

# Accessories

## Accessories and Spare Parts for Safety Light Curtains

Power Supplies..... page 1  
 Reset Switches..... page 1  
 Shock Mount Kits..... page 1  
 Test Objects..... page 1  
 Laser Alignment Tool..... page 1  
 Mirrors ..... page 2  
 45° Mirror and Bracket ..... page 5  
 Mounting Accessories..... page 5  
 Floor Stands ..... page 6  
 Weld Slag Protective Shields..... page 7  
 IP67 Enclosures..... page 8

### Power Supplies

For use with the safety products such as the F3SJ and the MS4800, CE marked, DIN-rail mountable, Input: 115 or 230 VAC.

Part Number	Description
S8JX-G05024CD	24 VDC power supply, 50 W, 2.1 A
S8JX-G10024CD	24 VDC power supply, 100 W, 4.2 A

### Reset Switches

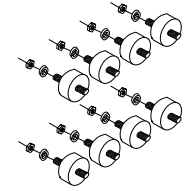
These switches can be mounted remotely and used to perform the reset function on all safety light curtains.

Part Number	Description
RK-1	Key Switch Assembly, Panel Mount
RK-2	Push Button Switch Assembly, Panel Mount



### Shock Mount Kits

These kits are used to isolate light curtain receivers and transmitters from possible sources of vibration. They can also be used to shock-mount controllers/ power supplies and mirrors. Each kit consists of eight mounts.



MS/MSF4800 Series		PA4600 Series	
MS/MSF4800 Lengths 280-960	2	PA46-2-500	3
MS/MSF4800 Lengths 1000-1400	3	PA46-2-600	3
MS/MSF4800 Lengths 1440-2120	4	PA46-3-400	3
		PA46-3-500	4
		PA46-4-300	3
		PA46-5-300	4
		PA46-6-300	4

Part Number	Description
SHMS-18	Shock mounting kit for weight class 2
SHP4-18	Shock mounting kit for weight class 3 and 4

### Test Objects

Replacement test objects can be ordered by part number. Make sure to order the test object for the correct light curtain model.

Part Number	Description
STI-TO20	Test object, 19.1 mm (0.75 in.) for F3SJ-A_P20 and MS4800-20
STI-TO30	Test object, 30 mm (1.18 in.) for F3SJ-A_P30 and MS4800-30
STI-TO14	Test object, 14 mm (0.55 in.) for F3SJ-A_P14 and MS4800-14
STI-TO40	Test object, 40 mm (1.57 in.) for MS4800-40
STI-TO24	Test object, 24 mm (0.94 in.) for F3SJ-A_P14, and MS4800-14 (with floating blanking 1-beam)
STI-TO34	Test object, 34 mm (1.34 in.) for F3SJ-A_P14 and MS4800-14 (with floating blanking 2-beam)

### Laser Alignment Tool

To assist with long-range alignment of installations.

Model Number	Description
46LA	Laser alignment tool for use with PA4600 and MS4800



## Mirrors

The correct mirror is important in maintaining the integrity of a safety light curtain system. Whenever an infrared beam strikes a mirror a certain percentage of the signal will be lost. In order to minimize this loss, glass and stainless steel mirrors from Omron use materials of the highest optical quality.

### Mirror Material

Mirror Material	Percentage of range lost per mirror
Front Reflective Surface Glass	12%
Polished Stainless Steel	18%

Glass mirrors are built with front reflective surface glass. This material provides the minimum possible signal loss. For applications where the possibility of broken glass cannot be tolerated, wide, polished stainless steel mirrors are available.

Mirrors are available in both a narrow and a wide package. If space permits, the wide mirrors are recommended for ease of alignment. Narrow mirrors have 51 mm (2 in.) wide reflective surfaces and can be used on applications where space is limited or the range between the light curtain transmitter and receiver is short. Wide mirrors have 108 mm (4.25 in.) wide reflective surfaces and ease alignment on applications with a large perimeter or where there are no space limitations.

NOTE: Mirrors can only be mounted using the MIRS-xx Series Heavy Duty Floor Stands.

