

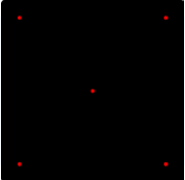
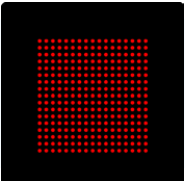
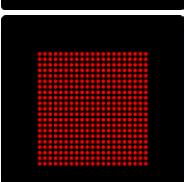
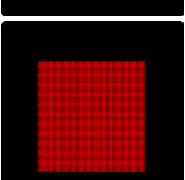
Optics

Z-LASER

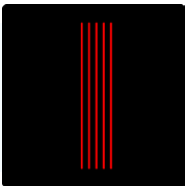
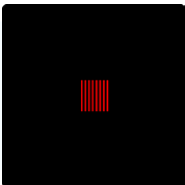
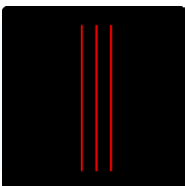
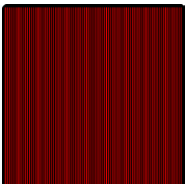
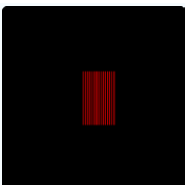
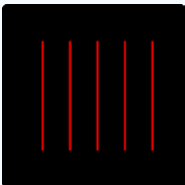


[www.z-laser.es](http://www.z-laser.es)  
[info@z-laser.es](mailto:info@z-laser.es)

# Dot matrixes

	Product name	Article code	Product description	Compatible with
	2x2+1 dot matrix	2x2+1p	2x2+1 dot matrix Angle: 16.1°x16.1° @ 635 nm Projection size in 100 mm: 28 x 28 mm	ZM12 ZM18 ZX20
	17x17 dot matrix	17x17p14	17x17 dot matrix Angle: 14.6°x14.6° @ 635 nm Projection size in 100 mm: 26 x 26 mm	ZM12 ZM18 ZX20
	11x11 dot matrix	11x11p28	11x11 dot matrix Angle: 28°x28° @ 635 nm Projection size in 100 mm: 50 x 50 mm	ZM12 ZM18 ZX20
	13x13 dot matrix	13x13p4	13x13 dot matrix Angle: 4°x4° @ 635 nm Projection size in 100 mm: 7 x 7 mm	ZM12 ZM18 ZX20
	17x17 dot matrix	17x17p5	17x17 dot matrix Angle: 5°x5° @ 635 nm Projection size in 100 mm: 9 x 9 mm	ZM12 ZM18 ZX20
	21x21 dot matrix	21x21p5	21x21 dot matrix Angle: 5°x5° @ 635 nm Projection size in 100 mm: 9 x 9 mm	ZM12 ZM18 ZX20
	16x16 dot matrix	16x16p5	16x16 dot matrix Angle: 5°x5° @ 635 nm Projection size in 100 mm: 9 x 9 mm	ZM12 ZM18 ZX20
	51x51 dot matrix	51x51p22	51x51 dot matrix Angle: 22°x22° @ 635 nm Projection size in 100 mm: 39 x 39 mm	ZM12 ZM18 ZX20
	101x101 dot matrix	101x101p5	101x101 dot matrix Angle: 5.2°x5.2° @ 660 nm Projection size in 100 mm: 9.1 x 9.1 mm	ZM12 ZM18 ZX20

