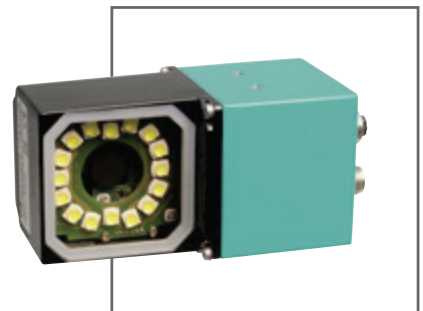




OPTICAL IDENTIFICATION OVERVIEW



FROM A SINGLE SOURCE

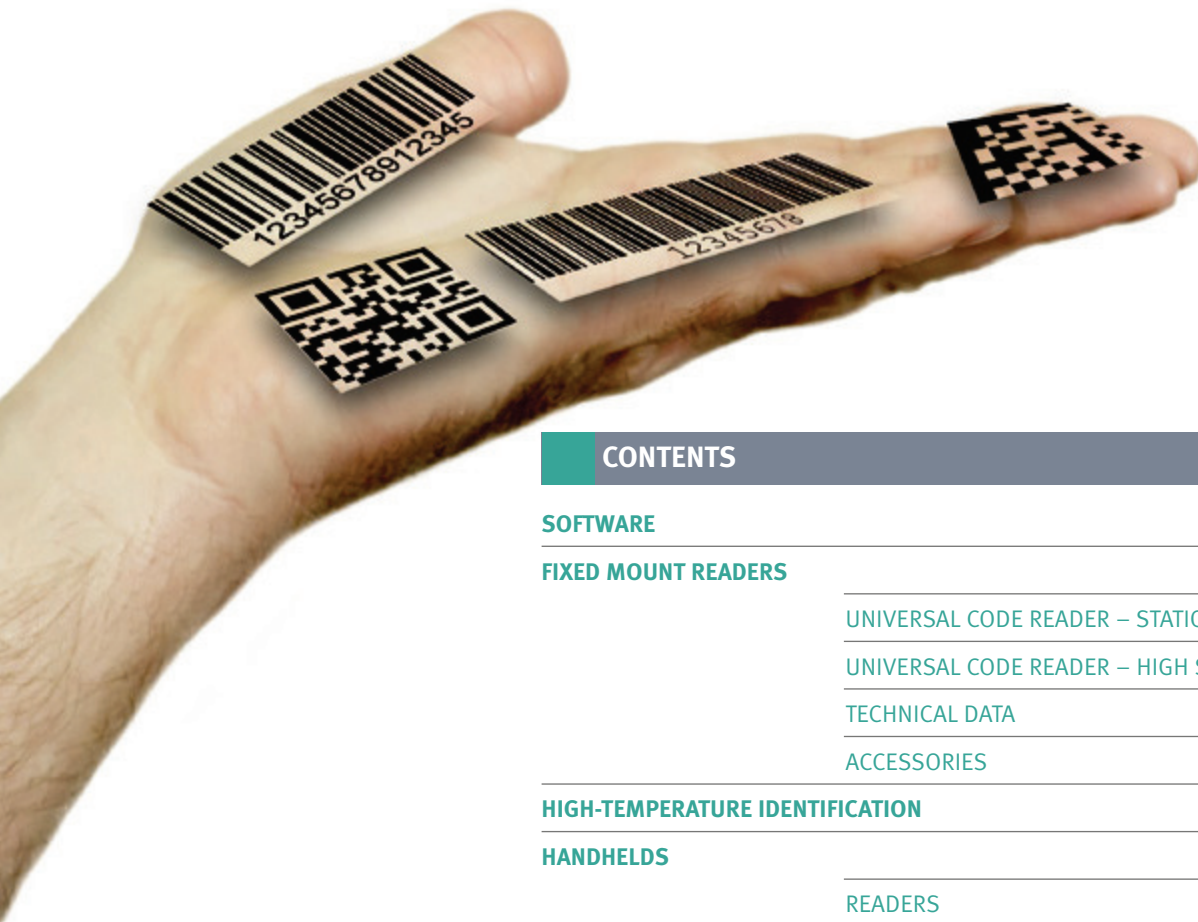
As a pioneer and innovator in industrial sensors, Pepperl+Fuchs is your specialist for optical identification systems. Choose from fixed mount code readers for reading all common 1D and 2D codes, for high-speed reading and high-temperature identification. Industrial handhelds and barcode scanners round off the extensive high-performance product range.

You receive everything for optical identification from a single source at Pepperl+Fuchs.

AT A GLANCE

- A complete portfolio for optical identification
- Unique adaptability with JavaScript programming
- Reliable code reading at high speed up to 20 m/s
- High temperature reading above 500 °C
- Connection modules for different interfaces

JavaScript



CONTENTS

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JAVASCRIPT FOR UNLIMITED POSSIBILITIES

JAVASCRIPT

JavaScript functionality in all handhelds and in MAC335

JavaScript

- Input and output adapted to all controller types and ERP systems
- Customized software for your application – complex applications can be displayed on the code readers without an additional PC
- Expansion of Pepperl+Fuchs handhelds to compact, lightweight, energy-saving handheld terminals

VISION CONFIGURATOR

Operating software for all handhelds and the MAC335

VISION CONFIGURATOR

- Intuitive operation
- Custom modifications through user and policy management
- Displays the changed parameters
- Supports RS232, Ethernet, and USB

THREE STEPS TO SUCCESS:

- **Step 1:** Select sensor
- **Step 2:**
 - Device optimization
 - Exposure time
 - Code selection
 - Prefix and suffix settings etc.
- **Step 3:** Save device settings

