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MACH4

MACH4 Label Printer

Made in Germany

Product type overview for MACH4

B with tear-off plate
A minimum label height of 30 mm is required for it to be torn off.

1.1	Printer	MACH4		
	Print resolution dpi	203	300	600
	Print width up to mm	104	105,6	105,6
	Print speed up to mm/s	200	200	100

P with tear-off plate and dispensing function
The label height on dispending is 20 – 200 mm.

1.2	Printer	MACH4		
	Print resolution dpi	203	300	600
	Print width up to mm	104	105,6	105,6
	Print speed up to mm/s	200	200	100

C with tear-off plate and cutter
Labels or continuous material can be cut at a height of just 12 mm.

1.3	Printer	MACH4		
	Print resolution dpi	203	300	600
	Print width up to mm	104	105,6	105,6
	Print speed up to mm/s	200	200	100

All information on scopes of delivery, design and technical specifications correspond to the date of the printing. Subject to change.
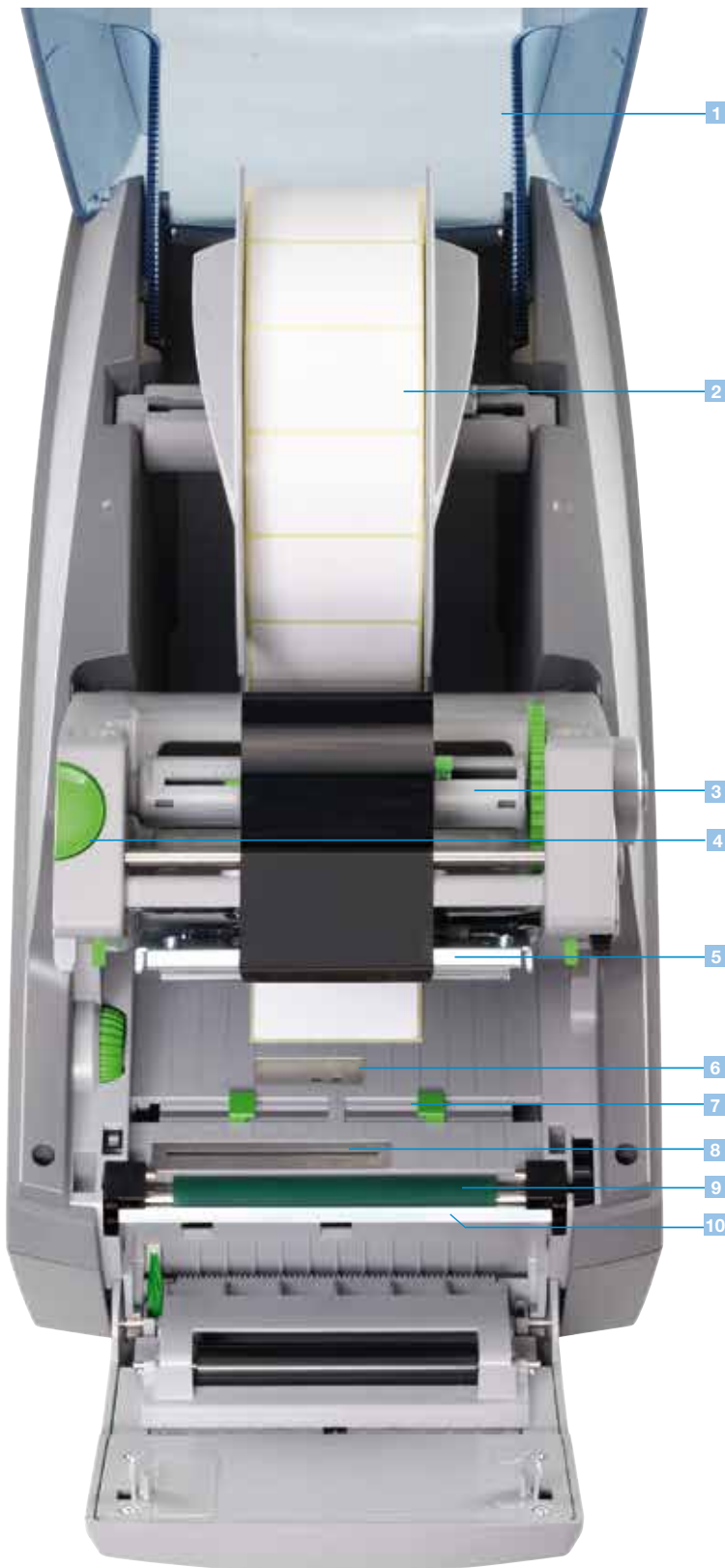
For current data refer to website www.cab.de/en/mach4.

