

ZM18-serie

DATASHEET

Sensor Partners BV

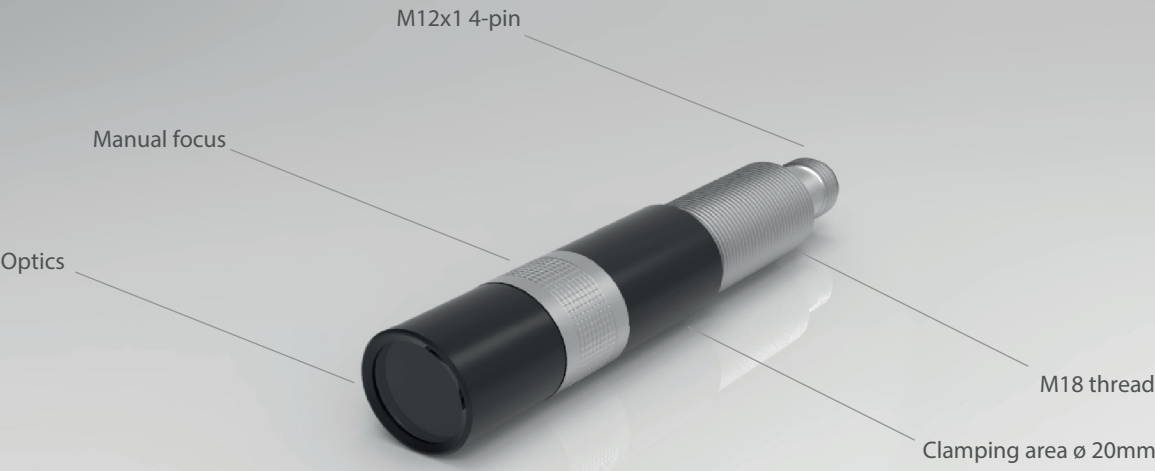
📍 James Wattlaan 15
5151 DP Drunen
The Netherlands

☎ +31 (0)416 - 37 82 39
✉ info@sensorpartners.com
🌐 sensorpartners.com

Sensor Partners BVBA

📍 Z.1 Researchpark 310
B-1731, Zellik
Belgium

☎ +32 (0)2 - 464 96 90
✉ info@sensorpartners.com
🌐 sensorpartners.com



Product family ZM18

Max. output power 200 mW	IP 67	Diode laser	Focusable or fixed focus	Easy installation	Operating voltage 5-30 VDC
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The perfect allrounder

The ZM18 family is a long-proven product line that is useful as a positioning aid and in image processing applications. With a Ø 20mm laser head and an M18 thread, they are easy to attach and can be used in a variety of ways.

The ZM18 lasers are available in blue, green, red, or infrared wavelength and offer various electronic features depending on the requirements. The modular product selector allows the assembly of product features either for a standard positioning task as well as for a high-end machine vision application with demands towards the communication and modulation of the laser. A simple focusing mechanics, optical output power up to 200mW, and the IP67 water and dust protection are additional features of this product family.

HIGHLIGHTS

- Industrial standard
- IP 67
- Optical output power up to 200 mW
- Wavelengths from 405 - 830 nm
- Manual or fixed focus
- TTL modulation up to 500 kHz
- Analog intensity control

APPLICATIONS

- Machine vision
- Triangulation sensors
- 3D-Measurement
- High-precision positioning tasks

ORDER CODE								
Z??	M18	?	-	?	-	?	-	?
Output power	Product name	Electronic		F = focusable		Wavelength		Optic

SYSTEM SPECIFICATIONS

Wavelength	nm
Wavelength tolerance	nm (typical)
Wavelength drift	nm / K (typical)
Output power	mW
Electronic versions	
Pointing Stability	μrad / °C
Long-term power stability	(24h)
Start-up time	sec.
Laser operation mode	

405-450	520	532	635-685	785-830
±10	-5 +10	± 1	±10	±4
0,06	0,06	0,06	0,25	0,25
≤160	≤40	≤40	≤120	≤200
H3	B3, H3	B	B, S3	B, S3
<15				
±3 % over operating temperature range				
<2				
APC				

ELECTRICAL SPECIFICATIONS⁽³⁾

Operating voltage	
Operating current	(max. at 25°C)
Protection	
Electrical isolation	
Connection	
Power consumption	
Communication interfaces	

9 - 30 VDC	9 - 30 VDC	9 - 30 VDC	5 - 30 VDC	5 - 30 VDC
<300 mA	<300 mA	<300 mA	<400 mA	<500 mA
Over temperature protection and LED pre-failure indicator, reverse polarity and transient protection (ESD, burst & surge)				
Potential-free housing				
4-pin M12 plug; cable with flying leads or customized				
<2,7 W	<2,7 W	<2,7 W	<2 W	<2,5 W
I ² C (on request)				

OPTICAL SPECIFICATIONS

Fan angles ⁽¹⁾	Degrees
Line straightness ⁽²⁾	% (of line length)
Line uniformity ⁽³⁾	% (typical)
Dot	
DOE	
Focus range	mm

