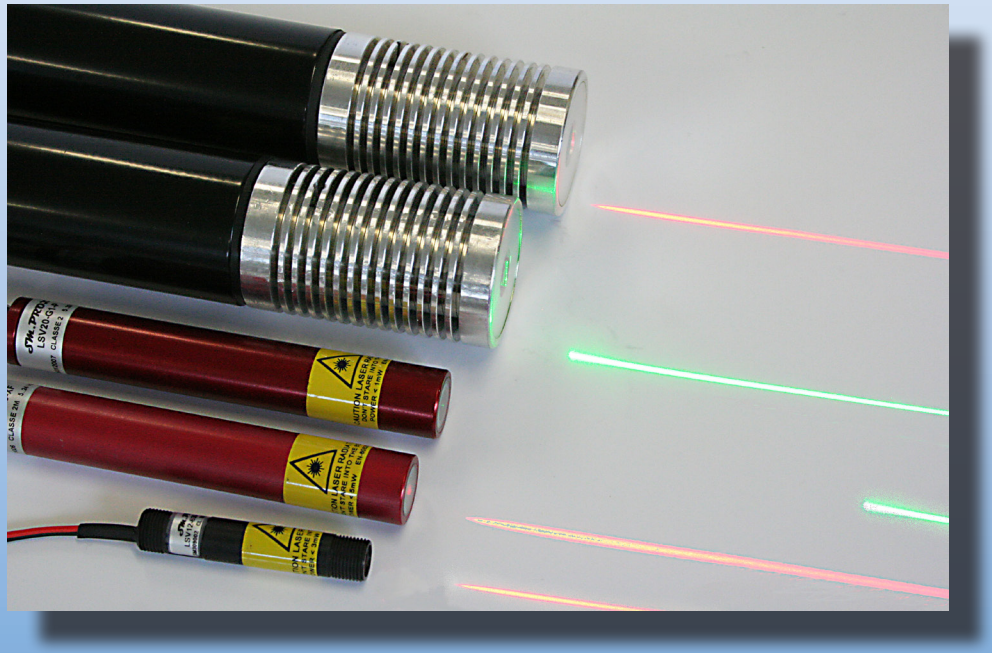
CATALOGUE
LASER POINTERS



SM.PROX SRL
Via della Beverara 13/A - 40131 Bologna - Italy
Tel. +39 051 6350755 - Fax +39 051 6353462
www.smprox.it - info@smprox.it

LASER POINTER - LS12 SERIE

Laser pointer made of a high quality red laser diode, guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 3mW. Possibility of light intensity adjustment, very usefull in case of clear objects. Shielded cable.

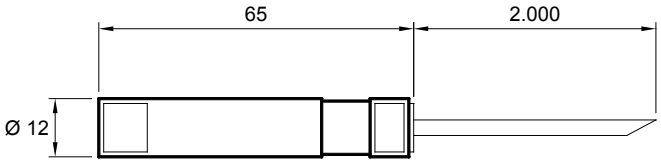
TYPE - ART. NO.

LS12-635-3-T20-P-V - SM305001

TYPE DESCRIPTION

LS12 = laser pointer Ø 12
635 = wave length 635nm
3 = power 3mW
T20 = life > 20.000 h
P = point
V = light intensity adjustment

DIMENSIONS AND TECHNICAL DATA



Power supply unit ALD 220-05-0.3A

Lens type	point
Power supply	2,7-5,0Vdc
Reverse polarity protection	yes
Permitted temperature	-10...+50°C
Housing material	plastic
Focus regulation	yes, with screwdriver
Automatic control of the output power	yes
Current consumption	~ 40mA
Point at max. 1m. (mm) ~	Ø 2.5
Tollerance of lens for line	*/- 15%
Min. line thickness	~ 1.5mm
Collimated beam divergence	< 1,4mrad.
Electrical insulation of the module	yes
Cable connection	2000 mm
Safety class	2M (*)
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

LASER POINTER - LS12 SERIE

**Laser pointer made of a high quality red laser diode,
guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 3mW.**

TYPE - ART. NO.

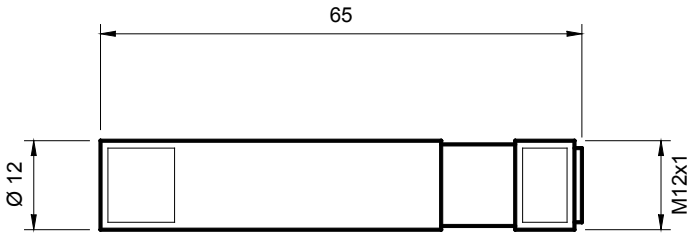
LS12-635-3-T20-P-Y1
LS12-635-3-T20-X-Y1 - SM305009
LS12-635-3-T20-60-Y1 - SM307005

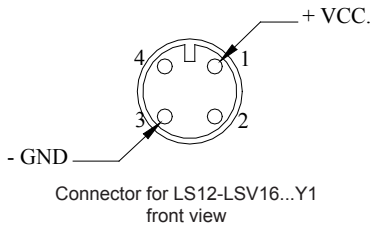
TYPE DESCRIPTION

LS12 = laser pointer Ø 12
635 = wave length 635nm
3 = power 3mW
T20 = life > 20.000 h
P = point
X = cross
60 = line with lens 60°
Y1 = connector

