesired, and if it cannot be changed, please contact Technical support for how to override it.

3.3.1 Tag: # [PJL.17] DUPLEX MODE 1/2

These commands are not necessary.

Command syntax:

- @PJL SET DUPLEX = ^^^ \r\n -- [PJL.17a]
- @PJL SET BINDING = ^^^ \r\n -- [PJL.17b]

Initial / Example:

- #@PJL SET DUPLEX = ON \r\n
- #@PJL SET BINDING = LONGEDGE \r\n

Note: If both PJL command and PCL command are sent, the PCL setting takes precedence over the PJL setting.

3.3.2 Tag: # [PCL.03] DUPLEX MODE 2/2**Command syntax:**

- \e&l^^^S

Initial / Example:

- #\e&l0S

3.4 Output Bin

Description:

The output receptacle (bin, tray) for the printed paper.

Settings/Values:

^^^ [PJL.16]	^^^ [PCL.02]	Print control	Interpretation	Capacity (# sheets)
--	1	--	Current tray (face down)	--
--	11	--	Current tray (face up)	--
OPTIONALOUTPUTBIN0	9	TRO04	Finisher Proof Tray (face-down) [on Finisher SR5000] [on Finisher SR5020]	500 250
OPTIONALOUTPUTBIN0FACEUP	19	--	Finisher Proof Tray (face-up) [on Finisher SR5000] [on Finisher SR5020]	500 250
OPTIONALOUTPUTBIN2	2	TRO03	Finisher Shift Tray (face-down) [on Finisher SR5000] [on Finisher SR5020]	3000 2500
OPTIONALOUTPUTBIN2FACEUP	12	--	Finisher Shift Tray (face-up) [on Finisher SR5000] [on Finisher SR5020]	3000 2500
OPTIONALOUTPUTBIN5	5	TRO21	Stacker Tray (face-down) [on High Capacity Stacker SK5010]	5000
OPTIONALOUTPUTBIN5FACEUP	15	--	Stacker Tray (face-up) [on High Capacity Stacker SK5010]	5000
OPTIONALOUTPUTBIN6	6	TRO22	Second Stacker Tray (face-down) [on High Capacity Stacker SK5010]	5000
OPTIONALOUTPUTBIN6FACEUP	16	--	Second Stacker Tray (face-up) [on High Capacity Stacker SK5010]	5000

Note: ("face-down" / "face-up")

To get the print result with correct page order, the output bin settings marked "face-down" have to be used. Using "face-up" leads to reverse page order.

Dependencies/Constraints:

- Finisher trays require a Finisher unit.
- All Finishers have a Proof Tray.
- The second Stacker Tray is only supported when Finisher SR5020 is attached.
- For the paper sizes supported by a particular bin, please see the corresponding Operating Instructions manual.
- Switching between different output bins within a document is supported.
- Stapled printout is always printed to the "Finisher Shift Tray".
In that case any output bin setting specified here will be overridden by the above and thus become void.
- Punched printout is forced to a specific output bin that supports punching.
On both Finisher types both Finisher trays support punching.
In case a different output bin is specified here, the punched output will be printed to the "Finisher Shift Tray".

Note: (Using the HPL2 ABAP list driver)

When using the HPL2 ABAP list driver, you need to use the PJL command for this setting.

Note: (The SAP mechanism to specify the Output Bin)

- For ABAP and non-POSS systems:
There is no SAP mechanism.

- For SAPscript and SmartForms under POSS:

The Output bin (only face-down) can be configured using POSS option 02. For more information please refer to the section on POSS in Volume 2.

3.4.1 Tag: # [PJL.16] OUTPUT BIN 1/2

Command syntax:

- @PJL SET OUTBIN = ^^^ \r\n

Initial / Example:

- #@PJL SET OUTBIN = xxx \r\n

Note: If both PJL and PCL commands are sent, the PCL setting takes precedence over the PJL setting.

3.4.2 Tag: # [PCL.02] OUTPUT BIN 2/2

Command syntax:

- \e&l1^^G

Initial / Example:

- #\e&l1G

3.5 Job Offset

Description:

There are several mechanisms conceivable to separate multiple copies of the same job. Job offset can be configured for each job individually through the PJL JOBOFFSET command. In either case, two consecutive stacks of output can be separated through sheet shifting.

Settings/Values:

^^^ [PJL.13]	Interpretation
OFF	No offset.
ON	Output is offset side-wise versus the previous.

Dependencies/Constraints:

- Rotation is not supported by this device.
- ON requires a shift tray (Finisher Shift Tray or Stacker Tray).
- A shift tray always applies shifting, unless "OFF" is specified.
- Stapled output is not shifted.

3.5.1 Tag: # [PJL.13] JOB OFFSET

Command syntax:

- @PJL SET JOBOFFSET = ^^^ \r\n

Initial / Example:

- #@PJL SET JOBOFFSET = OFF \r\n

3.6 Stapling

Description:

Set the Stapling mode. Paper output can be stapled automatically.