Key features

- MACH4 offers all the features of a high class industrial printer with a wide application range.

- Labels and ribbons can be inserted from the front. The print mechanism and housing are made of premium materials and are perfectly harmonized in their form and function.

- Easy and comfortable handling and high reliability were the requirements during development. The large display with white backlight offers optimum readability.

- The navigation pad with the additional "Enter" button simplifies operation, with only the operated functions being displayed.

- The centered label path eliminates the need for adjustments and avoids wrinkling of the ribbon.

- The high-tech electronic board incorporates all the requisite interfaces as standard and works with all kinds of adapters.

Technical details

1 **Cover with large window**
Can be opened wide. The integrated cushioning mechanism ensures smooth closing. The label stock is visible at all times.

2 **Media hub**
The roll is inserted into the media hub and centered automatically. Materials of different widths fit easily within the box.

3 **Ribbon retainer**
The ribbon can be slid onto a ribbon supply hub with spring mounted brackets. It can be centered with a movable flange and a positioning indicator. The ribbon can be inserted quickly and easily into the print mechanism.

4 **Print mechanism**
It can be opened at the push of a button and offers easy access.

5 **Printing with 203, 300 or 600 dpi**
The printheads can switch easily between 203 and 300 dpi. The printer detects the resolution automatically.

6 **Gap sensor**
To detect the beginning or end of labels, the gap sensor is mounted in the center of the label path. With multi-track labels, the user can switch to another sensor that is shifted 10 mm sideways.

7 **Label guide**
The adjustment knob can be used to adjust the width of the printing area in order to center the labels.

8 **Reflex sensor**
The adjustable reflex sensor can be used to identify the start of a label, print marks and cut-outs

9 **Drive roller**
The drive roller can be easily removed for cleaning or replacement.

10 **Peel-off plate**
The liner is guided down behind the operation panel. The label is removed from its liner at the peel-off-plate.

Interfaces

Rear of printer

1   RS232C interface.

2   USB 2.0 slave interface.

3   Ethernet 10/100 Base T interface with TCP/IP.

4   Slot for wireless LAN card.

5   Two USB master interfaces for connecting an external operation panel, keyboard, scanner, USB flash drive or service key.

6   Slot for CompactFlash Type I memory card.

Options

- Centronics bi-directional interface acc. to IEEE 1284. RS422/RS485 interface 1,200 to 230,400 Baud/8 Bit. The interfaces are plugged into the PC. Connection to the printer via mini USB connection cable.

- Label selection – I / O box. Up to 16 different labels can be loaded via PLC from a memory card. Operation of four inputs/outputs via Basic Interpreter.

- cab WLAN card 802.11 b/g.

Stand-alone operation

Printing without PC

Stand-alone operation is the ability to print labels even if the printer is not connected to the host system.
The label layout is designed with the label software cablabel S3 or direct programming via PC.
Label formats, fonts, font-, text- and graphics data as well as data base contents are saved on the USB stick or read on the internal data memory IFFS.
Only variable data to be printed is sent to the printer via keyboard or scanner.