DIMENSIONS AND TECHNICAL DATA

Power unit type ALSW1000
Female connectors, see accessories catalog





Connector for LS12-LSV16...Y1
front view

Lens type	point	cross	60
Power supply	2,7-5,0 Vdc		
Reverse polarity protection	yes		
Permitted temperature	-10...+50°C		
Housing material	plastic		
Focus regulation	no		
Automatic control of the output power	yes		
Current consumption	~ 40 mA typical		
Point at max. 1 m. (mm) ~	Ø 2.5	-	-
Cross at max. 1 m. (mm)	-	150 x 150	-
Line length at max. 1 m. (mm)	-	-	1100
Tollerance of lens for line	+/- 15%		
Min. line thickness	~ 1,5 mm		
Collimated beam divergence	< 1,4 mrad.		
Electrical insulation of the module	yes		
Connection	metal connector M12x1		
Safety class	2M (*)	2M	2 (*)
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.			
Laser according to EN 60825-1, Edition 4 (Laser Safety)			

LASER POINTER - LS12 SERIE

Laser pointer made of a high quality laser diode with red light, guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 3mW.

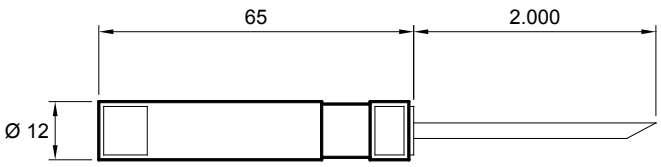
TYPE - ART. NO.

LS12-635-3-T20-P - SM305010
LS12-635-3-T20-X
LS12-635-3-T20-60 - SM306005

TYPE DESCRIPTION

LS12 = laser pointer Ø 12
635 = wave length 635nm
3 = power 3mW
T20 = life > 20.000 h
P = point
X = cross
60 = line with lens 60°

DIMENSIONS AND TECHNICAL DATA



Power unit type ALSW1000

Lens type	point	cross	60
Power supply	2,7-5,0 Vdc		
Reverse polarity protection	yes		
Permitted temperature	-10...+50°C		
Housing material	plastic		
Focus regulation	no		
Automatic control of the output power	yes		
Current consumption	~ 40 mA typical		
Point a max. 1 m. (mm) ~	Ø 2.5	-	-
Cross a max. 1 m. (mm)	-	150 x 150	-
Line length at max. 1 m. (mm)	-	-	1100
Tollerance of lens for line	+/- 15%		
Min. line thickness	~ 1,5 mm		
Collimated beam divergence	< 1,4 mrad.		
Electrical insulation of the module	yes		
Cable connection	2000 mm		
Safety class	2M (*)	2M	2 (*)
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.			
Laser according to EN 60825-1, Edition 4 (Laser Safety)			

LASER POINTER - LS12 SERIE

**Laser pointer made of a high quality red laser diode,
guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 3mW.**

TYPE - ART. NO.

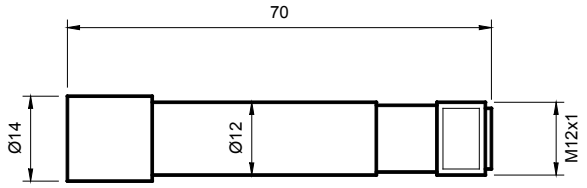
LS12-635-3-T20-X-YA - SM306006

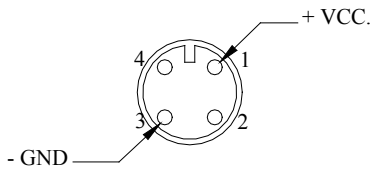
TYPE DESCRIPTION

LS12 = laser pointer Ø 12
635 = wave length 635nm
3 = power 3mW
T20 = life > 20.000 h
X = cross
YA = plastic connector M12x1

DIMENSIONS AND TECHNICAL DATA

Power unit type ALSW1000
Female connectors, see accessories catalog





Connector for LS12-LSV16...Y1
front view

Lens type	cross
Power supply	2,7-5,0 Vdc
Reverse polarity protection	yes
Permitted temperature	-10...+50°C
Housing material	plastic
Focus regulation	yes
Automatic control of the output power	yes
Current consumption	~ 40 mA typical
Point a max. 1 m. (mm) ~	
Cross a max. 1 m. (mm)	150 x 150
Line length at max. 1 m. (mm)	
Tollerance of lens for line	+/- 15%
Min. line thickness	~ 1,5 mm
Collimated beam divergence	< 1,4 mrad.
Electrical insulation of the module	yes
Connection	plastic connector M12x1
Safety class	2M
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

LASER POINTER - LSV12 SERIE

**Laser pointer made of a high quality red laser diode,
guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 3mW.**

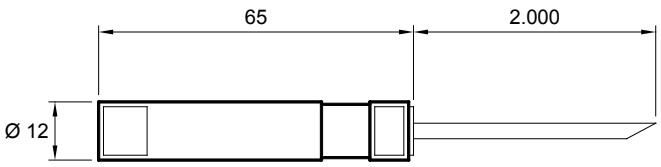
TYPE - ART. NO.