One can configure the **number** of staples (1/2), and their **position** (at which corner/edge) and **orientation** (vertical/horizontal/slanted). The command to be used also depends on the orientation of the document.

The stapling unit is part of the Finisher unit.

Due to mechanical reasons of the stapling unit, only certain modes are possible. See also the device's corresponding Operating Instructions manual.

The **physical** position and orientation of the staple(s) is determined and possibly restricted by the mechanism of the Finisher.

However, the printer controller can implement multiple **logical** staple positions and orientations, by combining the physical possibilities, the choice of SEF/LEF paper, and the orientation of the page (e.g. by making a 180 degree rotation).

Note: The TITLE action should not specify any commands for Stapling, because the Cover page is only 1 page.

Settings/Values:

^^^ [PJL.02]	^^^ [PJL.08]	Interpretation	#	Position of staple(s)	Orientation of staple(s)	Document orientation	Paper feed direction required
NONE	--	off / no stapling	--	--	--		--
STAPLE0	0	TLV	1	Top-Left	Vertical	Portrait	LEF
STAPLE1	0	TLH	1	Top-Left	Horizontal	Portrait	SEF
STAPLE0S	0	TLS	1	Top-Left	Slanted	Portrait	LEF
STAPLE0	180	TLV	1	Top-Left	Vertical	Landscape	SEF
STAPLE1	0	TLH	1	Top-Left	Horizontal	Landscape	LEF
STAPLE0S	180	TLS	1	Top-Left	Slanted	Landscape	SEF
STAPLE2	0	L2V	2	Left	Vertical	Portrait	LEF
STAPLE2	180	L2V	2	Left	Vertical	Landscape	SEF
STAPLE2	0	T2H	2	Top	Horizontal	Portrait	SEF
STAPLE2	0	T2H	2	Top	Horizontal	Landscape	LEF

To determine the possible combinations and the commands to be sent, please refer to the table in the section "Combinations of Feed direction, Orientation, Duplex, Stapling, Punching" below.

Dependencies/Constraints:

- Stapling requires that a Finisher Unit be installed.
- For Stapling, Punching, Duplexing, Orientation, and Paper feed direction, only certain combinations make sense and are permitted. See chapter "Limitations" below.
- Stapling is disabled for these Paper types: "Label", "Transparency" and "Translucent".
- Multiple copies should always be specified as Collated.

- The paper supported and the maximum number of sheets that can be stapled are specified in the chapter "Device Hardware Accessories" above.
- For the paper sizes that can be stapled please see the corresponding Operating Instructions manual.
- The PJJL SET STAPLE command forces the print job to a specific output bin that supports stapling. For both Finisher types, this is only the "Finisher Shift Tray".
If a different output bin is explicitly specified (at tag [PJJL.16] or [PCL.02]), that setting will be overridden by the above and thus become void.

Note: [PJJL.08]

Stapling of Landscape documents on SEF paper requires an explicit page rotation of 180°, as indicated above.

Note:

It is recommended to always explicitly specify the Duplex mode, as indicated in the section "Duplex mode" above, in order to override any existing Duplex mode setting on the device, which could be in conflict to the desired Stapling mode.

Note: (The SAP mechanism to specify the Stapling Mode)

- For ABAP and non-POSS systems:

There is no SAP mechanism.

- For SAPscript and SmartForms under POSS:

The Stapling Mode can be configured using POSS option 08. For more information please refer to the section on POSS in Volume 2.

3.6.1 Tag: # [PJJL.02] STAPLING MODE**Command syntax:**

- @PJJL SET FINISH = ^^^ \r\n

Initial / Example:

- #@PJJL SET FINISH = NONE \r\n

3.6.2 Tag: # [PJJL.08] ROTATION**Command syntax:**

- @PJJL SET ROTATION = ^^^ \r\n

Initial / Example:

- #@PJJL SET ROTATION = 180 \r\n

3.7 Punching

Description:

Set the Punching mode. Paper output can be 2/3/4-hole punched automatically.

One can configure the **number** of holes and their **position** (at which edge).

The command to be used depends on the orientation of the document output.

The Punching unit is part of the Finisher unit.

Due to mechanical reasons of the Punching unit, only certain modes are possible.

See also the device's corresponding Operating Instructions manual.

Settings/Values:

^^^ [PJJL.03]	^^^ [PJJL.08]	Interpretation	Position of holes	Document orientation	Paper feed direction required
NONE	--	off / no punching	--	--	--
(*)	0	LP	Left	(Portrait)	LEF
(*)	180	LL	Left	(Landscape)	SEF
(*)	0	TP	Top	(Portrait)	SEF
(*)	0	TL	Top	(Landscape)	LEF

Note: (*)

This can be any of the following values: { NA2, STD3, STD2, EU4, NE4 }.

For details please refer to the table below.