VISION CONFIGURATOR – INTUITIVE OPERATING SOFTWARE FOR A VARIETY OF CODE READERS



INTUITIVE OPERATOR INTERFACE WITH NO INSTALLATION REQUIREMENTS

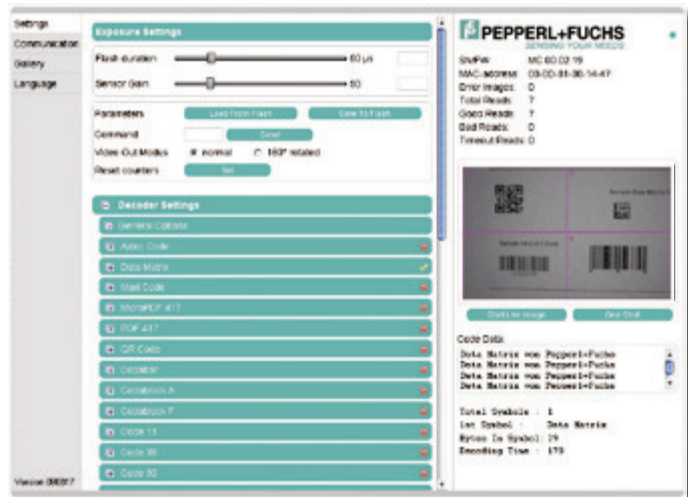
The fixed mount code readers from Pepperl+Fuchs cover the entire range from all common 1D and 2D codes to high-speed reading.

These excellent products are distinguished by convenient operating software via web browser, an automatic error image memory, and JavaScript functionality.

MAC4XX AND MAC502 WEB INTERFACE

“Browser” Interface:

- The MAC4xx and MAC502 graphic operator interface can be loaded using any Internet browser (e.g. Firefox)
- The interface is accessed via Ethernet TCP/IP using a fixed address
- No installation is necessary
- Interactive operation and image download for the operator



UNIVERSAL CODE READER – STATIONARY



MAC335

MAC335

Code symbologies:

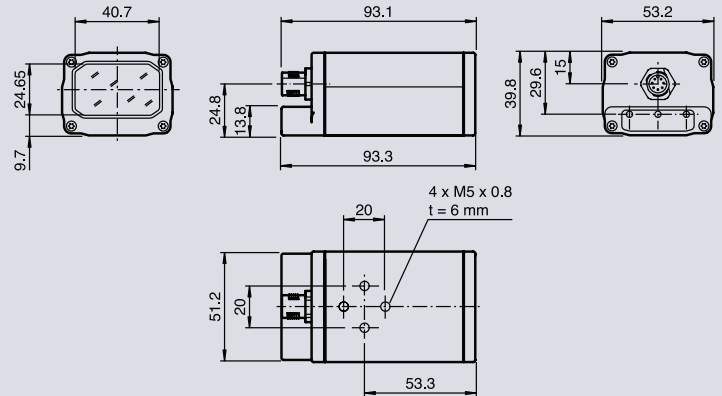
Maxi Code, PDF 417, Data Matrix, QR Code, MicroPDF 417, UCC Composite, Aztec Code, Code 39, Code 128, UPC, EAN, JAN, Int 2 of 5, Codabar, Code 93, UCC RSS, POSTNET, PLANET, Japanese Post, Australia Post, Royal Mail, RM4SCC, KIX Code, Codablock, 4-State Customer Barcode (Intelligent Mail® Barcode)

JavaScript

VISION
CONFIGURATOR

- Very high resolution (1.3 megapixels) guarantees the reading of very small and very large codes with the same sensor settings
- Flexible adaptability due to JavaScript functionality
- Very large read range and high depth of focus
- Compact housing

DIMENSIONS MAC335



UNIVERSAL CODE READER – SPEED

MAC502, MAC433 AND MAC431

- Up to 26 different code symbologies can be read at up to 10 m/s at 30 readings per second
- Code symbologies:
Maxi Code, PDF 417, Data Matrix, QR Code, MicroPDF 417, UCC Composite, Aztec Code, Code 39, Code 128, UPC, EAN, JAN, Int 2 of 5, Codabar, Code 93, UCC RSS, POSTNET, PLANET, Japanese Post, Australia Post, Royal Mail, RM4SCC, KIX Code, Codablock, Pharmacode, 4-State Customer Barcode (Intelligent Mail® Barcode)
- Intuitive operation with no installation requirements via MAC4xx web browser
- Match code
- Code quality output
- Burst mode for varying code positions
- Multicode reading with up to four different codes simultaneously
- OCR A+B
- RS232 and Ethernet interface



MAC502 – FOR CODE READING IN A COMPACT HOUSING

- Large depth of focus for reading codes at different distances with a single setting
- Large read field for reading different code sizes
- Compact plastic housing



MAC433 – ROBUST HOUSING WITH VGA OUTPUT, HEAVY-DUTY INDUSTRIAL USE

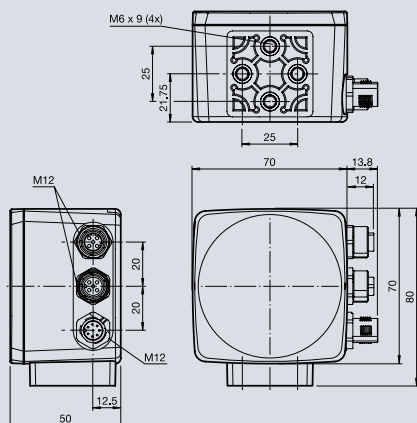
- Large depth of focus for reading codes at different distances with a single setting
- Large read field for reading different code sizes
- Robust die-cast zinc housing for heavy-duty industrial use
- VGA output for rapid live image output