LSV12-635-3-T20*-P - SM309002
LSV12-635-3-T20*-X
LSV12-635-3-T20*-60 - SM306010

TYPE DESCRIPTION

LSV12 = laser pointer Ø 12
635 = wave length 635nm
3 = power 3mW
T20 = life > 20.000 h, * only by metal fixing
60 = line with lens 60°

DIMENSIONS AND TECHNICAL DATA



Power unit type ALSW1000

Lens type	point	cross	60
Power supply	10...24 Vdc		
Reverse polarity protection	yes		
Permitted temperature	-10...+50°C		
Housing material	plastic		
Focus regulation	no		
Automatic control of the output power	yes		
Current consumption	~ 40 mA typical		
Point a max. 1 m. (mm) ~	Ø 2.5	-	-
Cross a max. 1 m. (mm)	-	150 x 150	-
Line length at max. 1 m. (mm)	-	-	1100
Tollerance of lens for line	+/- 15%		
Min. line thickness	~ 1,5 mm		
Collimated beam divergence	< 1,4 mrad.		
Electrical insulation of the module	yes		
Cable connection	2000 mm		
Safety class	2M (*)	2M	2 (*)
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.			
Laser according to EN 60825-1, Edition 4 (Laser Safety)			

LASER POINTER - LSE12 SERIE

Economical version of laser pointer made of a high quality red laser diode, guaranteed life > 10.000 h, available in wave length = 650 nm and a power of 1mW.

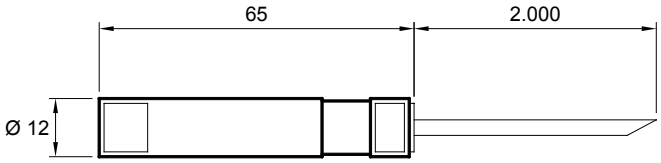
TYPE - ART. NO.

LSE12-650-1-T10-P - SM308004
LSE12-650-1-T10-X - SM308010
LSE12-650-1-T10-60 - SM309001

TYPE DESCRIPTION

LSE12 = laser pointer Ø 12
650= wave length 650nm
1 = power 1mW
T10 = life > 10.000 h
P = point
X = cross
60 = line with lens 60°

DIMENSIONS AND TECHNICAL DATA



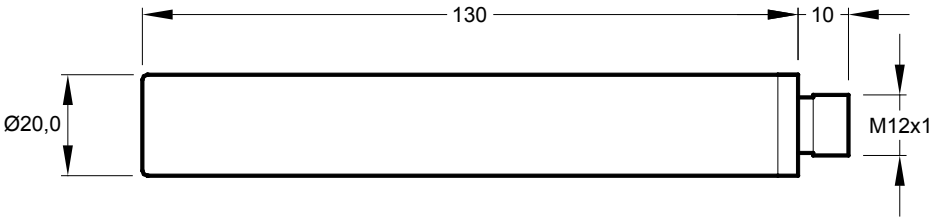
Power unit type ALSW1000

Lens type	point	cross	60
Power supply	5,0 Vdc		
Reverse polarity protection	yes		
Permitted temperature	-10...+50°C		
Housing material	plastic		
Focus regulation	yes		
Automatic control of the output power	yes		
Current consumption	~ 20 mA typical		
Point a max. 1 m. (mm) ~	Ø 1.0	-	-
Cross a max. 1 m. (mm)	-	150 x 150	-
Line length at max. 1 m. (mm)	-	-	1100
Tollerance of lens for line	+/- 15%		
Min. line thickness	~ 1,5 mm		
Collimated beam divergence	< 1,4 mrad.		
Electrical insulation of the module	yes		
Cable connection	2000 mm		
Safety class	2 (*)	2	2 (*)
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the Safety class, according to new regulations valid as from 01/01/04.			
Laser according to EN 60825-1, Edition 4 (Laser Safety)			

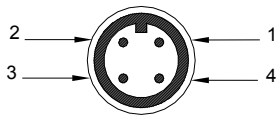
LASER POINTER - LSV20 SERIE - GREEN LIGHT

This new laser pointer is made of a high quality green laser diode, with a power of 1mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

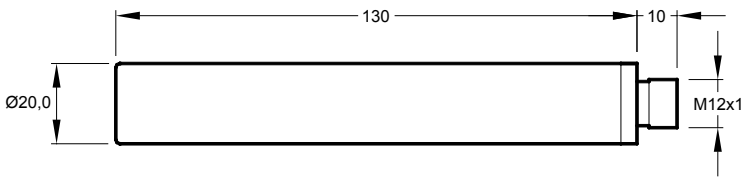
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimensions	Class	Average life	Min.-Max. Temp.	Current consumption
LSV20-G1-L		1mW	532 nm	Line	<1m	2	10.000 h	0°...+40°C	< 30mA
LSV20-G1-P	SM312007	1mW	532 nm	Point	3mm	2	10.000 h	0°...+40°C	< 30mA
LSV20-G1-X		1mW	532 nm	Cross	15X15cm	2	10.000 h	0°...+40°C	< 30mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									