Technical data

Label printer			MACH4		
Print head					
Printing method	Thermal transfer		■	■	■
	Thermal direct		■	■	–
Print resolution		dpi	203	300	600
Print width		mm	104	105,6	105,6
Print speed up to		mm/s	200	200	100
Material[1]					
Labels, continuous rolls or fan-folded			Paper, cardboard, textile, plastics such as PET, PE, PP, PVC, PU, acrylate, PI		
Thickness mm / Weight g/m^2			0,055–0,8 / 60–200		
Width	Labels	mm	6 - 116		
	Liner or continuous rolls	mm	25 - 120 / from 0,4 mm material thickness 5 - 120		
Label height		mm	5 - 4500		
	when dispensing from	mm	20		
Material height	when cutting from	mm	12		
Media roll	total diameter	mm	205		
	core diameter	mm	38–100		
	winding direction		outside or inside		
Ribbon					
Ink			outside or inside		
Roll diameter up to		mm	72		
Core diameter		mm	25		
Ribbon length up to		m	360		
Width[2] up to		mm	114		
Dimensions					
Height x Depth x Width		mm	312 x 435 x 240		
Weight		kg	6		
Label sensor					
Gap sensor Position			For label edge or punching mark and end of material centered or shifted 10 mm to the left		
Reflective sensor from below Position			For label edge, punching or centered printing mark adjustable 56 mm to the left /10 mm to the right		
Electronics					
Prozessor High Speed 32 Bit Coldfire / clock rate MHz			266		
RAM MB			64		
Memory IFFS MB Flash			8		
Slot for CompactFlash Type I memory card			■		
Slot für wireless LAN card			■		
Battery buffer for real-time clock, printout of time and date, data storage on shut-down			■		
Warning signal acoustic signal in case of error			■		
Interfaces					
Centronics bidirectional acc. IEEE 1284			□		
RS232 C 1.200 up to 230.400 Baud / 8 Bit			■		
USB 2.0 full speed Device for PC connection			■		
Ethernet 10/100 Base T, LPD, RawIP-Printing, ftp-Printing, DHCP, HTTP, FTP, SMTP, SNMP, TIME, Zeroconf, mDNS, SOAP			■		
RS422, RS485 1.200 up to 230.400 Baud / 8 Bit			□		
WLAN card 802.11b/g WEP / WPA PSK (TKIP)			□		
2 x USB Host for external operation panel, keyboard, scanner, service key, USB flash drive			■		
Operating data					
Power supply			100 - 240 VAC 50/60 Hz, PFC		
Energy consumption			max. 300 W		
Temperature/Humidity	Operation:		5 - 40°C / 10 - 85% not condensing		
	Stock:		0 - 60°C / 20 - 80% not condensing		
	Transport:		– 25 - 60°C / 20 - 80% not condensing		
Approvals			CE, FCC class A, CB, CCC, UL		

[1] Limitations may apply to small labels, thin materials or strong adhesives. Critical materials or applications must be tested and approved.
[2] The ribbon should be roughly the same width as the label in order to avoid folding.

Operation panel

Buttons/LED display	Pause, Feed, Cancel, Menu, Enter, 4 x Cursor
LCD graphic display	Width 60, Height 40 mm, Text 4 lines, approx. 20 characters per line

Settings

	Digital or analog clock	Time
	System settings	Date
	Print parameters	Interfaces
	25 language settings	Security

On the Display

	Data reception	Clock
	WLAN field intensity	Date sheet
	Ethernet status	abc Debug
	Used memory	Input buffer
	Temperature printhead	Remaining ribbon
	Access to memory card	

Monitoring

Stop printing if	End of ribbon
	End of labels
	Printhead open
	Final position not reached

Test routines

System diagnosis	When switched on, including printhead testing
Short status, status print	Font list, device list, WLAN Status, label profile, test grid, monitor mode, PPP status
Status reports	Status printout with information about settings, e.g. print length counter, runtime counter, etc. Request of status via software command. Status messages on the display, e.g. network error - no link, barcode error, etc.