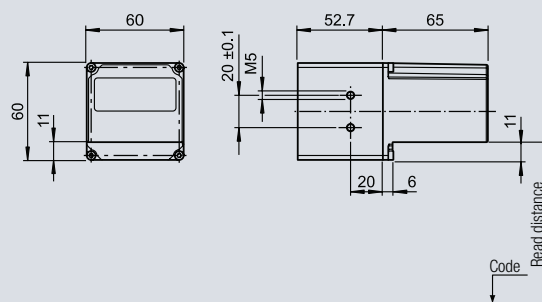
MAC431 – FOR REFLECTIVE SURFACES AT A FIXED DISTANCE

- Robust die-cast zinc housing for heavy-duty industrial use
- VGA output for rapid live image output

DIMENSIONS MAC502



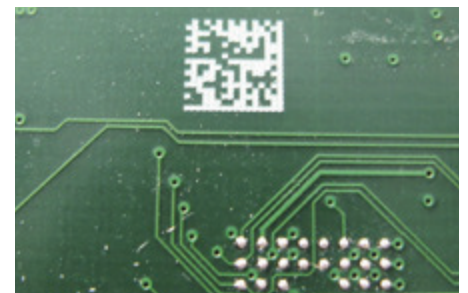
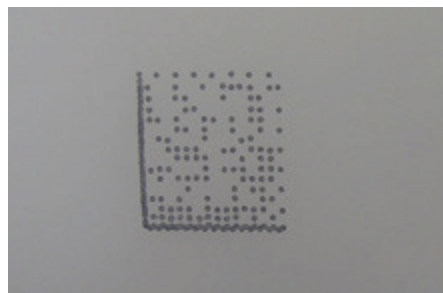
DIMENSIONS MAC433 / MAC431



READS ALL COMMON 1D AND 2D CODES



CODE READING ON MANY DIFFERENT BACKGROUNDS AND ALL COMMON PRINTING METHODS



FIXED MOUNT READERS TECHNICAL DATA

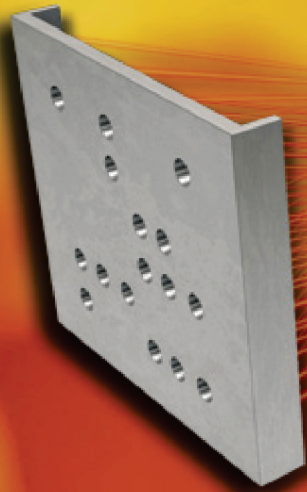
Read device	MAC335	MAC433	MAC431-MC	MAC502
Model number	MAC335-300-RD-F119	ODT-MAC433-LD-WH-MC	ODT-MAC431-LD-WH-MC	MAC502-200-WH-F200-MC
Symbology	All common 1D and 2D codes			
Module size (mm)	0.15	0.2	0.33	0.2
Read distance (mm)	20 ... 300	60 ... 200	100	80 ... 200
Max. read field (mm ²)	200 x 160	110 x 70	50 x 30	110 x 70
Depth of focus area (mm)	280	140	10	120
Object speed (m/s)	0	10	10	10
Reading/s	3	30	30	30
Interfaces	RS232	RS232, Ethernet, VGA	RS232, Ethernet, VGA	RS232, Ethernet
Degree of protection	IP65	IP65	IP65	IP65

ACCESSORIES FOR FIXED MOUNT READERS

Model number	Description	Use with		
		MAC502	MAC43x	MAC335
V19-G-2M-PUR-ABG	Connecting cable 2 m	■	■	■
V15S-G-5M-PUR-ABG	RS232 cable, 5 m	■	■	
V1SD-G-2M-PUR-ABG-V45-G	Network cable 2 m	■	■	
V1SD-G-2M-PUR-ABG-V45X-G	Network cable 2 m	■	■	
ODZ-MAC-CAB-VIDEO	Video cable		■	
V19-G-2.5M-PUR-ABG-SUBD25	RS232 on CBX800	■	■	■

Cables are available in all standard sizes.

IDENTIFICATION AT TEMPERATURES ABOVE 500 °C

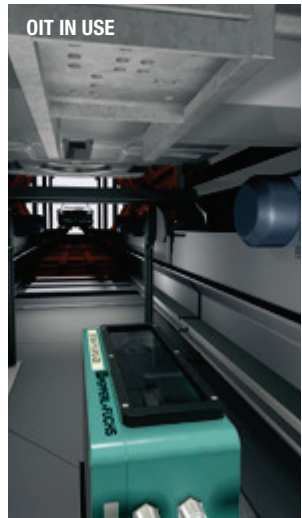


Pepperl+Fuchs offers OIT identification systems for high temperatures that evaluate hole patterns in solid code plates. The code plates withstand the most severe conditions in the production process such as cyclic temperature fluctuations and continuous temperatures above 500 °C.