# Parallel lines

	Product name	Article code	Product description	Compatible with
	5 parallel lines	5L6	5 parallel lines Angle: 6°x28.8° @ 635 nm Projection size in 100 mm: 10.4 x 51.2 mm	ZM12 ZM18 ZX20
	7 parallel lines	7L5	7 parallel lines Angle: 5°x7° @ 635 nm Projection size in 100 mm: 8.7 x 12.2 mm	ZM12 ZM18 ZX20
	3 parallel lines	3L6	3 parallel lines Angle: 6.2°x30.0° @ 660 nm Projection size in 100 mm: 10.8 x 56.6 mm	ZM12 ZM18 ZX20
	81 parallel lines	81L64	81 parallel lines Angle: 63.9°x50.2° @ 650 nm Projection size in 100 mm: 128.8 x 93.6 mm	ZM12 ZM18 ZX20
	15 parallel lines	15L24g	15 parallel lines Angle: 23.8°x28.2° @ 520 nm Projection size in 100 mm: 8.7 x 12.2 mm	ZM12 ZM18 ZX20
	5 parallel lines	5L17	5 parallel lines Angle: 17°x17° @ 635 nm Projection size in 100 mm: 29.9 x 29.9 mm	ZM12 ZM18 ZX20

# Parallel lines

	Product name	Article code	Product description	Compatible with
	7 parallel lines	7L21	7 parallel lines Angle: 21.4°x21.4° @ 635 nm Projection size in 100 mm: 38 x 38 mm	ZM12 ZM18 ZX20
	11 parallel lines	11L30	11 parallel lines Angle: 30°x30° @ 635 nm Projection size in 100 mm: 54 x 54 mm	ZM12 ZM18 ZX20
	25 parallel lines	25L27	25 parallel lines Angle: 27°x27° @ 635 nm Projection size in 100 mm: 48 x 48 mm	ZM12 ZM18 ZX20
	21 parallel lines	21L7	21 parallel lines Angle: 7°x7° @ 635 nm Projection size in 100 mm: 12 x 12 mm	ZM12 ZM18 ZX20
	41 parallel lines	41L53	41 parallel lines Angle: 54.9°x42.6° @ 660 nm Projection size in 100 mm: 104.0 x 78.0 mm	ZM12 ZM18 ZX20
	65 parallel lines	65L18	65 parallel lines Angle: 18.4°x18.4° @ 635 nm (more intense middle line) Projection size in 100 mm: 32 x 32 mm	ZM12 ZM18 ZX20

# Crosses

	Product name	Article code	Product description	Compatible with
	Cross	x2	Cross Angle: 2°x2° @ 645 nm Projection size in 100 mm: 3.4 mm	ZM12 ZM18 ZX20
	Cross	x5	Cross Angle: 5°x5° @ 635 nm Projection size in 100 mm: 9 mm	ZM12 ZM18 ZX20
	Cross	x10	Cross Angle: 10°x10° @ 635 nm Projection size in 100 mm: 18 mm	ZM12 ZM18 ZX20
	Cross	x15	Cross Angle: 15°x15° @ 635 nm Projection size in 100 mm: 26 mm	ZM12 ZM18 ZX20
	Cross	x30	Cross Angle: 36°x36° @ 635 nm Projection size in 100 mm: 66 mm	ZM12 ZM18 ZX20
	Cross	x45	Cross Angle: 45°x45° @ 635 nm Projection size in 100 mm: 83 mm	ZM12 ZM18 ZX20
	Cross	x60	Cross Angle: 60°x60° @ 635 nm Projection size in 100 mm: 116 mm	ZM12 ZM18 ZX20