Fonts

Font types	5 Bitmap fonts, incl. OCR-A, OCR-B and 3 Vector Fonts Swiss 721, Swiss 721 Bold and Monospace 821 internally available, loadable TrueType fonts. Thai and Chinese (simplified Chinese) available as option.
Character sets	Windows 1250 up to 1257, DOS 437, 737, 775, 850, 852, 857, 862, 864, 866, 869, EBC DIC 500, ISO 8859-1 up to -10 and -13 up to -16, WinOEM 720, UTF-8, Macintosh Roman, DEC MCS, K0I8-R. All West and East European Latin, Cyrillic, Greek, Hebrew and Arabic characters are supported. Thai and Chinese available as option.
Bitmap fonts	Size of width and height 1 – 3 mm Zoom 2 – 10 Orientation 0°, 90°, 180°, 270°
Vector- / TrueType fonts	Size of width and height 0,9 – 128 mm Variable zoom, Orientation 360° in steps of 1°
Font formats	Bold, italic, underlined, outline, inverse, depending on character fonts
Font width	Variable

Graphics

Graphic elements	Line, arrow, box, circle, ellipse, filled and filled with fading
Graphic formats	PCX, IMG, BMP, TIF, MAC, GIF, PNG

Barcodes

Linear barcodes	Code 39, Code 93	Interleaved 2 / 5
	Code 39 Full ASCII	Ident- and lead code of
	Code 128 A, B, C	Deutsche Post AG
	EAN 8, 13	Codabar
	EAN / UCC 128	JAN 8, 13
	EAN / UPC Appendix 2	MSI
	EAN / UPC Appendix 5	Plessey
	FIM	Postnet
	HIBC	RSS 14
		UPC A, E, E0
2D codes	Aztec, Codablock F, Data Matrix, PDF 417, Micro PDF 417, UPS Maxicode, QR-Code, RSS 14 truncated, limited, stacked and stacked omnidirectional, EAN-Datamatrix, GS1 Data Bar	
	All codes are variable in height, module width and ratio. Orientation 0°, 90°, 180°, 270°. Optionally with check digit, printed characters and start/stop code depending on type of code.	

Software

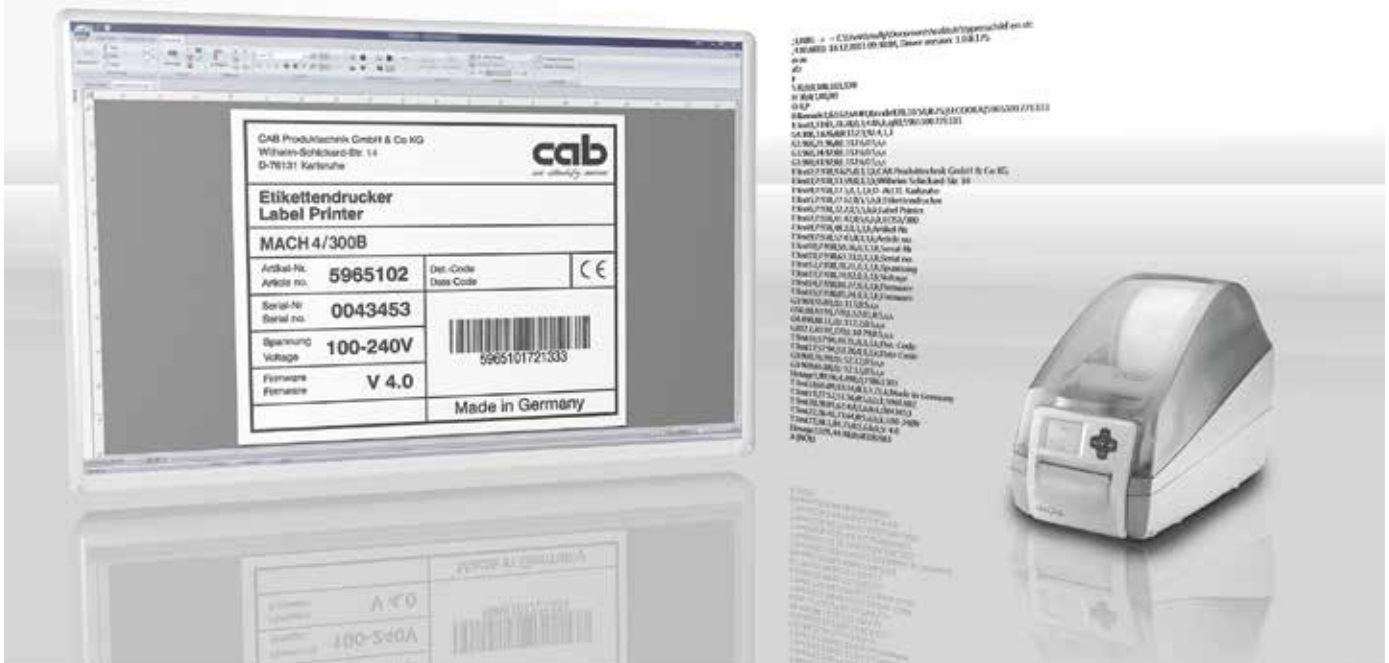|		
Programming	J-Script direct programming	■
	abc-Basic Compiler	■
	Database Connector	■
	SAP Replace method	■
System diagnosis/ administration	Printer monitoring with Intra- and Internet with web interface	■
	Network Manager	■
Label software	cablabel® S3 Lite	■
	cablabel® S3 Viewer	■
	cablabel® S3 Pro	□
	cablabel® S3 Print	□
Windows driver certified	32 / 64 bit for Windows Vista Server 2003 Windows 7 Server 2008 Windows 8 Server 2008 R2 Windows 8.1 Server 2012 Windows 10 Server 2012 R2	■
Mac- driver	OS X printer driver from version 10.6	■
Linux driver	32/64 Bit from CUPS 1.2	■
Stand-alone-operation		■