### Net Range Using Mirrors (percentage of maximum range)

Material	No. of Mirrors Used			
	1	2	3	4
Glass	88%	77%	68%	60%
Stainless Steel	82%	67%	55%	45%

Length	Model Number	Weight kg/lb.	Model Number	Weight kg/lb.	Model Number	
	Narrow Glass		Wide Glass		Wide Stainless Steel*	Narrow Stainless Steel*†
102 mm (4 in.)	MIRN-04FG	0.8/1.74	MIRW-04FG	1.0/2.3	MIRW-04SS	MIR-04SS-ESD
152 mm (6 in.)			MIRW-06FG	1.3/2.8	MIRW-06SS	
203 mm (8 in.)	MIRN-08FG	1.0/2.36	MIRW-08FG	1.5/3.3	MIRW-08SS	MIR-08SS-ESD
305 mm (12 in.)	MIRN-12FG	1.4/2.98	MIRW-12FG	1.9/4.2	MIRW-12SS	MIR-12SS-ESD
406 mm (16 in.)	MIRN-16FG	1.6/3.60	MIRW-16FG	2.4/5.2	MIRW-16SS	MIR-16SS-ESD
457 mm (18 in.)			MIRW-18FG	2.5/5.6	MIRW-18SS	
508 mm (20 in.)	MIRN-20FG	1.9/4.22	MIRW-20FG	2.8/6.1	MIRW-20SS	MIR-20SS-ESD
610 mm (24 in.)	MIRN-24FG	2.2/4.84	MIRW-24FG	3.2/7.1	MIRW-24SS	MIR-24SS-ESD
711 mm (28 in.)	MIRN-28FG	2.5/5.46	MIRW-28FG	3.7/8.1	MIRW-28SS	MIR-28SS-ESD
762 mm (30 in.)			MIRW-30FG	3.8/8.5	MIRW-30SS	
813 mm (32 in.)	MIRN-32FG	2.8/6.08	MIRW-32FG	4.0/9.0	MIRW-32SS	MIR-32SS-ESD
913 mm (36 in.)	MIRN-36FG	3.0/6.70	MIRW-36FG	4.5/9.9	MIRW-36SS	MIR-36SS-ESD
1016 mm (40 in.)	MIRN-40FG	3.3/7.32	MIRW-40FG	5.0/10.9	MIRW-40SS	MIR-40SS-ESD
1067 mm (42 in.)			MIRW-42FG	5.2/11.4	MIRW-42SS	
1118 mm (44 in.)	MIRN-44FG	3.6/7.94	MIRW-44FG	5.4/11.9	MIRW-44SS	MIR-44SS-ESD
1219 mm (48 in.)	MIRN-48FG	3.9/8.56	MIRW-48FG	5.9/12.9	MIRW-48SS	MIR-48SS-ESD
1321 mm (52 in.)			MIRW-52FG	5.3/13.8	MIRW-52SS	
1372 mm (54 in.)			MIRW-54FG	6.5/14.3	MIRW-54SS	
1422 mm (56 in.)			MIRW-56FG	6.7/14.8	MIRW-56SS	
1524 mm (60 in.)			MIRW-60FG	7.2/15.8	MIRW-60SS	
1626 mm (64 in.)			MIRW-64FG	7.6/16.8	MIRW-64SS	
1830 mm (72 in.)			MIRW-72FG	8.5/18.6	MIRW-72SS	
2134 mm (84 in.)			MIRW-84FG	9.8/21.5	MIRW-84SS	
2440 mm (96 in.)			MIRW-96FG	11.0/24.3	MIRW-96SS	

\* Consult factory for weights.