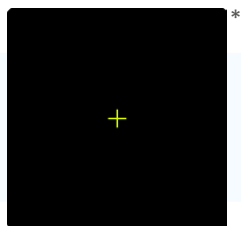
# Crosses

Product name

Article code

Product description

Compatible with

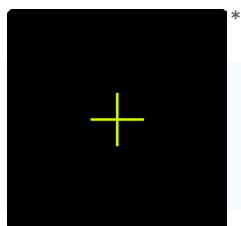


Cross

x5g

Cross  
Angle: 5°x5° @ 520 nm  
Projection size in 100 mm:  
9 mm

ZM18-green  
ZX20-green  
ZD-green

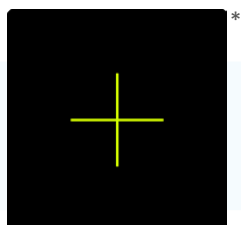


Cross

x15g

Cross  
Angle: 15°x15° @ 520 nm  
Projection size in 100 mm:  
26 mm

ZM18-green  
ZX20-green  
ZD-green

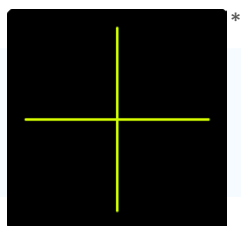


Cross

x25g

Cross  
Angle: 25°x25° @ 532 nm  
Projection size in 100 mm:  
45 mm

ZM18-green  
ZX20-green  
ZD-green



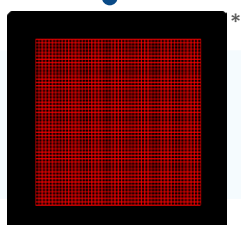
Cross

x52g

Cross  
Angle: 52°x52° @ 515 nm  
Projection size in 100 mm:  
98 mm

ZM18-green  
ZX20-green  
ZD-green

# Squares

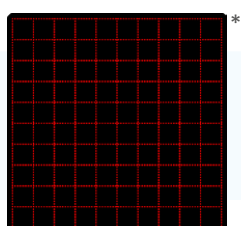


51x51 squares

51x51q23

51x51 squares  
Angle: 22.6°x22.6° @ 635 nm  
Projection size in 100 mm:  
40 x 40 mm

ZM12  
ZM18  
ZX20



10x10 squares  
(dotted lines)

10x10q40

10x10 squares  
Angle: 40.0°x40.0° @ 658 nm  
Projection size in 100 mm:  
72.8 x 72.8 mm

ZM12  
ZM18  
ZX20

# Dots arranged in a line

	Product name	Article code	Product description	Compatible with
	5 dots arranged in a line	5pl6	5 dots arranged in a line Angle: 6° @ 635 nm Projection size in 100 mm: 10.5 mm	ZM12 ZM18 ZX20
	9 dots arranged in a line	9pl0,85	9 dots arranged in a line Angle: 0.85° @ 635 nm Projection size in 100 mm: 1.5 mm	ZM12 ZM18 ZX20
	11 dots arranged in a line	11pl16	11 dots arranged in a line Angle: 16.1° @ 635 nm Projection size in 100 mm: 28.1 mm	ZM12 ZM18 ZX20
	19 dots arranged in a line	19pl13	19 dots arranged in a line Angle: 13.5° @ 635 nm Projection size in 100 mm: 23.5 mm	ZM12 ZM18 ZX20
	99 dots arranged in a line	99pl18	99 dots arranged in a line Angle: 18.4° @ 635 nm Projection size in 100 mm: 32 mm	ZM12 ZM18 ZX20

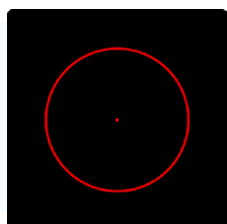
# Geometric forms

Product name

Article code

Product description

Compatible with

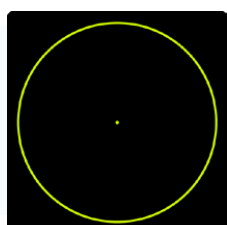


Circle

c34

Circle  
Angle: 34° @ 635 nm  
Projection size in 100 mm:  
60 mm

ZM12  
ZM18  
ZX20

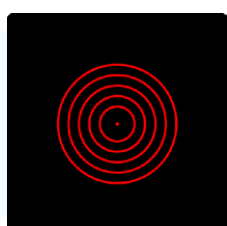


Circle

c45g

Circle  
Angle: 45° @ 520 nm  
Projection size in 100 mm:  
83 mm

ZM18-green  
ZX20-green

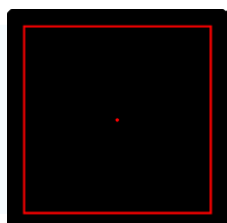


5 concentric circles

5c28

Concentric circles  
Angle: 28.2° @ 635 nm  
Projection size in 100 mm:  
50.2 mm