Accessories

	Accessories		MACH4
2.1	External rewinder ER4		☐
2.2	Media hub		☐
2.3	Ribbon holder		☐
2.4	Memory card		☐
2.5	Standard keyboard		☐
	Interfaces		
3.1	Interface Centronics		☐
3.2	Interface RS422/RS485		☐
3.3	Label selection box		☐
3.4	WLAN card 802.11 b/g		☐
	Conneting cables		
4.1	Conneting cable RS232 C 9/9 pin, length 3 m		☐
4.2	Patch cable CAT 5e, length 3 m grey		☐
	Software		
11.4	Database Connector		■
11.6	Network Manager		■
11.9	cablabel® S3	Lite	■
		Pro	☐
		Print	☐
11.10	Programming manual		☐

Accessories	Product
2.1	**External rewinder ER4** 1 Roll diameter mm: max. 210 2 Operating voltage: 100 - 240 V~ 3 Core diameter mm: 40 / 76
2.2	**Media hub** Labels can be provided in additional holders for quick replacement.
2.3	**Ribbon holder** Ribbons can be provided in additional holders for quick replacement.
2.4	**Memory card** CompactFlash Type I Label formats, fonts, texts and graphics can be saved. Accessible from the printer or from the PC.
2.5	**Standard keyboard** Connection: USB No. of keys: 115

Interfaces	Product
3.1	**Interface Centronics** bi-directional acc. to IEEE 1284
3.2	**Interface RS422/RS485** 1.200 up to 230.00 Baud/8 Bit
3.3	**Label selection box - I/O-Box** From a higher-level control, like a PLC, up to 16 different labels can be selected from the memory card.
3.4	**WLAN card 802.11 b/g**

Connecting cables	Product
4.1	**Connecting cable RS232 C** 9 / 9 pin, length 3 m
4.2	**Patch cableCAT 5e** 3 m grey

Operation and compliance with CE standards is only warranted by using materials provided or recommended by cab.

Label software cablabel S3

cablabel S3 concentrates label design, print control and monitoring of all cab marking systems. The development of devices and software is synchronized.