HIGH-TEMPERATURE IDENTIFICATION SYSTEM

- Heat-resistant code plates for temperatures above 500 °C
- Ideally suited for paint shops, bakeries, and other high-temperature locations
- Enables consistent identification throughout the production process
- Simple connection to all common controllers
- Identification of up to 1 million objects
- Simple adjustment
- One-piece housing design, no additional components



STURDY, ECONOMICAL CODE PLATES

OIC-C10V2A-CB1

- For larger read-only tags and large data volume (use with OIT200, OIT500 and OIT1500)

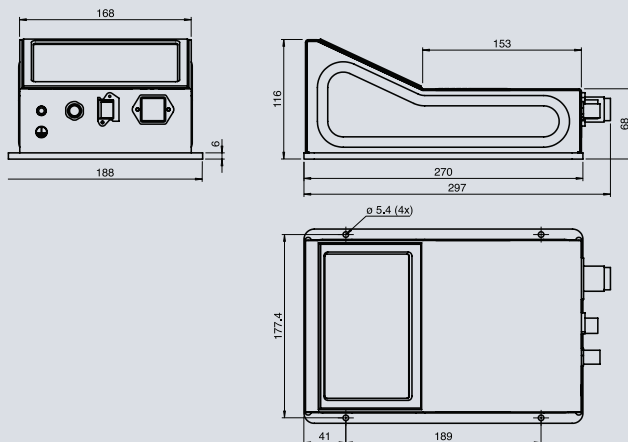


OIC-C11V4A-CB2

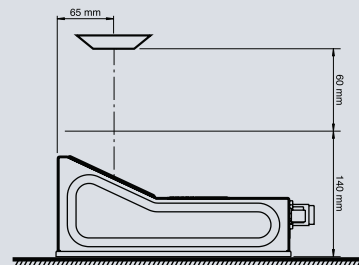
- For smaller read-only tags and smaller data volume (use with OIT300)



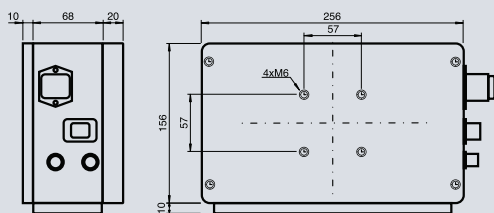
DIMENSIONS OIT200



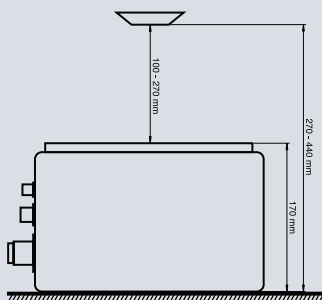
DISTANCES TO READ-ONLY TAG OIT200



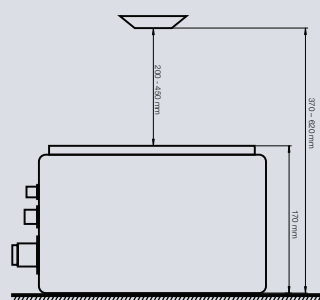
DIMENSIONS OIT300/500



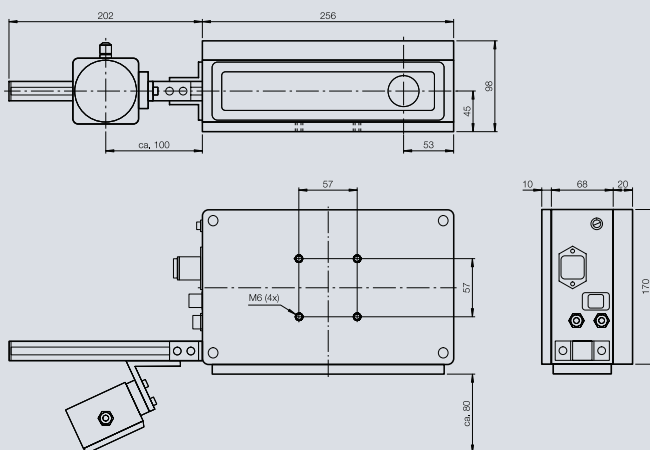
DISTANCES TO READ-ONLY TAG OIT300



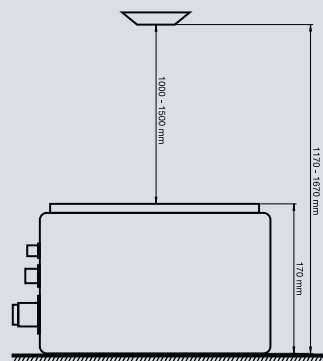
DISTANCES TO READ-ONLY TAG OIT500



DIMENSIONS OIT1500



DISTANCES TO READ-ONLY TAG OIT1500



TECHNICAL DATA HIGH-TEMPERATURE IDENTIFICATION

Product	OIT200	OIT300	OIT500	OIT1500
Model number	OIT200-F113-B12-CB	OIT300-F113-B12-CB2	OIT500-F113-B12-CB	OIT1500-F113-B12-CB
Read distance	140 mm ... 200 mm	100 mm ... 270 mm	200 mm ... 450 mm	750 mm ... 1700 mm
Read field (max.)	210 mm x 135 mm	210 mm x 160 mm	400 mm x 300 mm	320 mm x 235 mm
Data memory in code plate	0 ... 999.999	0 ... 4095	0 ... 999.999	0 ... 999.999
Interface	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP
Code plate dimension	130 mm x 80 mm	80 mm x 36 mm	130 mm x 80 mm	130 mm x 80 mm



Pepperl+Fuchs handhelds offer the ultimate in user comfort. All handhelds can be easily programmed via JavaScript and optimally matched to your application requirements. The MAH series enables reliable detection of all standard 1D and 2D codes. Simply connect the handhelds to a PC or controller via RS232, USB, or Bluetooth.