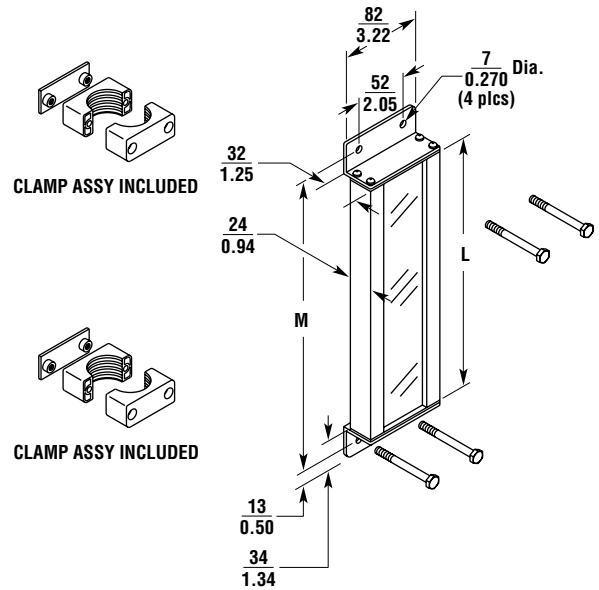
† Use for ESD applications

## Mirrors (continued)

### Narrow Mirror Package (MIRN)

#### Narrow Mirror Dimensions— Front Reflective Surface Glass

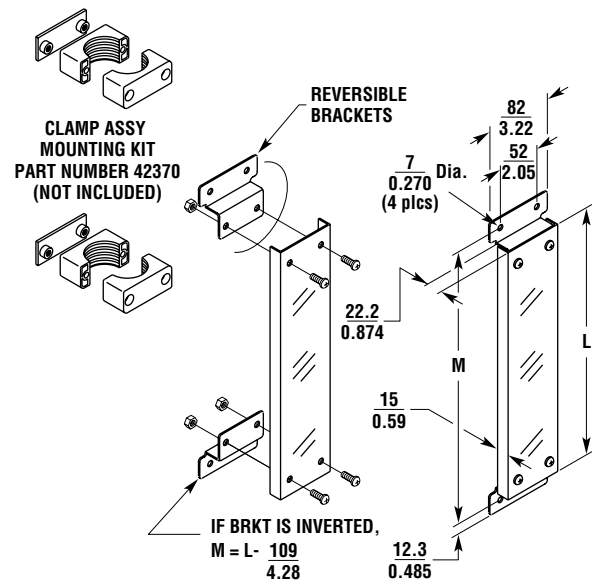
Part Number	Dimension L mm/in.	Dimension M mm/in.
MIRN-04FG	152/6.0	195/7.68
MIRN-08FG	254/10.0	297/11.68
MIRN-12FG	356/14.0	398/15.68
MIRN-16FG	457/18.0	500/19.68
MIRN-20FG	559/22.0	601/23.68
MIRN-24FG	660/26.0	703/27.68
MIRN-28FG	762/30.0	805/31.68
MIRN-32FG	864/34.0	906/35.68
MIRN-36FG	965/38.0	1008/39.68
MIRN-40FG	1067/42.0	1109/43.68
MIRN-44FG	1168/46.0	1211/47.68
MIRN-48FG	1270/50.0	1313/51.68



#### Narrow Mirror Dimensions— Stainless Steel Reflective Surface

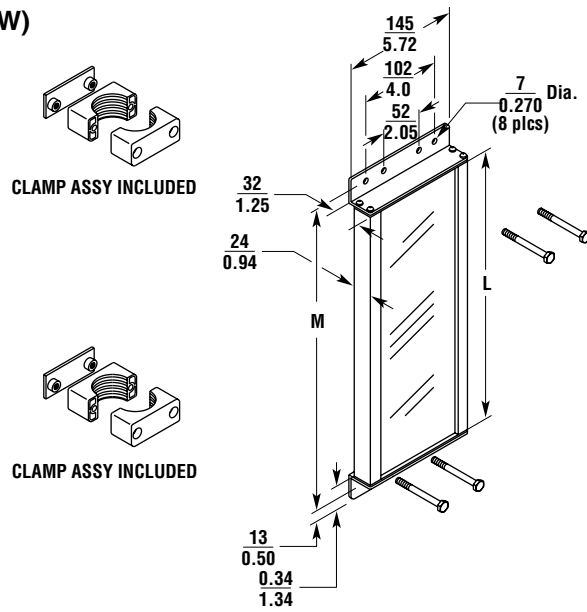
Part Number	Dimension L mm/in.	Dimension M mm/in.
MIR-04SS-ESD	203/8.0	236/9.28
MIR-08SS-ESD	305/12.0	337/13.28
MIR-12SS-ESD	406/16.0	439/17.28
MIR-16SS-ESD	508/20.0	541/21.28
MIR-20SS-ESD	610/24.0	642/25.28
MIR-24SS-ESD	711/28.0	744/29.28
MIR-28SS-ESD	813/32.0	845/33.28
MIR-32SS-ESD	914/36.0	947/37.28
MIR-36SS-ESD	1016/40.0	1049/41.28
MIR-40SS-ESD	1118/44.0	1150/45.28
MIR-44SS-ESD	1219/48.0	1252/49.28
MIR-48SS-ESD	1321/52.0	1353/53.28

Notes: Use for ESD applications.  
Use mounting kit Model Number 42370 to mount to stands.



