



(Image for illustrative purposes only)

Datasheet

LED pulser with integrated driver

series:	10582301
Versions:	V1
Release date:	29 Feb 2024
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Foreword / disclaimer

This documentation has been compiled with all possible care. Vision Hardware Partner assumes no responsibility for any errors in this manual and/or the consequences of an erroneous interpretation of the instructions.

In the interest of progress, Vision Hardware Partner reserves the right to perform technical changes without prior notice.

Vision Hardware Partner accepts no liability for damage and/or problems arising from the use of spare parts not supplied by Vision Hardware Partner.

Please notify Vision Hardware Partner (support@VisionHardwarePartner.nl) if you become aware of any errors in this manual or if you feel that a certain topic requires more detailed documentation.

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This language version of the manual is verified by the manufacturer (Original manual).

Please provide feedback

Dear user,

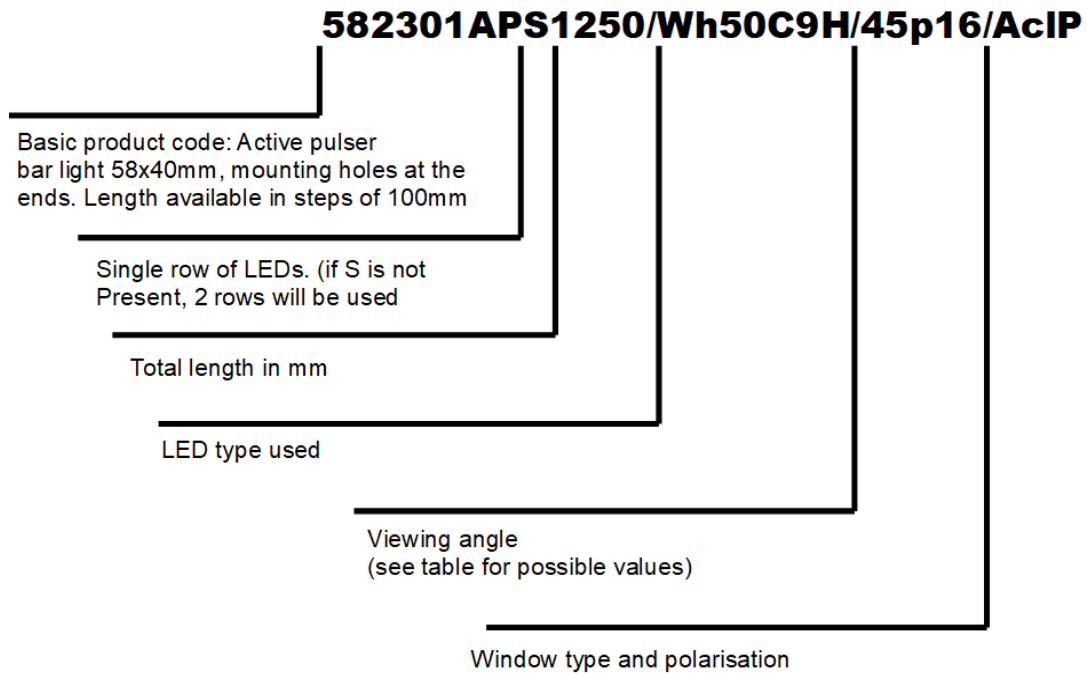
Vision Hardware Partner has a rich experience of using machine vision products in industrial environments. We try to use this experience to create products which are robust, easy to use and suit your requirements while still being affordable.

However, not all applications are the same and not all users have the same requirements. In order to make sure that the needs of as many as possible customers are served it is important to keep in touch with them. So if you can spare a minute please tell us what you do and do not like about our product. This way you will help us to keep on improving our solutions for your machine vision challenges.

You can do this by sending a e-mail to feedback@VisionHardwarePartner.nl.

Thanks in advance.

Product type specification



General properties

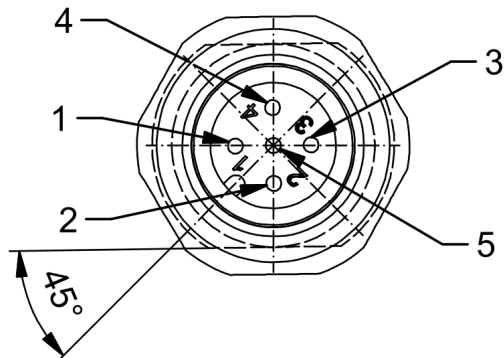
Dimensions Version 1:	58 x 40 mm x Length (order part to length)
Dimensions Version 2:	54 x 46 mm x Length (order part to length)
Protection grade:	IP61
Cable length:	Cables separately ordered
Power:	48VDC, max 0.15A per 100mm length

Power type and connections

This product is intended for use in setups with pulsing (Photo flash) illumination. During the pulse the LEDs are driven at a higher than nominal power. The LEDs can handle such an amount of power for a short duration, as long as the average power does not exceed the nominal power.