AT A GLANCE

- Reads all standard 1D and 2D codes
- Simple operation
 - Vision Configurator:
 - ONE operating software for all camera-based code readers
 - Parameterization using control codes replaces external PC
 - Intuitive operation
 - Bidirectional communication
- Reliable detection with
 - Laser pointer / LED target projection
 - Visual and acoustic alerts
 - Vibration alerts in loud and noise-sensitive environments
- Flexible adaptability due to JavaScript functionality



MAH120-HD

- Reads very small and very large codes with high information density on one setting
- Best price / performance ratio
- 1.3 million pixels ensure ultra-sharp images
- Red and green LEDs determine optimal read position



FOR COLORED CODES AND SURFACES



MAH120-WH-HD

- Best read results from different code and surface colors
- White LEDs for optimal illumination
- Reads colored pharmacodes
- Extremely large read field for reading very large codes

JavaScript

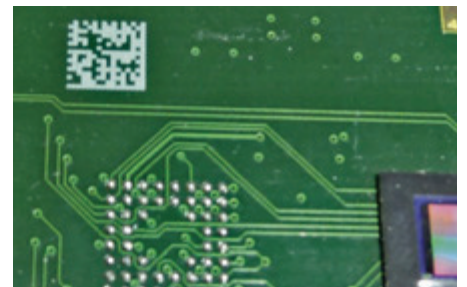
VISION CONFIGURATOR



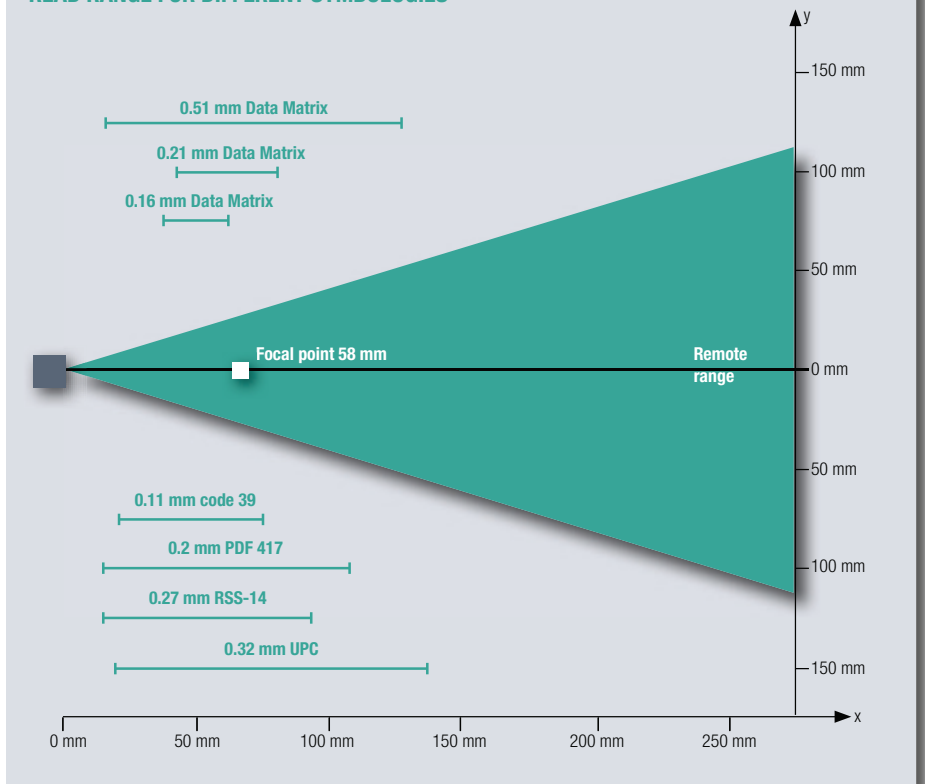
READS PHARMACEUTICAL LABELS



READS CODES ON PCBs



READ RANGE FOR DIFFERENT SYBLOGIES



HANDHELDS

MAH200

Hardware

- Dual optics ensure optimized readings in close and long range
- Compact housing
- Use with or without handle
- USB, RS232, interfaces and Bluetooth

JavaScript

VISION CONFIGURATOR

Wireless operation for maximum flexibility

- Up to 30 handhelds can communicate via Bluetooth using a modem
- Ranges up to 100 meters
- The internal memory in the device enables wireless batch operation
- Intermediate storage of up to 40,000 codes