Dependencies/Constraints:

- Punching requires a Finisher Unit with Punch Unit installed.
- For Stapling, Punching, Duplexing, Orientation, and Paper feed direction, only certain combinations make sense and are permitted. See chapter "Limitations" below.
- The Input bin should be set to Auto Tray Select, or it must be ensured that the paper in the selected tray has the correct paper feed direction.
- Punching is disabled for these Paper types: "Label", "Transparency" and "Translucent".
- Some paper sizes cannot be punched at their short edge, if they are not wide enough to hold all punch holes. E.g. A4 & LTR cannot be 4/3-hole punched at their short edge.
- Some paper sizes cannot be punched at their long edge, because they cannot be fed in LEF direction. E.g. A3 & DLT.
- The PJJL SET PUNCH command forces the print job to a specific output bin that supports punching. On both Finisher types, SR5000 and SR5020, punching is supported by the "Finisher Shift Tray" and the "Finisher Upper Tray".
If a different output bin is explicitly specified (at tag [PJJL.16] or [PCL.02]), the punched output will be printed to the "Finisher Shift Tray".

Note: [P.JL.08]

Punching of Landscape documents on SEF paper requires an explicit page rotation of 180°, as indicated above.

Note:

It is recommended to always explicitly specify the Duplex mode, as indicated in the section "Duplex mode" above, in order to override any existing Duplex mode setting on the device, which could be in conflict to the desired Punching mode.

Note:

- The indicated orientation of the document should match the actual orientation of the printout. Otherwise, the result may not make much sense.
- The paper supported is specified in the chapter "Device Hardware Accessories" above.

Note:

Depending on the type of Finisher and Punching unit, the following numbers of holes can be punched:

- 2 holes = European (EU) style
- 3 holes = North American (US) style
- 4 holes =
 - European (EU) style
 - North European / Scandinavian / Swedish (SC) style

Note: (Punch Kits)

For Finishers SR5000 and SR5020 three types of Punch Kits are available: { NA, EU, SC }.

Depending on the type of Punch Kit, different numbers of holes can be punched:

For the European Punch Kit and the North American Punch Kit the number of the punched holes need to be specified.

Settings/Values:

^^^ [P.JL.03]	Interpretation	-- [requires Punch Unit PU5000 or PU5020 ...]
NA2	2 holes, North American (US) style	[... NA]
STD3	3 holes, North American (US) style (default)	[... NA]
STD2	2 holes, European (EU) style	[... EU]
EU4	4 holes, European (EU) style (default)	[... EU]
NE4	4 holes, North European / Scandinavian / Swedish (SC) style (default)	[... SC]

Note: (The SAP mechanism to specify the Punching Mode)

- For ABAP and non-POSS systems:

There is no SAP mechanism.

- For SAPscript and SmartForms under POSS:

The Punching Mode can be configured using POSS option 07. For more information please refer to the section on POSS in Volume 2.

3.7.1 Tag: # [P.JL.03] PUNCHING MODE**Command syntax:**

- @P.JL SET PUNCH = ^^^ \r\n

Initial / Example:

- #@P.JL SET PUNCH = NONE \r\n

3.7.2 Tag: # [P.JL.08] ROTATION**Command syntax:**

- @P.JL SET ROTATION = ^^^ \r\n

Initial / Example:

- #@P.JL SET ROTATION = 180 \r\n

3.8 Resolution**Description:**

By default, the horizontal and vertical printer resolution, in dots per inch (dpi), is 600 dpi.

In case of memory or speed problems, or for draft prints, you may wish to switch to 300 dpi.

If resolution is changed, the memory is reconfigured, and all downloaded fonts and PCL macros are lost.

Settings/Values:

^^^ [P.JL.01]	Interpretation
600	600 dpi (default)
300	300 dpi
1200	1200 dpi

3.8.1 Tag: # [PJL.01] RESOLUTION**Command syntax:**

- @PJL SET RESOLUTION = ^^^ \n

Initial / Example:

- @PJL SET RESOLUTION = 600 \n

3.9 Copies**Description:**

Number of copies to print of this job.

For example, for 4 copies of a 3-page document,

- **Uncollated** copies will appear as 1,1,1,1,2,2,2,2,3,3,3,3.
- **Collated** copies will appear as 1,2,3,1,2,3,1,2,3,1,2,3.

Settings/Values:

^^ = { 1, ..., 999 }

Dependencies/Constraints:

- Please note that this may conflict with some SAP Output Management System software.

Note: (PCL/PJL)

There are two PJL commands and one PCL command related to specifying the number of copies and the collation mode.

Initially, both PJL commands are commented out, and the PCL command specifies 1 copy.

If either PJL command is used, the other one and the PCL command need to be commented out to avoid conflicts.

For Collated mode, the PJL QTY command is needed.

For Uncollated mode, either PJL COPIES or the PCL command can be used.

If both PJL and PCL commands are used, the PCL setting will override the PJL setting.

Note: (Increasing the performance of network printers)

It is possible to specify the desired number of copies directly in the print data stream, using one of the commands below. Since the spool system cannot know the contents of the data stream, it has to be told explicitly that N = 1, to avoid any conflict.