Highlights

Like no other software available cablabel S3 develops the full potential of cab devices. The software utilizes the JScript code to the full extent. The Pro product imports existing JScript files, so you can switch over easily to new software. With the new layer technology the user designs a label which works for all established devices and resolutions. Intelligent print control evaluates both device and resolution for printout and provides the proper data. Thus, possible sources of error are reduced.

cablabel S3 also maximizes the integration of database connections via Database Connector. After designing the label, the software provides all files to be stored within the printer for database connections. Stand-alone operation independend from a host system is supported. In addition the software creates interfaces which are easy to handle for SAP connection or other devices like PLC, scales and barcode testers.

Functional range

Every company designs and formats their label printing differently. For example, label creation and production are executed by different employees. To adopt the software package to specific needs, cab offers different software packages.

- *cablabel S3 Lite* is offered free of costs with every cab printer and allows to create and print labels.
- With cost-saving *cablabel S3 Pro* label designs for professional technical solutions can be created.
- *cablabel S3 Viewer* shows the preview of a label in the Windows Explorer and - like the Lite product - is delivered free of costs with every cab printer. The Viewer may support showing examples during the approval processes or supplier requirements.
- *cablabel S3 Print* is provided for users in production or warehouse. The user interface is simplified and provides only those functions which are required for label printing.

Other products like cablabel S3 Pro Laser, Print Laser and Print Server are in preparation.

Integration

No printer is isolated – in a productive environment it is connected to other equipment or networks for control and monitoring. cab offers various possibilities to integrate the printer into your environment.

Control

Every cab printer can be directly coded with the simple programming language *JScript* and an extensive instruction set. The label software cablabel® S3 supports optimally JScript, but a JScript program may also be created with any text editor.

As an integrated element of the firmware, the *abc Basic compiler* enables the printer to process data via BASIC programming before it is sent for print editing. That way, you replace external printer languages or integrate data from other systems, e.g. balance or a PLC.

11.4 In the stand-alone mode with additional network connection, the *Database Connector* enables printers to access data directly from a central ODBC-, OLEDB compatible database and to print it as a label.

In cooperation with SAP* cab developed the so-called *replace method* to control cab printers quickly and easily from SAPScript using SAP R/3. Using the replace method the host computer only sends the JScript variable, respectively changed data to the printer. As a Silver Level partner in SAP's Printer Vendor Program, cab has access to the SAP development area for optimum printer support in SAP environments.

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  in Germany and in several other countries.

11.10 The *Programmer's guide* explains and describes commands for different printer models via direct programming with JScript and abc and additionally the connection of the printer to databases via Database Connector.

For the printer control via PC accredited drivers are available for established Windows operating systems and additionally CUPS-based drivers for Mac OS X and Linux. The drivers ensure optimal stability on your operating system.

Monitoring

Using standard programs such as the web browser or FTP clients, the integrated HTTP and FTP server enables print monitoring, configuration, firmware updates and memory card administration. Status, warning and error messages are sent to administrators or users as e-mails or SNMP datagrams via SNMP and SMTP clients. A time server is used to synchronize time and date.

11.6 The cab Network Manager enables the user to control a number of printers across a network simultaneously. It supports monitoring, configuration, firmware updates, memory card administration, file synchronization and PIN administration centrally.

Delivery program

		Part no.	Hardware	dpi
1.1		**5541082** **5541083** **5541086**	With tear-off plate Label printer MACH4 / 200B Label printer MACH4 / 300B Label printer MACH4 / 600B	
1.2		**5541092** **5541093** **5541096**	With tear-off plate and dispensing function Label printer MACH4 / 200P Label printer MACH4 / 300P Label printer MACH4 / 600P	
1.3		**5541102** **5541103** **5541106**	With cutter Label printer MACH4 / 200C Label printer MACH4 / 300C Label printer MACH4 / 600C	

	Scope of delivery
	Label printer, Power cable type E+F, length 1.8 m, Connecting cablel USB, length 1.8 m, Operating manual de/en