Readability index for quality control purposes



MAH300

Display and keypad for on-site configuration

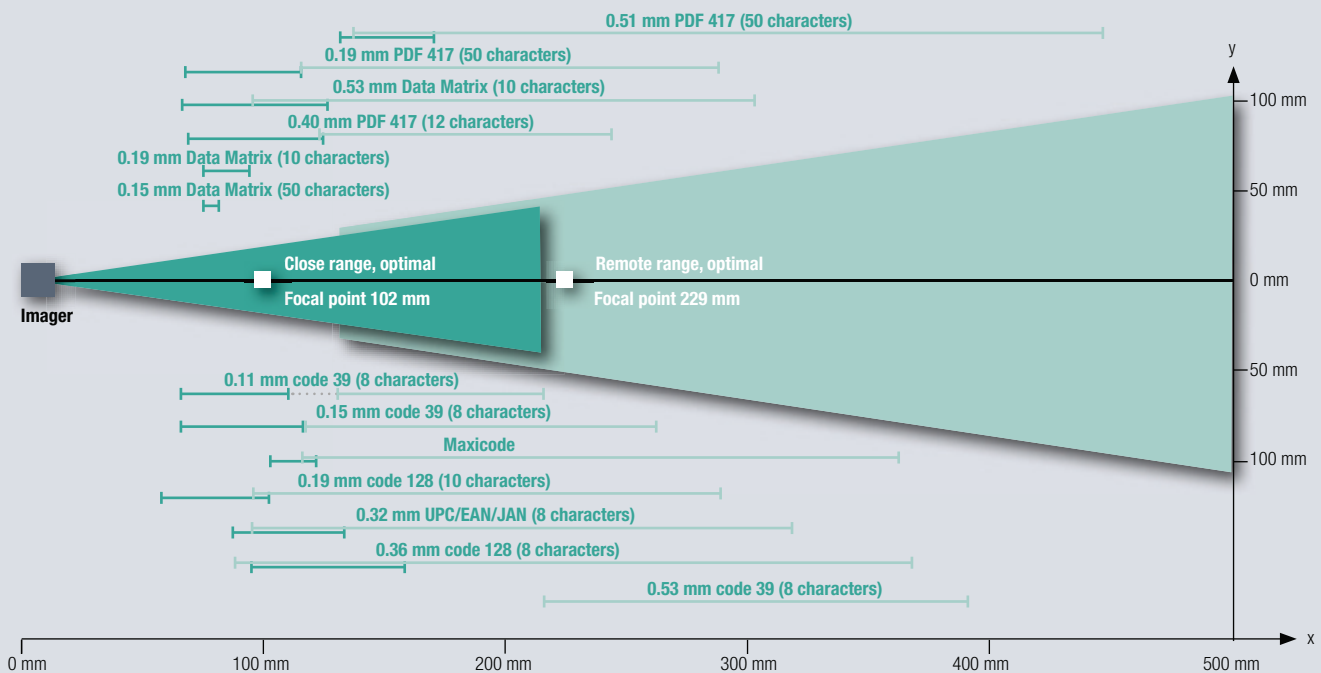
- Maximum battery life of one week
- Parameterization without PC and control codes
- Full performance of the MAH200

JavaScript

VISION CONFIGURATOR



READ RANGE FOR DIFFERENT SYMBOLOGIES



HANDHELDS TECHNICAL DATA

Handheld	MAH120-HD / MAH120-WH-HD	MAH200	MAH300
Model number	ODT-HH-MAH120-HD ODT-HH-MAH120-WH-HD	ODT-HH-MAH200 ODT-HH-MAH200-B15 (Bluetooth)	ODT-HH-MAH300 ODT-HH-MAH300-B15 (Bluetooth)
Code symbologies	Maxi Code, PDF 417, Data Matrix, QR Code, MicroPDF 417, UCC Composite, Aztec Code, Code 39, Code 128, UPC, EAN, JAN, Int 2 of 5, Codabar, Code 93, UCC RSS, POSTNET, PLANET, Japanese Post, Australia Post, Royal Mail, 4-State Customer Barcode (Intelligent Mail® Barcode), RM4SCC, KIX Code, Codablock, Pharmacode (MAH120-WH-HD only)		
Read field	80 mm x 100 mm	125 mm x 200 mm	
Read distance	20 mm ... 150 mm	50 mm ... 500 mm	
Interfaces	RS232, USB, Connection to fieldbus (via module)	RS232, USB, Bluetooth, connection to fieldbus (via module), PS/2	
Degree of protection	IP20		
Dimensions	114 mm x 63 mm x 180 mm	111 mm x 46 mm x 32 mm	111 mm x 46 mm x 42 mm

HANDHELD ACCESSORIES



	Model number	Description	Use with	
			MAH120	MAH200/300
Interfaces	ODZ-MAH-CAB-B14	USB connecting cable 1.85 m	■	■
	ODZ-MAH-CAB-B14-3.7 m	USB connecting cable 3.7 m	■	■
	ODZ-MAH-CAB-R2	RS232 connecting cable	■	■
	ODZ-MAH-CAB-CHARGE	Charging cable for power supply	■	■
	ODZ-MAH-CAB-CBOX	Extension cable to CBX800	■	■
	ODZ-MAH-B15-M3	Bluetooth modem with USB / RS232 interface		■
Power supply	ODZ-MAH-SUPPLY	Power supply for RS232 and charging cable	■	■
	ODZ-MAH-BLANK	Battery compartment cover		■
	ODZ-MAH-BAT	Lithium ion battery 1950 mAh		■
Grips	ODZ-MAH-GRIP1	Handle with trigger button		■
	ODZ-MAH-GRIP2	Handle with trigger button and battery 1950 mAh		■
	ODZ-MAH-GRIP3	Handle with trigger button and battery 3900 mAh		■
Bracket	ODZ-MAH120-BRACKET-W	Wall mount bracket	■	
	ODZ-MAH200-BRACKET	Bracket for MAH200		■
	ODZ-MAH300-BRACKET	Bracket for MAH300		■
Chargers	ODZ-MAH-CHARGER	Charger for scanners with grip		■
	ODZ-MAH200-CHARGER	Charger for MAH200 without grip		■
	ODZ-MAH-CHARGER-SINGLE	Charger for scanners without grip		■

HANDHELD BARCODE READERS



Pepperl+Fuchs offers an extensive range of high-performance handheld barcode readers. Versions are available with PS/2, RS232, or USB interface. In addition to wired versions, wireless solutions with a 30 m communication range are also available. The areas of application include point-of-sale data acquisition, process control, and logistics. A comprehensive range of accessories is also available.



Barcodes enable printed data to be machine read. Barcodes are used in almost every area of industry, trade, and everyday life.

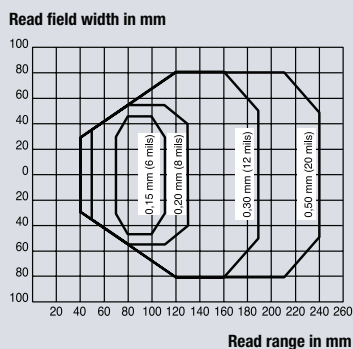
The Pepperl+Fuchs product range includes compact scanners, CCD cameras, and products for larger sensing ranges. We have the right solution for your application.