If a certain class of print jobs always requires the same fixed number of copies, the administrator may choose

1. to create a dedicated device type which sends the appropriate command, and
2. to tell his users to always keep N = 1 in the Print parameters dialog.

Note: The above does not work in conjunction with the HPL2 ABAP list driver, since it overrides this setting; it always forces only 1 copy.

3.9.1 Tag: # [PJL.15] COPIES 1/2**Command syntax:**

- @PJL SET QTY = ^^^ \r\n
 - @PJL SET COPIES = ^^^ \r\n
- **[PJL.15a]** (for Collated)
 -- **[PJL.15b]** (for Uncollated)

Initial / Example:

- #@PJL SET QTY = 1 \r\n
- #@PJL SET COPIES = 1 \r\n

3.9.2 Tag: # [PCL.13] COPIES 2/2**Command syntax:**

- \e&l^^^X

Note:

This PCL command will just print uncollated copies.

It needs to be commented out if one of the above PJL commands is used.

Initial / Example:

- \e&l1X

3.10 EconoMode (Toner Saver)

This feature is NOT supported by this device.

3.10.1 Tag: # [PJL.14] ECONOMODE (TONER SAVER)

This command is NOT supported by this device.

3.11 Auto Tray Change/Switching

This feature is NOT supported by this device.

3.11.1 Tag: # [PJL.12] AUTOTRAYCHANGE

This command is NOT supported by this device.

3.12 Edge Smoothing/Enhancement

This feature is NOT supported by this device.

3.12.1 Tag: # [PJL.11] SMOOTHING

This command is NOT supported by this device.

3.13 Page Protection

This feature is NOT supported by this device.

3.13.1 Tag: # [PJL.06] PAGE PROTECTION

This command is NOT supported by this device.

3.14 Paper Size**Description:**

Determines the paper size to be used for the current page.

The **physical height** and **width** of the sheet or envelope are specified below.

The engine's mechanics implies an unprintable area near the edges, so that the **imageable area** is usually smaller. This is device-dependent.

Paper may be treated differently, depending on with which edge the sheets are fed into the paper path (**feed direction**).

- **LEF** = Long-edge-feed
- **SEF** = Short-edge-feed

(This notion of feed direction is independent of the notion of orientation.)

In the paper sizes below the first value specified is the feed edge.

Note: (Configuring the Paper size)

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it.

For a **SAPscript** document, its paper size is configured in the "Page format" setting in the SAPscript Form used by the document, which in turn determines the Device format to be used. For the SAP standard paper sizes (A3, A4, A5, Letter, Legal, Executive), the command sent is built in the HPL2 SAPscript OTF driver, otherwise (for non-standard paper sizes) it has to be specified at the end of the Printer initialization action of the corresponding Device format.

For an **ABAP** report, the paper size to be used is always assumed to be A4 or Letter; however, the "Printer initialization" action does not send any paper size command.

In any case, the command syntax is explained below.

Note: ("Sub paper size")

Normally, a print job specifying a certain paper size would require that paper of this size be loaded in a tray.

If paper of this size is not available in any tray, the user will be requested via the device's front panel to load it.

Since A4 and Letter have similar formats, it may be desirable to be able to print a job specifying Letter format on A4 paper, or vice versa. This feature is called "Sub(stitute) paper size". There is no scaling applied; so if the image is too large, it will be cropped at the margins.

This feature can only be set via the device's front panel (Sub Paper Size = Auto); there is no PJL command to achieve this.

Settings/Values:

^^^	Name (short)	Full / Alternative names	EU/US	Size
-----	--------------	--------------------------	-------	------

27	A3	DIN A3 ((SEF))	EU	297 x 420 mm
26	A4	DIN A4 (LEF) DIN A4 (SEF), A4R	EU	297 x 210 mm 210 x 297 mm
2000 25	A5	DIN A5 (SEF) DIN A5 (LEF)	EU	148 x 210 mm 210 x 148 mm
2001 24	A6	DIN A6	EU	105 x 148 mm
46	B4	B4(JIS)	EU	257 x 364 mm
45	B5	B5(JIS)	EU	182 x 257 mm
2020	B6	B6(JIS)	EU	128 x 182 mm
2043	12" x 18"	SRA3, 12" x 18"	US	12" x 18"
6	Ledger	DLT, Double Letter, Tabloid ((SEF))	US	11" x 17"
3	Legal	LGL, Legal ((SEF))	US	8.5" x 14"
2	Letter	LTR, Letter ((LEF,SEF))	US	8.5" x 11"
1	Executive	Executive	US	7.25" x 10.5"
2008	Statement	HLT, Half Letter	US	5.5" x 8.5"
2012	Folio	F4	US	8.25" x 13"
2011	F/GL	F, Folio GL	US	8" x 13"
2007	Foolscap	Foolscap, Folio, F4, Government Legal	US	8.5" x 13"
2030	8K	8Kai	EU/US	267 x 390 mm
2031	16K	16Kai	EU/US	195 x 267 mm
101	Custom	Custom / User-defined	--	--

Dependencies / Constraints:

- Some input bins and output bins support only certain paper sizes, and some only in a certain feed direction. See the sections about Input bins and Output bins and the chapter "Device Hardware Accessories" above.
- If no paper select command is sent, the controller will use the paper in the addressed tray, or it may ask to load the paper which is currently specified as default.