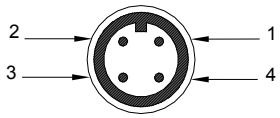
LASER POINTER - LSV20 SERIE - GREEN LIGHT

This new laser pointer is made of a high quality green laser diode, with a power of 5mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

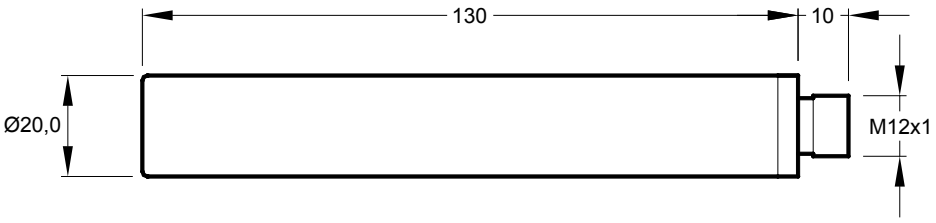
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimensions	Class	Average life	Min.-Max. Temp.	Current consumption
LSV20-G5-L	SM312005	5mW	532 nm	Line	1.5m	2M	10.000 h	0°...+40°C	< 40mA
LSV20-G5-P	SM312003	5mW	532 nm	Point	4mm	2M	10.000 h	0°...+40°C	< 40mA
LSV20-G5-X	SM312004	5mW	532 nm	Cross	15x15cm	2M	10.000 h	0°...+40°C	< 40mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									

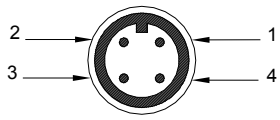
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 3mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

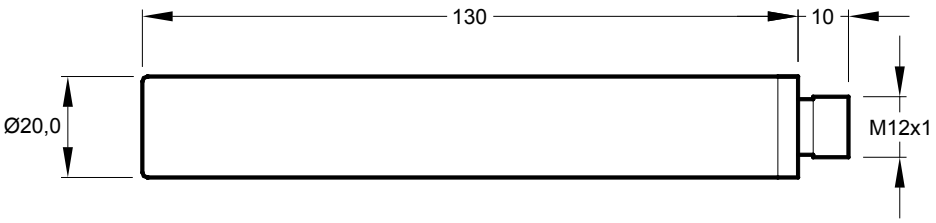
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimensions	Class	Average life	Min. - Max. Temp.	Current consumpion
LSV20-R3-L		3mW	635 nm	Line	2 m	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R3-P		3mW	635 nm	Point	3 mm	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R3-X		3mW	635 nm	Cross	15x15 cm	2M	20.000 h	-10°...+50°C	< 30mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

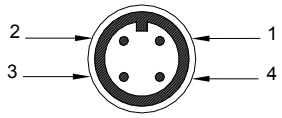
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 5mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

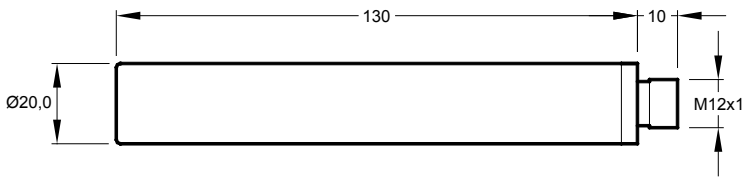
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimensions	Class	Average life	Min.-Max. Temp.	Power consumption
LSV20-R5-L		5m W	635 nm	Line	2 m	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R5-P		5m W	635 nm	Point	3 mm	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R5-X		5m W	635 nm	Cross	15x15 cm	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R5-X-F(^)	SM311006								
On request different power									
(^) with anti-electromagnetic disturbance filter									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

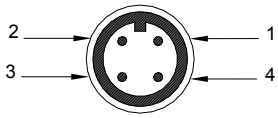
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 10mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

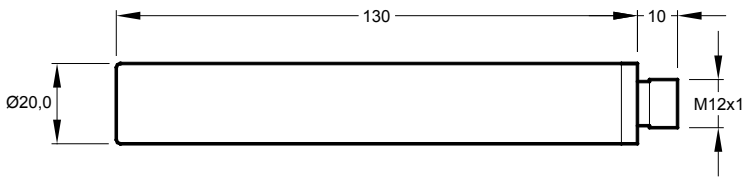
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimension	Class	Avarage life	Min.-Max. Temp.	Power consumption
LSV20-R10-L		10mW	635 nm	Line	3-4 m	2M	20.000 h	-10°...+50°C	< 40mA
LSV20-R10-P		10mW	635 nm	Point	4 mm	2M	20.000 h	-10°...+50°C	< 40mA
LSV20-R10-X		10mW	635 nm	Cross	15x15 cm	2M	20.000 h	-10°...+50°C	< 40mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

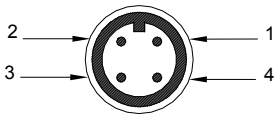
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 15mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