DVD:	Quick Start guide in 17 languages,
	Operating manual de/en/fr,
	Configuration manual de/en/fr,
	Service manual de/en,
	Spare parts list de/en,
	Programming manual en,
	Windows printer driver 32/64 bit in 19 languages for
	  Windows Vista Server 2003
	  Windows 7 Server 2008
	  Windows 8 Server 2008 R2
	  Windows 8.1 Server 2012
	  Windows 10 Server 2012 R2
	Label software cablabel® S3 Lite and Viewer
	Mac OS X driver de/en/fr,
	Linux driver de/en/fr

		Part no.	Spare parts
		5541074.001 **5541073.001** **5541077.001**	Printhead 4 / 203 Printhead 4 / 300 Printhead 4 / 600
		5540896.001	Print roller DR4

		Part no.	Accessories
2.1		**5540750**	External rewinder ER4 / 210
2.2		**5540867.001**	Media hub

		Part no.	Accessories
2.3		**5540866.001**	Ribbon holder
2.4		**5561043**	Memory card CompactFlash Type I
2.5		on request	Standard PC keyboard USB German version

		Part no.	Interfaces
3.1		**5954200**	Centronics interface
3.2		**5954201**	RS422/RS485 interface
3.3		**5954191**	Label selection – I/O box
3.4		**5561041**	WLAN card 802.11 b/g

		Part no.	Connecting cable
4.1		**5550818**	Cable RS232 C 9/9 pin, length 3 m
4.2		**5918008**	Patch cable KAT 5e, 3 m gray

		Part no.	Software
11.9		**5588000**	Label software cablabel S3 Lite
		5588001 **5588100** **5588101** **5588150** **5588151** **5588152**	cablabel S3 Pro 1 WS cablabel S3 Pro 5 WS cablabel S3 Pro 10 WS cablabel S3 Pro 1 additional licence cablabel S3 Pro 4 additional licences cablabel S3 Pro 9 additional licences
		5588002 **5588105** **5588106** **5588155** **5588156** **5588157**	cablabel S3 Print 1 WS cablabel S3 Print 5 WS cablabel S3 Print 10 WS cablabel S3 Print 1 additional licence cablabel S3 Print 4 additional licences cablabel S3 Print 9 additional licences
		In preparation	cablabel S3 Print Server
11.10		**9008486**	Programming manual english, printed copy

Product overview

Label printers MACH1/2
in the lower price segment

Label printers MACH4
where little space is available

Label printers EOS1
desktop device for label rolls
up to diameter 155 mm

Label printers EOS4
desktop device for label rolls
up to diameter 210 mm

Label printers A2+
industrial device
up to print width 57 mm

Label printers SQUIX
industrial device
up to print width 108 mm

Label printers A6+
industrial device
up to print width 168 mm

Label printers A8+
industrial device
up to print width 216 mm

Label printers XD4T
for double-sided printing

Label printers XC
for two-color printing

Print and apply systems Hermes+
for automation

Print and apply systems Hermes C
for two-color printing and applying

Print modules PX
to be integrated
in automatic labeling systems

Labels
of more than 400 materials

Ribbons
in wax, resin and resin/wax qualities

Label software cablabel S3
Design, print, monitoring

Label dispensers HS/VS
for horizontal or
vertical dispensing

Labeling heads IXOR
to be integrated
in labeling machines

Marking lasers FL+
with output powers 10 to 50 watt

Laser marking systems
for industrial solutions

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a.balmaceda@cab.de
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Taiwan
cab Technology Co., Ltd.
希愛比科技股份有限公司
16F-1, No. 700, Jhong Jheng Rd
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info.asia@cab.de
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China
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cab (Shanghai) Trading Co., Ltd.
铠博(上海)贸易有限公司
Room 39, 10F, 8 Lin He Zhong Rd
Tian He District, Guangzhou 510610
phone +86 (020) 2831 7358
info.cn@cab.de
www.cab.de/cn

Africa

South Africa
cab Technology (Pty) Ltd.
14 Republic Street
Bordeaux
2125 Randburg
phone +27 11 886 3580
fax +27 11 789 3913
info.za@cab.de
www.cab.de/za

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