ZM12  
ZM18  
ZX20



Square

q34

Square  
Angle: 34.3° @ 635 nm  
Projection size in 100 mm:  
60 x 60 mm

ZM12  
ZM18  
ZX20



# Dots in random pattern

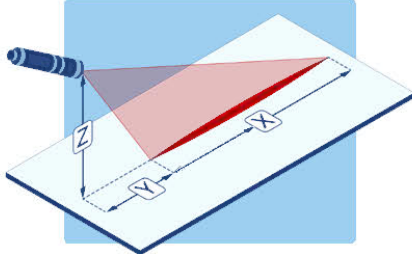
	Product name	Article code	Product description	Compatible with
	<b>33000-Dot Pseudo-Random</b> (Design Wavelength 830 nm)	33kirp60	33000-Dot Pseudo-Random Number of dots: 33,000 Angle: 59.6 x 41.7° @ 830 nm Projection size in 100 mm: 114.6 x 76.3 mm	ZM12 ZM18
	<b>33000-Dot Pseudo-Random</b> (Design Wavelength 645 nm)	33krp45	33000-Dot Pseudo-Random Number of dots: 33,000 Angle: 45.9 x 31.5° @ 645 nm Projection size in 100 mm: 84.8 x 56.4 mm	ZM12 ZM18
	<b>40100-Dot Pseudo-Random</b> (Design Wavelength 850 nm)	40kirp60	40100-Dot Pseudo-Random Number of dots: 40,100 Angle: 59.7 x 39.6° @ 850 nm Projection size in 100 mm: 114.9 x 72.0 mm	ZM12 ZM18
	<b>31806-Dot Truly-Random</b> (Design Wavelength 830 nm)	31kirp61	31806-Dot Pseudo-Random Number of dots: 31,806 Angle: 61.3 x 47.0° @ 830 nm Projection size in 100 mm: 118.5 x 86.9 mm	ZM12 ZM18
	<b>47708-Dot Truly-Random</b> (Design Wavelength 830 nm)	47kirp61	47708-Dot Truly-Random Number of dots: 47,708 Angle: 61.3 x 47.0° @ 830 nm Projection size in 100 mm: 118.5 x 86.9 mm	ZM12 ZM18
	<b>29594-Dot Truly-Random</b> (Design Wavelength 830 nm)	29kirp61	29594-Dot Pseudo-Random Number of dots: 29,594 Angle: 61.3 x 46.8° @ 830 nm Projection size in 100 mm: 118.5 x 86.5 mm	ZM12 ZM18

\*These illustrations serve as symbolic representation, the illustrations may differ from the original.

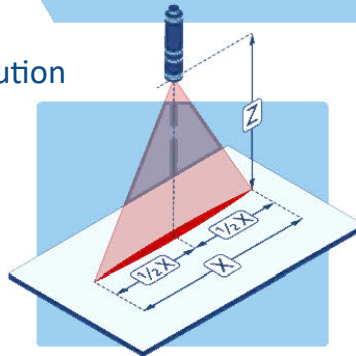
# Z-LASER application and installation options.

This page shows you the different options for employing and installing our positioning lasers. The examples are numbered. We can use the dimensions x, y and z to provide you with a more accurate offer for your special laser.

## 1. Line with Gaussian light distribution



(a) Standard installation situation (inclination 45°)



(b) Vertical installation (perpendicular 90°)

### Dimensions:

Installation height:



Required line length:

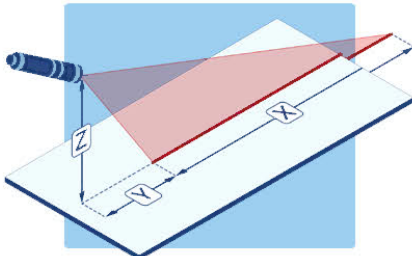


Offset from start of beam:

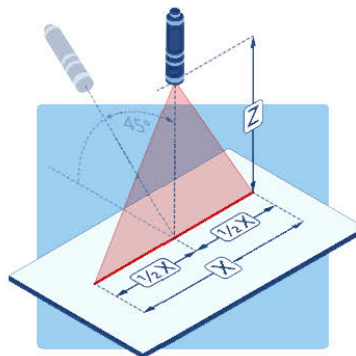


(results from different optical fan angles and the inclination of the laser)

## 2. Line with homogeneous light distribution



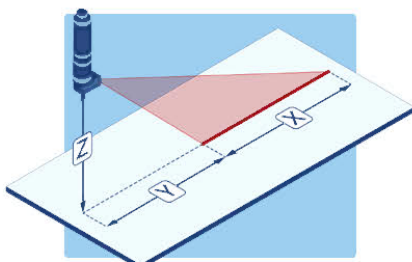
(a) Long homogeneous line (up to max. 1 m installation height)



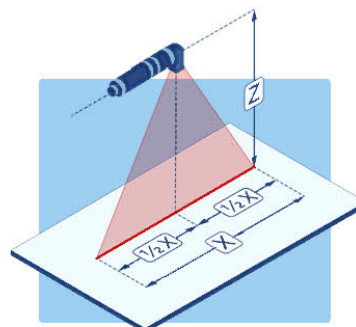
(b) Vertical installation (up to 45°)

### Optional

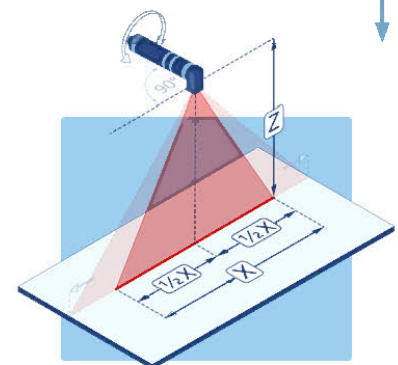
## I. Laser with angular optic head



(a) Vertical beam emitted downwards

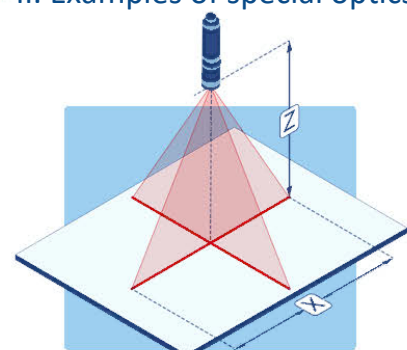


(b) Beam parallel to the housing

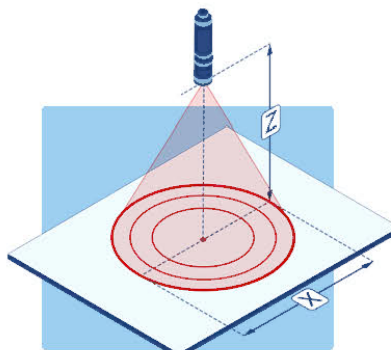


(c) Beam perpendicular to the housing (tiltable)

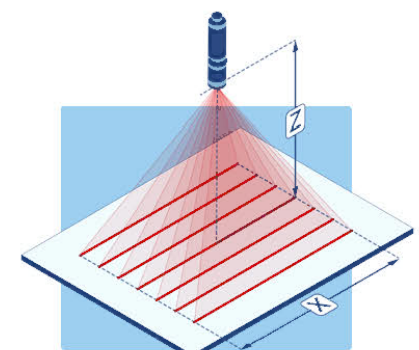
## II. Examples of special optics



(a) Cross



(b) Concentric circles



(c) Parallel lines

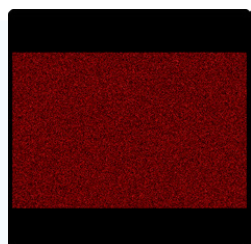
# Dots in random pattern

Product name

Article code

Product description

Compatible with



51978-Dot  
Truly-Random  
(Design Wavelength  
640 nm)

51krp52

51978-Dot Truly-Random  
Number of dots: 51,978  
Angle: 52.0 x 66.2° @ 640 nm  
Projection size in 100 mm:  
97.5 x 130.4 mm

ZM12

ZM18



101050-Dot  
Truly-Random  
(Design Wavelength  
640 nm)

101krp53

101050-Dot Truly-Random  
Number of dots: 101,050  
Angle: 53.3 x 67.6° @ 640 nm  
Projection size in 100 mm:  
100.4 x 133.9 mm

ZM12

ZM18

## Laser targeting goggles

Laser target glasses for better visibility of laser projections on light and dark surfaces.