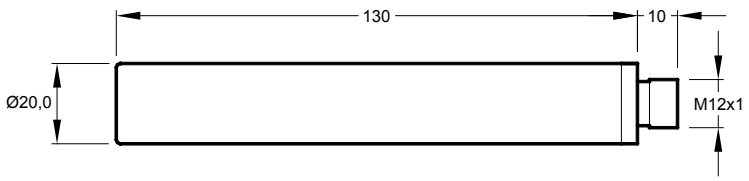
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimension	Class	Avarage life	Min.-Max. Temp.	Power consumption
LSV20-R15-L	SM311004	15mW	635 nm	Line	4-5 m	2M	20.000 h	-10°...+50°C	< 50mA
LSV20-R15-P		15mW	635 nm	Point	4 mm	2M	20.000 h	-10°...+50°C	< 50mA
LSV20-R15-X		15mW	635 nm	Cross	15x15 cm	2M	20.000 h	-10°...+50°C	< 50mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

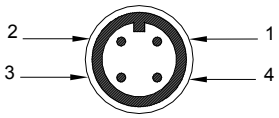
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 30mW and can be supplied from 6 to 32 Vdc. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

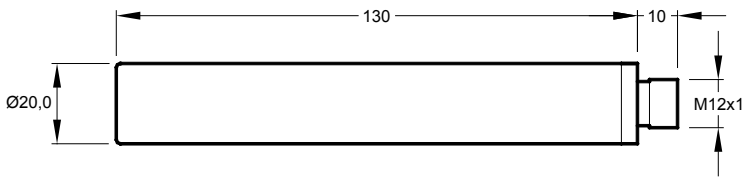
TECHNICAL DATA

Power supply 6-32 Vdc									
Type	Art. no.	Power	Wave length	Version	Dimension	Class	Avarage life	Min.-Max. Temp.	Power consumption
LSV20-R30-L		30mW	635 nm	Line	8-10 m	3R	20.000 h	-10°...+50°C	< 60mA
LSV20-R30-P		30mW	635 nm	Point	5 mm	3R	20.000 h	-10°...+50°C	< 60mA
LSV20-R30-X		30mW	635 nm	Cross	15x15 cm	3R	20.000 h	-10°...+50°C	< 60mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

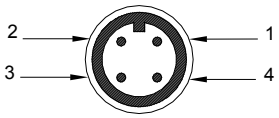
LASER POINTER - LSV20 SERIE - RED LIGHT

This new laser pointer is made of a high quality red laser diode, with a power of 20mW and can be supplied from 12 to 48 Vdc or from 12 to 24 Vac. This laser pointer can generate a point, a line or a cross. On request different lengths of line.
Thanks to the anodized aluminium housing and the protection glass, this laser pointer is suitable for harsh applications or ambient with water (IP67*).

DIMENSIONS



CONNECTION



1 = brown = +Vcc
2 = free
3 = blue = 0 Gnd
4 = free

TECHNICAL DATA

Power supply 12-48 Vdc / 12-24 Vac									
Type	Art. no.	Power	Wave length	Version	Dimension	Class	Avarage life	Min.-Max. Temp.	Power consumption
LSV20-R20-W-L	SM312002	20mW	635 nm	Line	4-6 m	2M	20.000 h	-10°...+50°C	< 30mA
LSV20-R20-W-P		20mW	635 nm	Point	5 mm	3R	20.000 h	-10°...+50°C	< 30mA
LSV20-R20-W-X		20mW	635 nm	Cross	15x15 cm	2M	20.000 h	-10°...+50°C	< 30mA
On request different power									
(*) For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.									
Laser according to EN 60825-1, Edition 4 (Laser Safety)									
* IP40 for P version									

LASER POINTER - LSA45 SERIE

This new laser pointer is made of a high quality green laser diode, with a power of 5mW, guaranteed life > 10.000 h and can be supplied with AC current. This laser pointer can generate a line or a cross. On request different lengths of line.
Thanks to the hermetic housing this laser pointer is suitable for harsh applications or ambient with water, as in the marble industry.
The brightness of the green line is highly visible on dark surfaces.

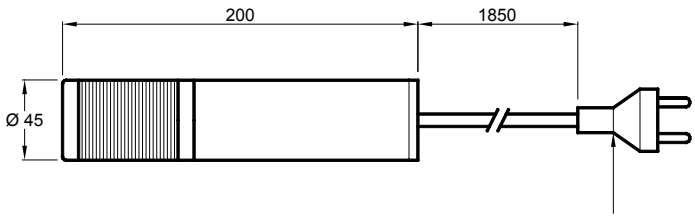
TYPE - ART. NO.

LSA45-532-5-T10-X
LSA45-532-5-T10-04
LSA45-532-5-T10-30
LSA45-532-5-T10-45 - SM311008
LSA45-532-5-T10-60
LSA45-532-5-T10-75
LSA45-532-5-T10-90 - SM311001

TYPE DESCRIPTION

LSA45 = laser pointer Ø 45
532 = wave length 532nm green
5 = power 5mW
T10 = life > 10.000 h
X = cross
04-30-45-60-75-90 = line with lens (°)

DIMENSIONS AND TECHNICAL DATA



cable 3x0.75 and
Schuko connector

The brightness of the line depends on the ambient light and on the colour of the object on which the lines are projected.