Note: (Support of SEF paper)

For paper sizes which can be fed in both LEF and SEF direction, the above values will address only LEF paper. (SEF-only paper sizes (e.g. A3, Legal) are not affected by this.)

For such a paper size, in order to address it when in SEF direction, there are two alternative approaches:

ALT1

Add +100 to the above value. E.g.
A4 LEF = 26 --> A4 SEF = 126
Letter LEF = 2 --> Letter SEF = 102

ALT2

Set the device setting "Auto Orientation (Portrait to Landscape)" to "On" (via panel or web interface), and explicitly specify an input bin select command. Then an LEF value paper size command will also address SEF paper in that bin.

In particular, this latter approach has to be used under SAP, when printing a SAPscript document on paper sizes { A4, A5, Letter, Executive }, using a PCL Device type. (This is because then the SAP system sends its own hard-coded paper size command, which would override any previous command as from the first approach.)

Note: (Support of paper sizes by SAP)

Only the entries marked bold are currently fully supported as standard under SAP.

For the procedure on how to support a non-standard paper size, see the corresponding section in Volume 2, Appendix 1.

Command syntax:

- `\e&l^^^A`

Example:

- `\e&l26A`

3.15 Orientation

Description:

The orientation defines how the printed output appears on the physical paper. By definition, "Portrait" means that, in order to read the text, the sheet must be held upright, i.e. with the short edge at the top. (This notion is independent of the notion of paper feed direction.)

Note: (Configuring the Orientation)

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it.

For a SAPscript document, its orientation is configured in the "Orientation" setting in the SAPscript Form used by the document. The command is automatically sent by the HPL2 SAPscript OTF driver, using the Print controls SPORT and SLAND, after the command sequence of the "Printer initialization" action. Therefore, the "Printer initialization" action should not send any commands to specify orientation.

For an **ABAP** report, the orientation is a property of the Device format (X_IL_cc), which in turn is determined by the number of lines per page and the number of columns. The necessary PCL command is contained at the end of the "Printer initialization" action. In any case, the command syntax is explained below.

Settings/Values:

	AAA	Interpretation
	0	Portrait (P)
	1	Landscape (L)

Note: The values are the digits 0,1, NOT the letters O,l.

Dependencies/Constraints:

- For Stapling, Punching, Duplexing, Orientation, and Paper feed direction, only certain combinations make sense and are permitted. See the chapter "Limitations" below.

Command syntax:

- \e&l^^^O

Note: The last character is the uppercase letter "O".

Example:

- \e&l0O

3.16 Left margin

Description:

The left margin of the page.

Note: ([Configuring the Left margin](#))

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it.

For a **SAPscript** document, the horizontal margins are automatically cleared (set to 0) by the HPL2 SAPscript OTF driver, sending the command "<ESC>9" after the command sequence of the "Printer initialization" action.

For an **ABAP** report, the horizontal margins are automatically cleared (set to 0) when using the HPL2 ABAP list driver. Otherwise no command is sent.

In any case, the command syntax is explained below.

Settings/Values:

AAA	Interpretation
{ 0,1,... }	Number of columns (as defined by the current HMI)

Command syntax:

- \e&a^^^L

Example:

- \e&a5L

3.17 Top margin

Description:

The top margin of the page.

Note: ([Configuring the Top margin](#))

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it.

For a **SAPscript** document, the top margin is automatically cleared (set to 0) by the HPL2 SAPscript OTF driver, sending the command "<ESC>&10E" after the command sequence of the "Printer initialization" action.

For an **ABAP** report, the top margin is automatically cleared (set to 0) when using the HPL2 ABAP list driver. Otherwise no command is sent. In any case, the command syntax is explained below.

Settings/Values:

AAA	Interpretation
{ 0,1,... }	Number of lines (as defined by the current VMI)

Command syntax:

- \e&l^^^E

Example:

- \e&l1E

3.18 Horizontal spacing

Description: (PCL)

The horizontal spacing defines the distance between two adjacent characters. In a proportional font, it affects only the width of the space character. The current horizontal spacing is kept in a variable called **HMI** (Horizontal Motion Index). It has to be specified as an absolute measure in 1/120 inch. This determines the number of characters per inch (**cpi**). The default HMI is $= 12/120" = 10$ cpi.