This means that there is a limit to the pulse duration and pulsing frequency.

Connector pinout



The device has a standard A-code M12 sensor connector. It is a male, 4 pin

Pin no.	Color (using standard sensor cable)	Signal name	Description
1	Brown	+ power	Powers the LED drivers
2	white	+Control	Powers the control circuit
3	blue	0V	Ground for all pins
4	black	+enable	A logic high level enables the LEDs
5			

electrical characteristics

	Test cond.	min	nom	max	unit
Input voltage (both LEDs and control)		43	48	53	V
Supply current per 100mm lenght				0,16	A
Enable high level		3,5		28	V
Enable input current			10	12	mA

Timing

	Test cond.	min	nom	max	unit
Enable Response time			2		uS
Enable pulse duration*				1	ms
LED duty cycle standard version				3,7	%
LED duty cycle high power version**				1,8	%

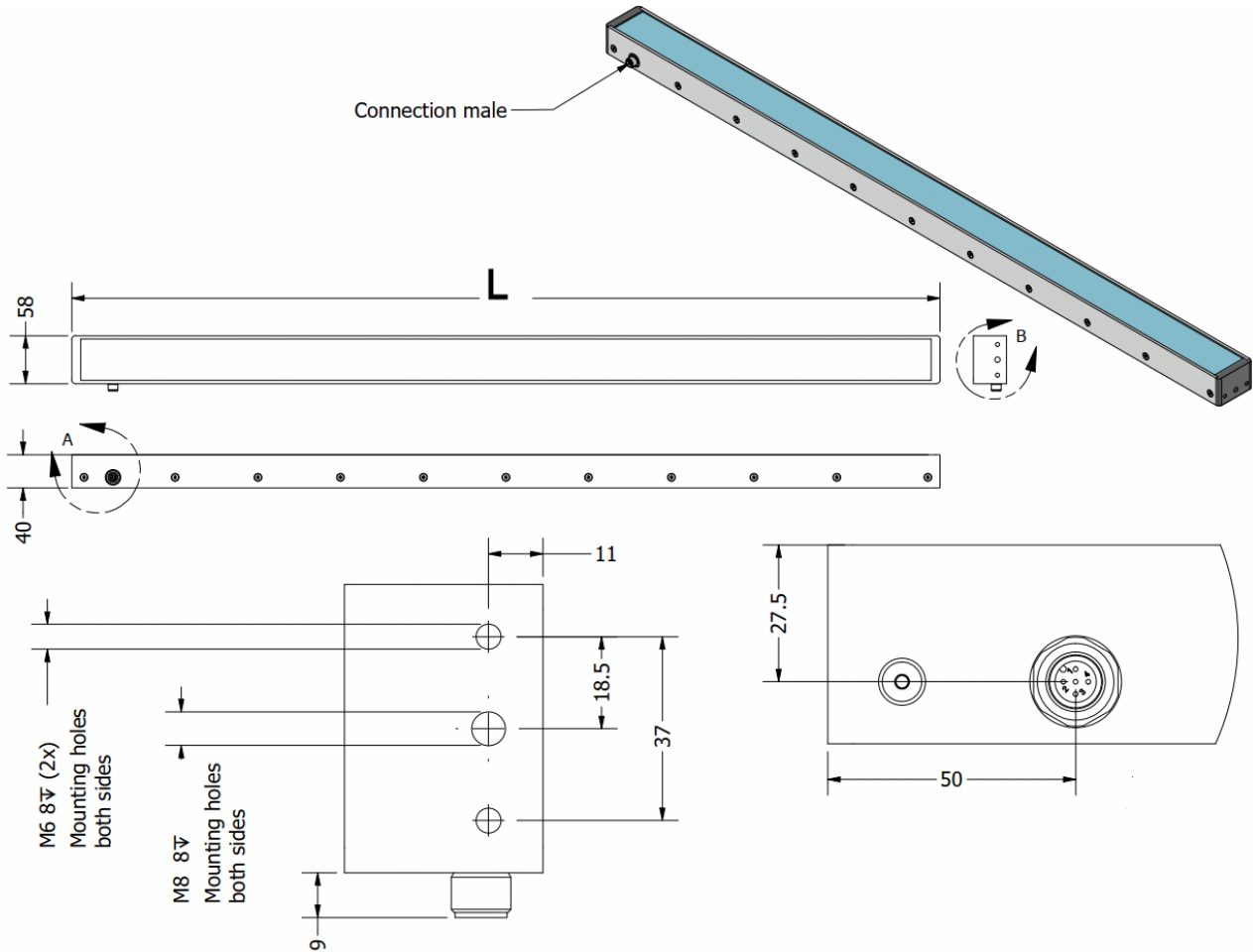


As a safety measure The lamp will automatically switch off if the enable input remains high for longer than the maximum pulse duration. **This is only meant for safety and must not be used routinely**