Lens type	cross	04	30	45	60	75	90
Power supply	90-264 Vac - 120-275 Vdc						
Permitted temperature	0...+40°C						
Housing material	aluminium						
Degree of protection	IP67						
Focus regulation	no						
Current consumption	~ 300 mA						
Point a max. 1 m.(mm) ~	-	-	-	-	-	-	-
Cross a max. 1 m.(mm)	150x150	-	-	-	-	-	-
Max. line length at 1 m. (mm)	-	300	600	1200	2400	2700	3000*
Tollerance of lens for line	+/- 15%						
Electrical insulation of the module	yes						
Connection	cable 1850 mm - 3x0.75 and Schuko connector						
Safety class	3R						2M
For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.							
Laser according to EN 60825-1, Edition 4 (Laser Safety)							
(*) Line with central point							

LASER POINTER - LSA45 SERIE

This new laser pointer is made of a high quality green laser diode, with a power of 20mW, guaranteed life > 10.000h and can be supplied with AC current. This laser pointer can generate a line.
Thanks to the hermetic housing this laser pointer is suitable for harsh applications or ambient with water, as in the marble industry.
The special lens allows to obtain a long and uniform line.

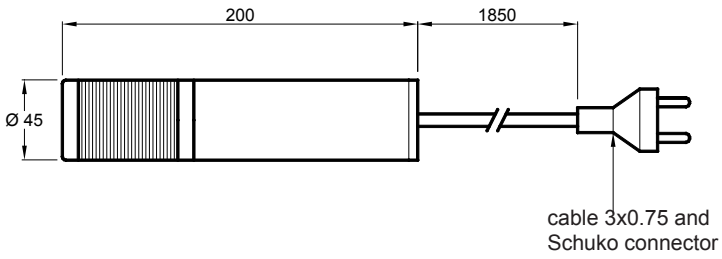
TYPE - ART. NO.

LSA45-532-20-T10-90 - SM310001

TYPE DESCRIPTION

LSA45 = laser pointer Ø 45
532 = wave length 532nm green
20 = power 20mW
T10 = life > 10.000 h
90 = line with lens (°)

DIMENSIONS AND TECHNICAL DATA



The brightness of the line depends on the ambient light and on the colour of the object on which the lines are projected.

Lens type	90
Power supply	90-264 Vac - 100-275 Vdc
Permitted temperature	0...+40°C
Housing material	aluminium
Degree of protection	IP67
Focus regulation	no
Current consumption	~ 300 mA
Line thickness	< 2 mm
Line length at 1 m	2 m
Max. line length	12 m
Warm-up	after 5 min. at 25°C
Electrical insulation of the module	yes
Connection	cable 1850 mm - 3x0.75 and Schuko connector
Safety class	3R
For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

LASER POINTER - LSA45 SERIE

This new laser pointer is made of a high quality green laser diode, with a power of 20mW, guaranteed life > 10.000 h and can be supplied with AC current. This laser pointer can generate a line.
The brightness of the green line is higly visible on dark surfaces.
The special lens allows to obtain a long and uniform line.

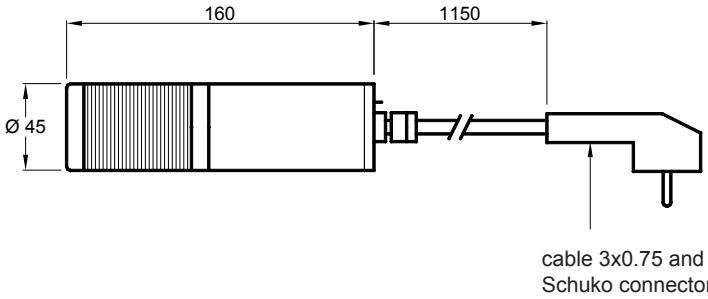
TYPE - ART. NO.

LSA45-532-20-T10-90-SHORT - SM310002

TYPE DESCRIPTION

LSA45 = laser pointer Ø 45
532 = wave length 532nm green
20 = power 20mW
T10 = life > 10.000 h
90 = line with lens (°)

DIMENSION AND TECHNICAL DATA



The brightness of the line depends on the ambient light and on the colour of the object on which the lines are projected.

Lens type	90
Power supply	85-240 Vac
Permitted temperature	0...+40°C
Housing material	aluminium
Degree of protection	IP67
Focus regulation	no
Current consumption	~ 300 mA
Line thickness	< 2 mm
Line length at 1 m	2 m
Max. line length	12 m
Warm-up	after 5 min. at 25°C
Electrical insulation of the module	yes
Connection	cable 1150 mm - 3x0.75 and Schuko connector
Safety class	3R
For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

LASER POINTER - LSA45 SERIE

Laser pointer made of a high quality red laser diode, guaranteed life > 20.000 h, available in wave length = 635 nm and a power of 15mW. Thanks to the hermetic housing this laser pointer is suitable for harsh applications or ambient with water, as in the marble industry.