Note: (Configuring the Horizontal spacing)

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it. Moreover, after any font select command the HMI is automatically set to a (font-specific) default, and therefore it needs to be specified again. For a **SAPscript** document, the horizontal spacing is specified by the HPL2 OTF driver automatically after each font select command of a proportional font (thus only affecting the width of the space character). For fixed-spaced fonts, no command is sent; thus the default pitch of the selected font will be used. For an **ABAP** report, the "Printer initialization" action of an X_II_cc Format contains a command to override the default pitch of the font used (Courier), thus condensing or expanding it to just the right size so that cc columns will fit properly on the page. The HPL2 ABAP list driver sends the command automatically. In any case, the command syntax is explained below.

Settings/Values:

AAA	Interpretation
{ <any rational number> }	absolute measure in 1/120 inch

Command syntax:

- \e&k^^^H

Example:

- \e&k12H

3.19 Vertical spacing

Description: (PCL)

The vertical spacing defines the distance between two adjacent lines. The current vertical spacing is kept in a variable called **VMI** (Vertical Motion Index). It can be specified as number of lines per inch (**lpi**). The default VMI is $= 8/48" = 6$ lpi.

Note: (Configuring the Vertical spacing)

This setting cannot be configured effectively in the "Printer initialization" action of the device type, because there are other mechanisms which would override it. For a **SAPscript** document, the vertical spacing is initially set to 0 by the HPL2 SAPscript OTF driver, using the command "<ESC>&10C". For an **ABAP** report, the necessary command is contained at the end of the "Printer initialization" action of the format. The HPL2 ABAP list driver overrides this, setting it to 0. In any case, the command syntax is explained below.

Settings/Values:

AAA	Interpretation
{ 1, 2, 3, 4, 6, 8, 12, 16, 24, 48 }	number of lines per inch (lpi)

Command syntax:

- \e&l^^^D

Example:

- \e&l6D

3.20 Character set

Description:

Select/change the active printer character set. This term is also known as "symbol set" (HP) or "code page" (Microsoft). It is a table that interprets ASCII codes as characters.

Note: (Configuring the Character set)

This setting is not a property of the job or a page but of individual characters. Nor is it an attribute of the font, it is maintained independently. It would make sense to specify an initial value in the "Printer initialization" action of the device type, but it could be overridden at any time. In a **SAPscript** document, the character set can be switched by sending an appropriate Print control. (This is currently not implemented.) This setting is also overridden by the SFxxx font select Print controls issued by the HPL2 SAPscript OTF driver. For an **ABAP** report, the initial character set to be used is specified at the end of the "Printer initialization" action. In any case, the command syntax is explained below.

Settings/Values:

^^^	Interpretation
0N	Latin-1 (ISO 8859-1)
2N	Latin-2 (ISO 8859-2)

For the initial setting, see the Example below.

Dependencies/Constraints:

- none

Note: ([Switching the Character set](#))

At the moment it is not possible to switch between character sets, e.g. to mix both Latin-1 and Latin-2 in the same document.

Note: ([Support of the EURO character](#))

The EURO character (€) has been implemented in the symbol sets 19U (Latin-1), 9E (Latin-2), for most typefaces, except LinePrinter, at position 80 (hex).

For this device the resident fonts support the EURO character.

To find out if the device type supports the EURO character, please see Volume 2.

Command syntax:

- \e(^^^

Example:

- \e(0N -- for ZB0x1vvv
- \e(2N -- for ZB0x2vvv

3.21 Font

Description:

Selects the font to be used, by specifying the following parameters:

- ^^p = proportional
- ^^h = pitch (dpi)
- ^^v = font height (point size)
- ^^s = style (italic)
- ^^b = weight (bold)
- ^^T = typeface

Note: ([Selecting a font & Configuring font attributes](#))

This setting is not a property of the job or a page but of individual characters.

It doesn't make sense to specify an initial value in the "Printer initialization" action of the device type, since it will be overridden.

In a [SAPscript](#) document, the font to be used for a portion of text is specified by preceding the text with a 2-character tag which is defined as a Character format or Paragraph format in the Form or Style used by the document. The tag maps to a system font and thus to a SFxxx Print control and thus eventually to a font select PDL command sequence.

For an [ABAP](#) report, only a fixed-spaced font can be used, in this case COURIER. The font size depends on the format chosen, and it is specified in the "Printer initialization" action of the Device format. The HPL2 ABAP list driver has its own mechanism.

In any case, the command syntax is explained below.

There are no Print controls for changing/specifying a font attribute, because using them would conflict with the existing mechanisms.

Note: ([OCR text printing](#))

Printing OCR text requires a separate solution. Please refer to the chapter "Barcodes & OCR Text" in Volume 2 for more information.

Note: ([Barcode printing](#))

Printing barcodes requires a separate solution. Please refer to the chapter "Barcodes & OCR Text" in Volume 2 for more information.

Note: ([Arbitrary size fonts](#))

For printing fonts in arbitrary sizes, please refer to the chapter "The Fonts" in Volume 2 [ZA0x].

Settings/Values:

Please refer to proper PCL documentation.