There are two power classes used for this product. If there is “H” in the LED specification it is a high power type. If two rows of high power LEDs are placed the device is considered a high power version. In that case the maximum duty cycle will be shorter

dimensions



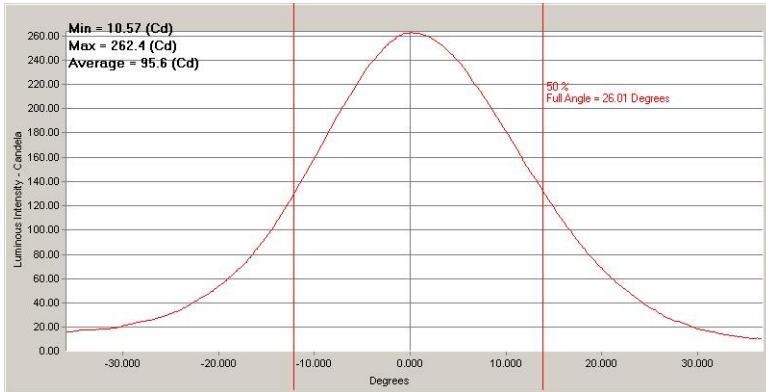
Example type no.	Length (mm)	Light emission length (mm)
582301AP0650/Wh50C9/20d	650	600
582301AP0750/Wh50C9/20d	750	700
..		
...		
582301AP2450/Wh50C9/20d	2450	2400
582301AP2550/Wh50C9/20d	2550	2500
....		

Viewing angles

General information on viewing angles

The light bars contain a number of LEDs in line. The specified viewing angle applies to each single LED in the line.

The below image shows the typical light output vs angle of a specific optic.



The light output decays gradually with the angle. The industry standard for specifying the viewing angle is FWHM (Full Width Half Maximum). The maximum intensity is usually at the 0 degrees (centre) point. The viewing angle is specified to include the area in which the light intensity is between 50 and 100% of the maximum.

Vision Hardware Partner thinks that FWHM angles are a less useful specification for machine vision. If an application is calculated using FWHM the light intensity at the borders of the field of view would be half the intensity in the centre. The software would have to deal with the factor 2 intensity difference. That is why we also specify the full width at 75% of the maximum (FW75%) whenever we can.

There is two types of possible optics. Symmetrical and asymmetrical. The most commonly used type is the symmetrical type. It projects a circle of light. The asymmetrical types will project an ellipse. They have different angles on the X and Y axis.

Available viewing angles

Example type no.	Angle X (FWMH)	Angle X (FW75%)	Angle Y (FWMH)	Angle Y (FW75%)
582301AP0650/Wh50C9/ 20d	20	10		
582301AP0650/Wh50C9/ 24d	24	20		
582301AP0650/Wh50C9/ 37d	37	26		
582301AP0650/Wh50C9/ 77d	77	70		
582301AP0650/Wh50C9/ p43x16d	43		16	
<i>Other angles on request</i>				

Please note: These viewing angles are indicative only. The actual viewing angle depends on the light colour. Shorter wavelengths will give smaller viewing angles.

Colour and wavelength information

Example type no.	Colour	Peak Wavelength / colour temp.
582301AP0650/Vi 410 /20D	Violet	410nm
582301AP0650/bl 455 /20D	Blue	455nm
582301AP0650/bl 465 /20D	Blue	465nm
582301AP0650/Cy 505 /20D	Cyan	505nm
582301AP0650/Gr 525 /20D	Green	525nm
582301AP0650/Am 592 /20D	Amber	592nm
582301AP0650/Rd 623 /20D	Red	623nm
582301AP0650/Rd 660 /20D	Red (Crimson)	660nm
582301AP0650/IR 730 /20D	Red / infrared (cherry red)	730nm
582301AP0650/IR 760 /20D	infrared	760nm
582301AP0650/IR 810 /20D	infrared	810nm
582301AP0650/IR 850 /20D	infrared	850nm
582301AP0650/Wh 33 /20D	Warm white	3300K
582301AP0650/WH 42 /20D	White	4200K
582301AP0650/Wh 50 /20D	White	5000K

Example type no.	Colour	Peak Wavelength / colour temp.
582301AP0650/Wh50C9/20D	White	5000K CRI 90
582301AP0650/Wh62/20D	White	6200K
<i>Other wavelengths: ask</i>		