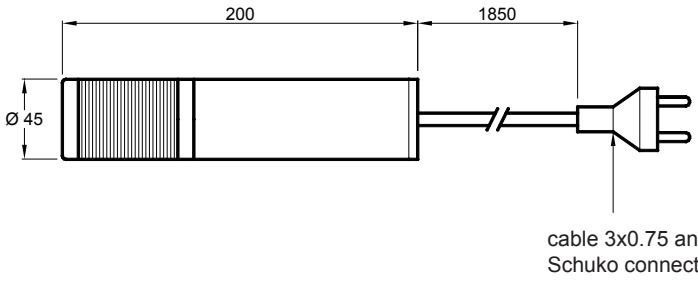
TYPE - ART. NO.

LSA45-635-15-T20-100 - SM311002

TYPE DESCRIPTION

LSA45 = laser pointer Ø 45
635 = wave length 635nm
15 = power 15mW
T20 = life > 20.000 h
100 = line with lens (°)

DIMENSIONS AND TECHNICAL DATA



The brightness of the line depends on the ambient light and on the colour of the object on which the lines are projected.

Lens type	100
Power supply	90-264 Vac - 120-275 Vdc
Permitted temperature	-10...+50°C
Housing material	aluminium
Degree of protection	IP67
Focus regulation	no
Current consumption	~ 100 mA
Point a max. 1 m.(mm) ~	-
Cross a max. 1 m.(mm)	-
Max. line length at 1 m. (mm)	4000
Tollerance of lens for line	+/- 15%
Electrical insulation of the module	yes
Connection	cable 1850 mm - 3x0.75 and Schuko connector
Safety class	2M
For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

LASER POINTER - LSA45 SERIE

Laser pointer made of a high quality red laser diode, guaranteed life > 20.000 h, available in wave length = 650 nm and a power of 30mW. Thanks to the hermetic housing this laser pointer is suitable for harsh applications or ambient with water, as in the marble industry.

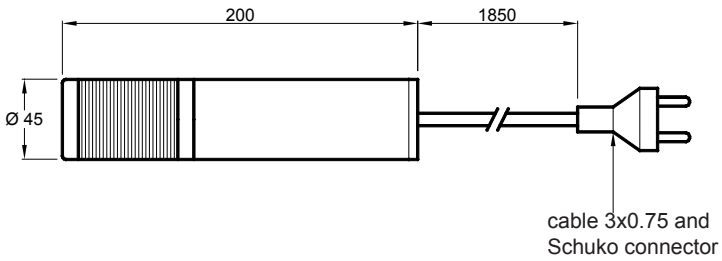
TYPE - ART. NO.

LSA45-650-30-T20-100 - SM309005

TYPE DESCRIPTION

LSA45 = laser pointer Ø 45
650 = wave length 650nm
30 = power 30mW
T20 = life > 20.000 h
100 = line with lens (°)

DIMENSIONS AND TECHNICAL DATA



The brightness of the line depends on the ambient light and on the colour of the object on which the lines are projected.

Lens type	100
Power supply	90-264 Vac - 120-275 Vdc
Permitted temperature	-10...+50°C
Housing material	aluminium
Degree of protection	IP67
Focus regulation	no
Current consumption	~ 100 mA
Point a max. 1 m.(mm) ~	-
Cross a max. 1 m.(mm)	-
Max. line length 1 m. (mm)	4000
Tollerance of lens for line	+/- 15%
Electrical insulation of the module	yes
Connection	cable 1850 mm - 3x0.75 and Schuko connector
Safety class	3R
For the classification of the laser systems: only in perfect conditions and supplied with DC power supply, the system can be specified in the safety class, according to new regulations valid as from 01/01/04.	
Laser according to EN 60825-1, Edition 4 (Laser Safety)	

USER SAFETY PRECAUTIONS - 1/2

1. (*) CLASSIFICATION OF LASER POINTERS
If the laser pointer did not suffer any mechanical, optic, electrical tampering and is supplied with DC power supply, the system can fall in the safety class specified, according to the new regulations valid as from 01/01/2004. Laser According to EN 60825-1, Edition 4 (Laser Safety).

2. PRECAUTIONS FOR THE RIGHT FUNCTION OF THE LASER POINTERS
Please read carefully the following notes before installation.
1) It is very important that the power supply, both standard or switching, is stabilized and filtered, to prevent damages to the laser pointer.
2) The electrostatic charges can affect the life of laser pointers, therefore try to eliminate them.
3) The laser pointers with metal housing mounted where electrostatic charges could be present, must be mounted connecting the metal housing to the ground of the machine.
4) The safety class of the laser pointers provides the regulations for use and precautions.

3. GENERAL SAFETY INSTRUCTIONS
1. These instructions must be read and kept with the laser system.
2. To prevent harm to others, the work area must be marked.
3. As the mirrors can reflect harmful rays, they should not be placed in the work area.
4. In case of malfunction turn the unit off immediately!
5. To avoid interferences, the laser pointers must operate only according to the voltage indicated on the sheet.
6. High temperatures reduce the life of the laser pointer.
7. Observe the protection classes listed in the table.

4. LASER CLASSIFICATION ACCORDING TO IEC 60825-1 (2003-02)
Class 1
This class is eye-safe under all operating conditions.