Note: The pitch command (<ESC>&k#H) must be respecified after any font select command. Otherwise a (font-specific) default is used.

Note: LinePrinter supports only symbol sets 0N, 2N.

Command syntax:

- \e(s^^p^^h^^v^^s^^b^^T

Example:

- \e(s0p10h12v0s0b4099T -- This would select normal Courier 10 cpi 12 pt.

3.22 Color printing

This feature is NOT supported by this device.

3.22.1 Tag: # [PCL.30] COLOR : COLOR MODE

This command is NOT supported by this device.

3.23 Slip sheet

This feature is NOT supported by this device.

3.23.1 Tag: # [PJL.20] SLIPSHEET

This command is NOT supported by this device.

3.24 Locked Printing

This feature is NOT supported by this device.

3.25 Edge-to-Edge Mode

Description:

Normally there is a margin along the edges of the sheet, where the page content is clipped.

If this setting is enabled, the logical area for printing almost equals the physical size of the paper; the margins are reduced to approx. 1 mm. For normal operation, this feature should be disabled.

Settings/Values:

^^^ [PJL.07]	Interpretation
ON	disabled (default)
OFF	enabled

Note:

The physical printable area may vary depending on the paper size.

3.25.1 Tag: # [PJL.07] EDGE-TO-EDGE MODE

Command syntax:

- @PJL SET CLIP = ^^^ \r\n

Initial / Example:

- #@PJL SET CLIP = OFF \r\n

3.26 USERCODE

Description:

The USERCODE feature allows to tag a print job with a numeric code which identifies the job as having been issued by a certain individual (user) or organizational unit (department, etc.).

This can be used for accounting or billing purposes, for usage statistics, or for user authentication.

For how to register the codes on the devices and how to evaluate the statistics, refer to the corresponding Operating Instructions manual.

Settings/Values:

The length of the code is max. 8 digits.

The surrounding double-quotes (") are mandatory.

The value of the code can be specified as static/fixed or as dynamic/variable.

In our ZBxx Device type, initially a fixed value is specified as an example.

For how to assign variable codes dynamically at print time, please contact technical support.

Dependencies/Constraints:

- If the value is too long (> 8 digits), it will not be truncated, but the parameter will be empty !
- If the value contains an invalid character, i.e. a non-digit, the parameter will be empty !

3.26.1 Tag: # [P.JL.24] USERCODE

Command syntax:

- @P.JL SET USERCODE = "<usercode>" \r\n

Initial / Example:

- #@P.JL SET USERCODE = "01234567" \r\n

3.28 Job Separation

This feature is NOT supported by this device.

3.28.1 Tag: # [P.JL.27] JOB SEPARATION

This command is NOT supported by this device.

4. Limitations

This chapter contains device-specific or controller-specific limitations related to combinations of several features.

For **device-specific limitations of a single feature**, see under "Dependencies/Constraints" of the corresponding section above.

For **device-independent limitations** related only to the SAP device type used, please refer to the "Limitations" chapter of the corresponding Volume 2.

4.1 Combinations of Feed direction, Orientation, Duplex, Stapling, Punching

For Stapling, Punching, Duplexing, Orientation, and Paper feed direction, only certain combinations make sense and are permitted.

The mechanics of the stapling and punching units are such that they can only operate on the far edge in the paper path (the one that leaves the path last). This results in the restrictions on paper feed direction as indicated in the above sections for stapling and punching.

The 10 most common and reasonable combinations are summarized in the table below.

Other combinations are not reasonable (for turning pages), or not possible (due to physical restrictions of the stapling & punching hardware).

(All images are in readable orientation. The arrow indicates the edge that leaves the printer first.)

Note: (Feed direction required for desired Stapling mode)

If the paper is not available in the feed direction required for stapling in the desired mode (combination of position and orientation of staple(s)), the controller reacts as follows:

If the Input tray is explicitly specified as a particular tray, it will print anyway, but unstapled.

If Auto tray select or no input tray is specified, it will ask to load paper in the required feed direction, and wait (user intervention).

Image	Document orientation	Duplex mode / Binding edge	Punching mode	Stapling mode	Staple position	Staple orientation	Paper Feed direction	=> P.JL FINISH // ROTATION
	Portrait	- Off - Side / Long - Top / Short	- Off - LP	LSP	Top-Left	Slanted	LEF	STAPLE0S // 0
	Landscape	- Off - Top / Long - Side / Short	- Off - LL	LSL	Top-Left	Slanted	SEF	STAPLE0S // 180 (*P)
	Portrait	- Off - (Side / Long) - Top / Short	- Off - TP	LHP	Top-Left	Horizontal	SEF	STAPLE1 // 0
	Landscape	- Off - Top / Long - (Side / Short)	- Off - TL	LHL	Top-Left	Horizontal	LEF	STAPLE1 // 0