5°, 10°, 20°, 30°, 45°, 60°, 75°, 90° (homogeneous lines) 3°, 5°, 10°, 15°, 20°, 30°, 90° (Gaussian line profile)
<0,05 %
<25 %
Point elliptical, point circular
Multi line, crosses, grids, etc.
100 mm up to 10.000 mm (or customized fixed focus available)

KEYNOTES

⁽¹⁾ Line length / fan angle at >13,5 % I_{max}

⁽²⁾ Line straightness Deviation from best fit line over the middle 80% of the line, for homogeneous lines

⁽³⁾ Line uniformity Maximum relative optical power variation over the middle 80% of the line, for homogeneous lines and fixed focus

ELECTRONIC VERSIONS

	B	B3	S3	H3
Available Wavelengths	532-830	520	635-830	405-520
Digital modulation	na	na	<500 kHz	<200 kHz
Rise Time (Mod High => 90%)	na	na	<200 ns	<200 ns
Fall Time (Mod Low => 10%)	na	na	<100 ns	<100 ns
signal level	na	na	VIL_max: < +0,9 V VIH_min: > +2,7 V	VIL_max: < +0,9 V VIH_min: > +2,7 V
max. voltage range	na	na	0-30 VDC	0-30 VDC
Analog modulation	na	na	<10 Hz	<10 Hz
active range	na	na	0-1 VDC	0-2 VDC
max. voltage range	na	na	0-30 VDC	0-30 VDC

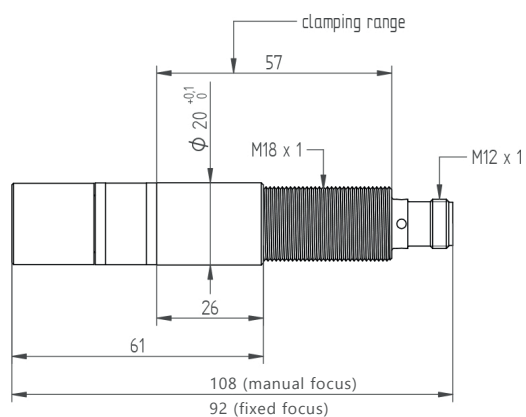
ENVIRONMENTAL CONDITIONS

Operating temperature ⁽¹⁾	°C / °F	-10 °C to +50 °C / 14 °F to +122 °F
Storage temperature	°C / °F	-40 °C to +85 °C / -40 °F to +185 °F
Humidity	%	<90 %, non-condensing
Dissipated heat		<1 W

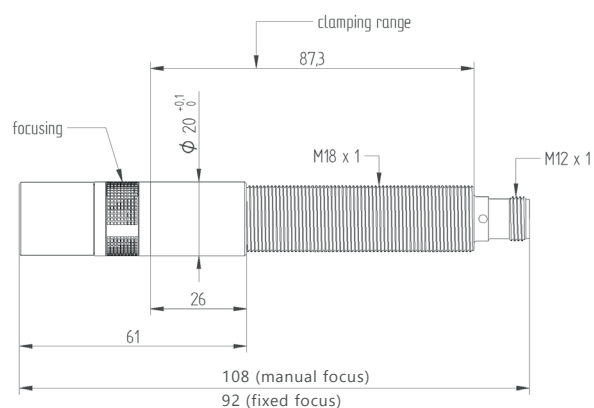
MECHANICAL SPECIFICATIONS

		B	B3	S3	H3
Weight	g	75 g 105 g (532nm)	107 g	84 g	107 g
Length	mm	108 mm 136 mm (532nm)	108 mm	178 mm	138 mm
Diameter head Ø	mm	20 mm			
Material		Aluminium			
Protection class		IP67			
Mounting	(optional)	20 mm mount (alternative M18-thread)			

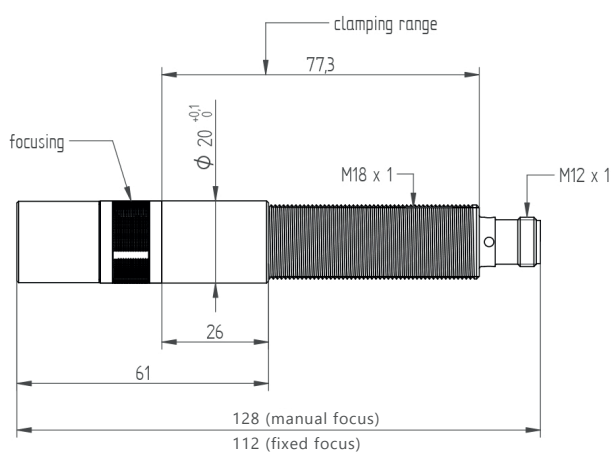
ZM18-B / ZM18-B3



ZM18-H3



ZM18-S3



M12 4-PIN: A-CODING MALE CONNECTOR

According to IEC 61076-2-101

X 1.1	5 - 30 VDC, 15 VA
X 1.2	Digital modulation TTL (only S3, H3)
X 1.3	GND
X 1.4	Analog modulation (only S3, H3)