Class 1M
This class, with wavelengths between 302.5 nm and 4000 nm, is safe for viewing directly with the naked eye, but may be hazardous to view with the aid of optical instruments. In general, the use of magnifying glasses increases the hazard from a widely-diverging beam (eg LEDs and bare laser diodes), and binoculars or telescopes increase the hazard from a wide, collimated beam (such as those used in open-beam telecommunications systems).Radiation in classes 1 and 1M can be visible, invisible or both.

Class 2
These are visible lasers. This class is safe for accidental viewing under all operating conditions. However, it may not be safe for a person who deliberately stares into the laser beam for longer than 0.25 s, by overcoming their natural aversion response to the very bright light.

Class 2M
These are visible lasers with wavelengths between 400 nm and 700 nm. This class is safe for accidental viewing with the naked eye, as long as the natural aversion response is not overcome as with Class 2, but may be hazardous (even for accidental viewing) when viewed with the aid of optical instruments, as with class 1M.
Radiation in classes 2 and 2M is visible, but can also contain an invisible element, subject to certain conditions.
Classes 1M and 2M broadly replace the old class 3A under IEC and EN classification. Prior to the 2001 amendment there were also lasers which were Class 3B but were eye-safe when viewed without optical instruments. These lasers are Class 1M or 2M under the current Classification system.

Class 3R
Radiation in this class is considered low risk, but potentially hazardous. The class limit for 3R is 5x the applicable class limit for Class 1 (for invisible radiation) or class 2 (for visible radiation). Hence CW visible lasers emitting between 1 and 5 mW are normally Class 3R. Visible class 3R is similar to class IIIA in the US regulations.

Class 3B
Radiation in this class is very likely to be dangerous. For a continuous wave laser the maximum output into the eye must not exceed 500mW. The radiation can be a hazard to the eye or skin. However, viewing of the diffuse reflection is safe.

Class 4
This is the highest class of laser radiation. Radiation in this class is very dangerous, and viewing of the diffuse reflection may be dangerous. Class 4 laser beams are capable of setting fire to materials onto which they are projected.

USER SAFETY PRECAUTIONS - 2/2

5. GENERAL PRECAUTIONS

Everyone who uses a laser should be aware of the risks. This awareness is not just a matter of time spent with lasers; to the contrary, long-term dealing with invisible risks (such as from infrared laser beams) tends to reduce risk awareness, rather than to sharpen it.
Optical experiments should be carried out on an optical table with all laser beams travelling in the horizontal plane only, and all beams should be stopped at the edges of the table. Users should never put their eyes at the level of the horizontal plane where the beams are in case of reflected beams that leave the table.
Watches and other jewelry that might enter the optical plane should not be allowed in the laboratory. All non-optical objects that are close to the optical plane should have a matte finish in order to prevent specular reflections.
Adequate eye protection should always be required for everyone in the room if there is a significant risk for eye injury.
High-intensity beams that can cause fire or skin damage (mainly from class 4 and ultraviolet lasers) and that are not frequently modified should be guided through tubes.
Alignment of beams and optical components should be performed at a reduced beam power whenever possible.

6. PERSONAL PROTECTIVE EQUIPMENT

All operators who may be exposed to laser radiation of Class 3 and 4, are obliged to wear the necessary PPE (personal protective equipment), especially the eye protectors. These must be chosen taking into account at least the wavelength, the exposure energy and the comfort (eg. also need to use corrective lenses). Avoids, as far as possible, the use of flat reflective surfaces. Each ocular protector must be equipped with the right information to assure proper use.
In case where the staff is exposed to radiation levels higher than EMP (Exposure Maximum Permitted) the skin must be protected by appropriate protective clothing. Such equipment must be fire proof. Exceptions are possible in the presence of technical and management measures which eliminate any potential exposure that exceeds the maximum permissible exposure (EMP), for example structural characteristics of the equipment, adequate protection of the beam, procedures.

7. CONTENTS FOR THE USER

Required precautions	Class 1	Class 1M	Class 2	Class 2M	Class 3R	Class 3B
Laser safety officier	Not required, but recommended in case of view in the laser beam				Not required for visible beam	Required
Locking device with remote control	Not required					To be connected to room and door circuits
Key switch	Not required					Remove the key if the equipment does not work
Beam reducer	Not required					Avoid unintentional exposure to the beam
Beam indicator	Not required				Specify when the laser works with invisible rays	Specify when the laser works
Warning label	Not required					Follows the indications on the label
Ray way	Not required for class 1 and 2. For class 1M and 2M same precautions as 3R and 3B					The beam must finish at the end of his way
Mirror reflections	Not required for class 1 and 2. For class 1M and 2M same precautions as 3R and 3B				Avoid unintentional reflections	
Eye protection	Not required					Required in case of absence of normal precautions, or by exceeding in the max. permissible radiation
Protective clothing	Not required					
Instructions	Not required				Required for the operating personnel and maintenance	

SM.PROX SRL
Via della Beverara 13/A - 40131 Bologna - Italy
Tel. +39 051 6350755 - Fax +39 051 6353462
www.smprox.it - info@smprox.it