	Portrait	- Off - (Side / Long) - Top / Short	- Off - LP	LVP	Top-Left	Vertical	LEF	STAPLE0 // 0
	Landscape	- Off - (Side / Long) - Top / Short	- Off - LL	LVL	Top-Left	Vertical	SEF	STAPLE0 // 180 (*P)
	Portrait	- Off - Side / Long -	- Off - LP	L2P	Left	(Vertical)	LEF	STAPLE2 // 0
	Landscape	- Off - Side / Short	- Off - LL	L2L	Left	(Vertical)	SEF	STAPLE2 // 180 (*P)
	Portrait	- Off - Top / Short	- Off - TP	T2P	Top	(Horizontal)	SEF	STAPLE2 // 0
	Landscape	- Off - Top / Long -	- Off - TL	T2L	Top	(Horizontal)	LEF	STAPLE2 // 0

Note: (*P)

Under POSS, the stapling of Landscape documents on SEF paper is currently not supported.

Note:

- The following paper sizes cannot be stapled/punched at the Top edge (Landscape) or the Left edge (Portrait), because they cannot be fed in LEF direction: A3, Double Letter, Legal.

4.2 Other

The **Booklet Finishing** feature cannot be supported under SAP, since the required page re-ordering is done by the Windows printer driver, not by the device's printer controller.

For possible limitations when printing from SAP with the device's **Enhanced Security** feature enabled, please contact Technical support.

5. (Appendix 1): Printer Languages

This chapter gives a brief introduction of each printer language used by the printer controllers of our devices.

5.1 PCL

The HP **PCL Printer Language** (PCL) is a **page description language** (PDL). That means it is used to specify the contents and format of a page.

The general syntax of a PCL command is:

- <ESC> <character> <letter> <value> <letter>

Note:

- Please be aware that the syntax is case-sensitive.
- In "\e&l^^^H" etc., "l" is the lowercase letter "L" not the digit "1" !
- In "\e&l^^^O" etc., "O" is the uppercase letter "O" not the digit "0" !
- Do NOT introduce any extra blanks.

PCL5e is the version that most of our black-and-white devices use.

PCL5c is the version that our color devices use.

For detailed information, please refer to the "PCL5 Printer Language Technical Reference Manual" from HP.

5.1.1 PCL macros

PCL allows to define and execute **macros**. A macro is identified by a number (<#>).

- <ESC>&f<#>y0X start define macro #
- <ESC>&f<#>y1X stop define macro #
- <ESC>&f<#>y2X execute macro #
- <ESC>&f<#>y3X call macro #

5.2 PJI

The HP **Printer Job Language** (PJI) is a **job control language**.

That means it controls parameters of a whole job, not of individual pages.

Normally all PJI commands are sent at the beginning of a job, and then it switches to some page description language.

The general syntax of a PJI command is:

- @PJI SET <keyword> = <value> [<CR>]<LF>

Note:

- Please be aware that the syntax is case-sensitive.
- The white spaces in front of and behind the "=" sign are optional.
- Do NOT introduce any blanks behind the <CR><LF>.

For detailed information, please refer to the "PJI Technical Reference Manual" from HP.

6. (Appendix POSS): Support of POSS options for [DC68]

The following table shows the support of POSS options and option values on this device model.

Legend: + = supported, o = optional (supported if device hardware option), -- = not supported.

Value	PCL	Description	Supp.
	[PCL.01]	L \p<POSSOPT:01> -- Input bin \e&l_H	+
-1	1	Tray 1	+
-2	2	Tray 2	+
-3	3	Tray 3	+
-4	4	Tray 4	o
-5	5	Tray 5	o
-6	6	Tray 6	o
-7	7	Tray 7	o
	[PCL.02]	L \p<POSSOPT:02> -- Output bin \e&l_G	+
-3	2	Finisher Shift Tray	o
-4	9	Finisher Proof Tray	o
-21	5	Stacker 1	o
-22	6	Stacker 2	o
	[PCL.03]	L \p<POSSOPT:04> -- Duplex mode -- only if [dpx unit]	+
	[PJL.13]	C \p<POSSOPT:05> -- Job offset	+
	[PJL.03]	L \p<POSSOPT:07> -- Punching mode @PJL SET PUNCH = xxx	o
-10	STD2	(2 holes EU) (req LEF/SEF)	o
-11	EU4	(4 holes EU) (req LEF/SEF)	o
-12	NA2	(2 holes US) (req LEF/SEF)	o
-13	STD3	(3 holes US) (req LEF/SEF)	o
-14	NE4	(4 holes NE) (req LEF/SEF)	o
-90	NONE	Off	+
	[PJL.02] (...)	L \p<POSSOPT:08> -- Stapling mode @PJL SET FINISH = xxx	o
-10	STAPLE0S	1x Corner (Slanted)	o
-11	STAPLE0	1x Corner (Vertical)	o
-12	STAPLE1	1x Corner (Horizontal)	o
-20	STAPLE2	2x Edge	o
-90	NONE	Off	+
	(...)	C \p<POSSOPT:11> -- Vendor-defined 2: High Resolution (1200 dpi)	+

(end)