With the Windows-based configuration software, the devices are easy to program and the quality of the reading is easy to control during operation.



SMALL MODEL WITH HIGH READ PERFORMANCE

VB6 SERIES READ CURVE



VB6 SERIES

- Very small design (40 mm x 30 mm x 22 mm), particularly suitable for packaging machines
- Reads very small codes to 0.15 mm
- Very high scan rate, up to 1200 scans/s
- Read rate displayed in test mode

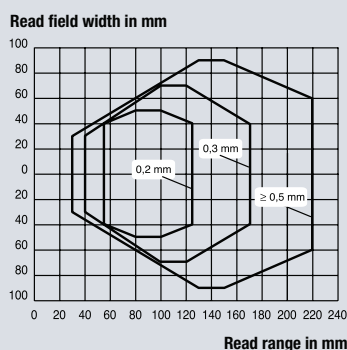


VB6 SERIES TECHNICAL DATA

Model number	VB6
Read distance	up to 240 mm
Min. resolution	0.15 mm (6 mils)
Scan rate	1200 scans/s
Interface	2 * RS232 / 1 * RS485
Dimensions	40 mm x 30 mm x 22 mm

COMPACT STANDARD IMAGER

VB12-220 SERIES READ CURVE



VB12 SERIES

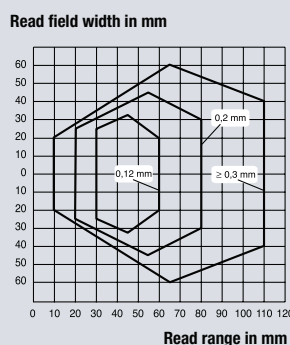
- Up to 500 scans/s
- External trigger input
- Two programmable outputs
- Also available as a raster scanner and with lateral light exit (suitable for restricted spaces)



VB12 SERIES TECHNICAL DATA

Model number	VB12-220 VB12-220-S	VB12-220-R VB12-220-S-R	VB12-110 VB12-110-S	VB12-110-R VB12-110-S-R
Read range in mm	30 ... 220		10 ... 110	
Min. resolution	0.2 mm (8 mils)		0.12 mm (5 mils)	
Scan rate	500 scans/s		500 scans/s	
Grid in mm	-	15 by 220	-	15 by 220
Main interface	RS232		RS232	
Auxiliary interface	RS232 up to 115.2 kBit/s		RS232 up to 115.2 kBit/s	
Dimension in mm	80 x 22.5 x 50		80 x 22.5 x 50	

VB12-110 SERIES READ CURVE



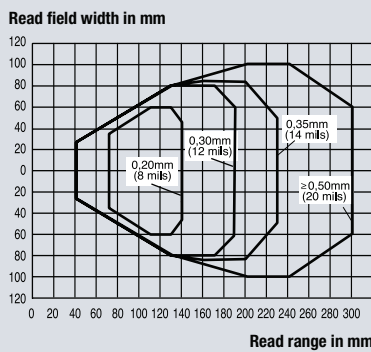
THE FLEXIBLE DEVICE WITH OPTIMIZED READ PERFORMANCE

VB14N SERIES

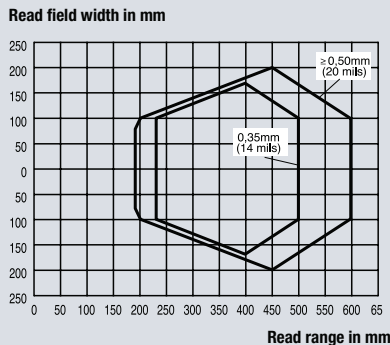
- Very good read performance with low barcode contrast due to optimized light/dark differentiation
- ACB code reconstruction for detection of partially damaged or normally unreadable barcodes
- Automatic code identification for detection of unknown barcodes
- Convenient teach-in of codes via mode button
- Up to 32 scanners can be connected to each other with ID-NET™
- Simple parameterization with Windows-based PC software
- Available as a raster and line scanner



VB14N-300 SERIES READ CURVE



VB14N-600 SERIES READ CURVE



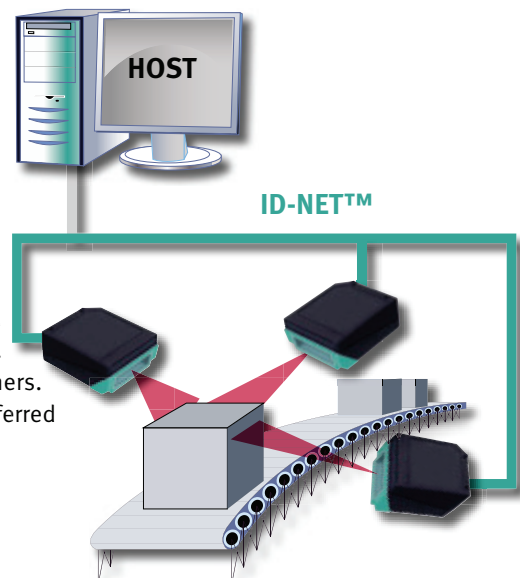
VB14N SERIES TECHNICAL DATA

Model number	VB14N-300	VB14N-300-R	VB14N-600	VB14N-600-R
Read range in mm	40 ... 300		190 ... 600	
Min. resolution	0.2 mm (8 mils)		0.35 mm (14 mils)	
Scan rate	500 ... 800 scans/s		600 ... 1000 scans/s	
Grid in mm	–	18 by 300	–	35 by 600
Interfaces	RS232 + RS485 up to 115.2 kBit/s ID-NET up to 1 Mbit/s			
Dimension in mm	68 x 34 x 84		68 x 34 x 84	

NEW CONNECTION TECHNOLOGY WITH THE NEW ID-NET™ HIGH-SPEED BUS

The VB14N series is equipped with an ID-NET™ interface. This allows up to 32 scanners to be connected, enabling very fast data transfer with just a single assigned address at the higher level fieldbus.