NOT suitable as laser safety goggles!



LZB red

LZB

Laser targeting goggles for  
red lasers

ZM12

ZM18



LZB green

LZB green

Laser targeting goggles for  
green lasers

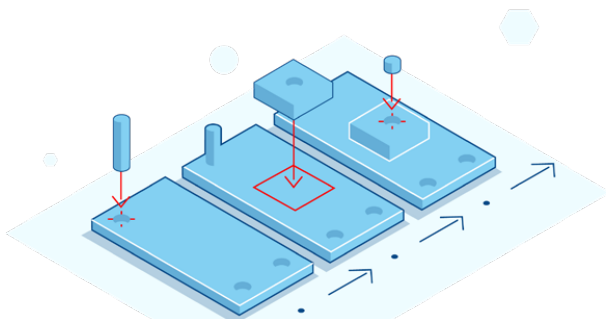
ZM12

ZM18

# About Z-LASER

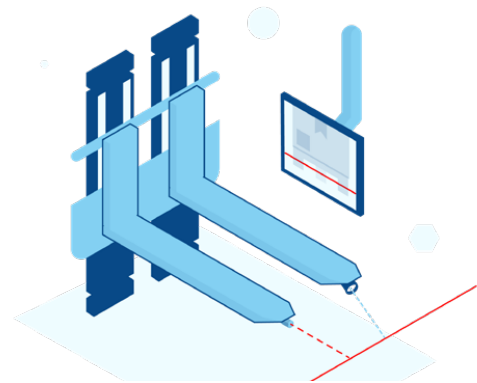
Z-LASER is a German manufacturer of laser sources for innovative customer applications. Over the past 30 years we have successfully established ourselves in the following areas:

- Laser as positioning aid (industry and trade)
- Lasers for image processing
- Laser projectors as positioning aids (industry and trade)
- Customer-specific lasers (OEM laser solutions)



## Intelligent technologies

Our intelligent systems – consisting of mechanics, electronics, and optics – allow a high coverage of all customer requirements and contribute to a clear differentiation from competitors. Numerous patents and utility models have been successfully registered in recent years.



## Innovations for the future

Today, the company is also successful in many new, innovative industries that demand advanced laser technologies and designs.

„Quality is when  
customers return to us  
- not lasers.“

- Kurt-Michael Zimmermann,  
Founder Z-LASER GmbH

## Quality policy & mission statement

Quality starts with the conversation with the customer. His wishes, needs and expectations determine our entrepreneurial actions. We constantly rethink our activities. Misunderstandings should be avoided and the products and services should meet the customer's quality requirements. Every employee from all areas and in all activities is responsible for quality. This quality cannot be checked, therefore it is consistently produced by us.

## Supplier policies

Z-LASER is a socially responsible company that is committed to the well-being of people and the environment. Compliance with ethical principles and legally binding regulations is a matter of course for us.



We see it as our duty to carry out our business activities accordingly and expect our suppliers to do the same. For this reason, we demand REACH and RoHs conformity from supplied products as well as articles and the avoidance of conflict materials as far as possible.



Z-LASER generates a considerable part of its energy requirements via its own solar system and thus makes an active contribution to climate protection.

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Don't hesitate to contact us!

# Z-LASER

<https://www.z-laser.es>

email: [info@z-laser.es](mailto:info@z-laser.es)

Tlf: 937 750 750



„Quality is when customers return to us  
- not lasers.“

- Kurt-Michael Zimmermann,  
Founder Z-LASER GmbH