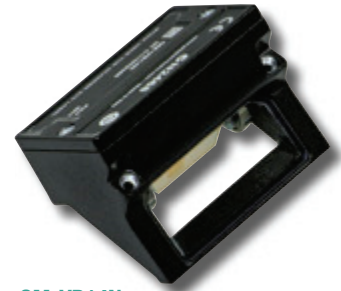
Several scanners can be connected locally via the ID-NET™ interface, and used to identify all sides of an object. A trigger sensor can activate all scanners. Just one valid code needs to be transferred to the host.



ACCESSORIES FOR VB14N



DM-VB14N-90
90° deviation mirror



OM-VB14N
Optical oscillating mirror



DM-VB14N-102
102° deviation mirror



OMH-VB01
Mounting bracket for VB12, VB14N

CONNECTION TO FIELDBUS



CBX100

- Standard connection via serial interface
- With backup module to save imager parameters (as optional accessory)



CBX500

- Modular box system available for different interfaces (via plug-in fieldbus modules) and in various degrees of protection
- Spring terminals for the simple connection of the scanner signal lines
- The following fieldbus modules are available: PROFIBUS, Ethernet, DeviceNet, CC-Link, PROFINET, Modbus TCP, CanOpen

Available as a set:

Interface	Model number	Degree of protection
PROFIBUS	CBX500-KIT-B6	IP40
PROFINET	CBX500-KT-B17	IP20
Ethernet	CBX500-KIT-B19-IP54	IP54
	CBX500-KIT-B19-IP65	IP65

HIGH-PERFORMANCE SCANNER

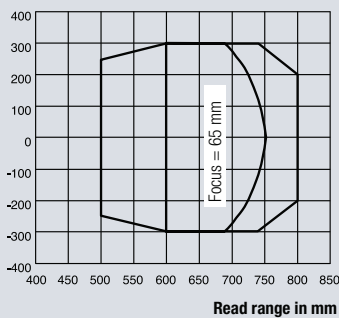
VB34

- Optimized for long distances over 2000 mm
- Keypad and display field for convenient operation
- Available in different interface versions, such as PROFIBUS etc.
- Automatic and programmable focus adjustment
- Light emitting direction can be adjusted in 90° increments

VB34 READ CURVE

Reading characteristics at resolution: 0.20 mm (8 mils)

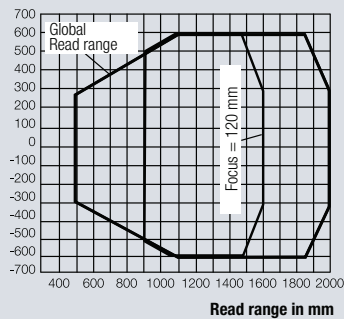
Read field width in mm



VB34 READ CURVE

Reading characteristics at resolution: 0.50 mm (20 mils)

Read field width in mm



VB34,
Linear design



VB34,
with integrated
oscillating mirror

VB34 SERIES TECHNICAL DATA

Versions		Linear	Integrated oscillating mirror
Model numbers	Dimensions	113 x 110 x 99 mm	180 x 113 x 99 mm
	Serial interface	VB34-2500	VB34-2500-OM
	PROFIBUS interface	VB34-2500-P	VB34-2500-OM-P
	Resolution	0.2 mm (8 mils)	
	Scan rate	600 scans/sec. ... 1,200 scans/sec. (programmable)	
	Max. read distance	2,500 mm	
	Readable codes	All common symbols	
	Multi-label read	Up to 10 different codes in the same read cycle	
	Main interface	RS232 up to 115.2 kBit/s	
	Auxiliary interface	RS232 or RS485	
	Baud rate	2,400 baud ... 115,200 baud	
	Input signal	Trigger sensor plus 3 digital auxiliary inputs	
	Output signal	3 digital outputs, programmable via software	
	LED indicators	Ready, Read phase, Data send	
	Operating voltage	15 ... 30 V DC	
	Laser classification	IEC 825 Class 2	
	Degree of protection	IP64	

CONNECTION TO FIELDBUSES



CBX100

- Standard connection via serial interface
- With backup module to save imager parameters (as optional accessory)

CBX800

- Modular box system available for different interfaces (via plug-in fieldbus modules) and in various degrees of protection
- For all code readers and vision sensors with an RS232 interface
- Spring terminals for the simple connection of the scanner signal lines
- The following fieldbus modules are available: PROFIBUS, Ethernet, DeviceNet, CC-Link, PROFINET, Modbus TCP, CanOpen

Already available as a set:

Interface	Model number	Degree of protection
PROFIBUS	CBX800-KIT-B6	IP40
PROFINET	CBX800-KT-B17	IP20
Ethernet	CBX800-KIT-B19-IP54	IP54

Pepperl+Fuchs – the full service provider for sensors – also provides RFID identification systems.

More information at www.pepperl-fuchs.com/ident



FACTORY AUTOMATION – SENSING YOUR NEEDS



Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

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