## Mirrors (continued)

### Wide Mirror Package (MIRW)



#### Wide Mirror Dimensions— Front Reflective Surface Glass

Part Number	Dimension L mm/in.	Dimension M mm/in.
MIRW-04	140/5.5	182/7.18
MIRW-06	191/7.5	233/9.18
MIRW-08	241/9.5	284/11.18
MIRW-12	343/13.5	386/15.18
MIRW-16	445/17.5	487/19.18
MIRW-18	495/19.5	538/21.18
MIRW-20	546/21.5	589/23.18
MIRW-24	648/25.5	690/27.18
MIRW-28	749/29.5	792/31.18
MIRW-30	800/31.5	843/33.18
MIRW-32	851/33.5	894/35.18
MIRW-36	953/37.5	995/39.18
MIRW-40	1054/41.5	1097/43.18
MIRW-42	1105/43.5	1148/45.18
MIRW-44	1156/45.5	1198/47.18
MIRW-48	1257/49.5	1300/51.18
MIRW-52	1359/53.5	1402/55.18
MIRW-54	1410/55.5	1452/57.18
MIRW-56	1461/57.5	1503/59.18
MIRW-60	1562/61.5	1605/63.18
MIRW-64	1664/65.5	1706/67.18
MIRW-72	1867/73.5	1910/75.18
MIRW-84	2172/85.5	2214/87.18
MIRW-96	2477/97.5	2519/99.18

#### Wide Mirror Dimensions— Stainless Steel Reflective Surface

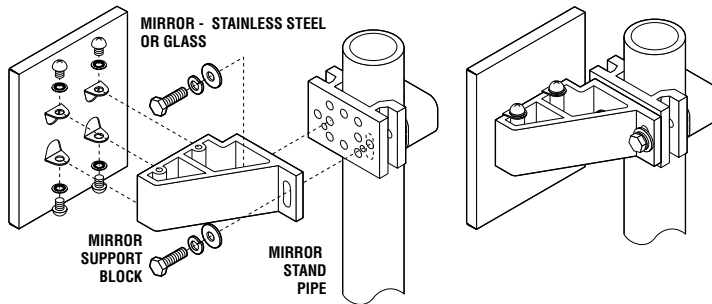
Part Number	Dimension L mm/in.	Dimension M mm/in.
MIRW-04SS	140/5.5	182/7.18
MIRW-06SS	191/7.5	233/9.18
MIRW-08SS	241/9.5	284/11.18
MIRW-12SS	343/13.5	386/15.18
MIRW-16SS	445/17.5	487/19.18
MIRW-18SS	495/19.5	538/21.18
MIRW-20SS	546/21.5	589/23.18
MIRW-24SS	648/25.5	690/27.18
MIRW-28SS	749/29.5	792/31.18
MIRW-30SS	800/31.5	843/33.18
MIRW-32SS	851/33.5	894/35.18
MIRW-36SS	953/37.5	995/39.18
MIRW-40SS	1054/41.5	1097/43.18
MIRW-42SS	1105/43.5	1148/45.18
MIRW-44SS	1156/45.5	1198/47.18
MIRW-48SS	1257/49.5	1300/51.18
MIRW-52SS	1359/53.5	1402/55.18
MIRW-54SS	1410/55.5	1452/57.18
MIRW-56SS	1461/57.5	1503/59.18
MIRW-60SS	1562/61.5	1605/63.18
MIRW-64SS	1664/65.5	1706/67.18
MIRW-72SS	1867/73.5	1910/75.18
MIRW-84SS	2172/85.5	2214/87.18
MIRW-96SS	2477/97.5	2519/99.18

## 45° Mirror and Bracket

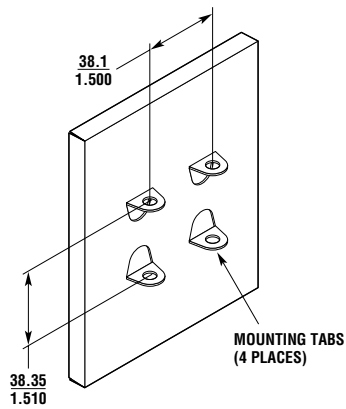
Use with PA4600 applications using a "double-bounce" arrangement.

Part Number	Description
MIR45-FG	4 in. front reflective surface glass mirror for use with MIR45BKT
MIR45-SS	4 in. polished stainless steel mirror for use with MIR45BKT
MIR45BKT	Bracket for mounting MIR45 to stand at 45° angle

### MIR45BKT



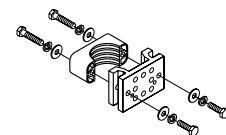
### MIR45-FG and MIR45-SS



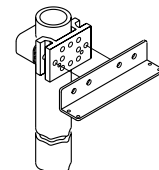
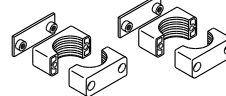
## Mounting Accessories

Model Number	Description
LCMK-4	Allows a transmitter/receiver pair of any model light curtain to be mounted to stands.
MIR-BKT	Mirror mounting brackets, will mount to MIRS stands

### LCMK-4



### MIRROR MOUNTING BRACKETS MODEL MIR-BKT



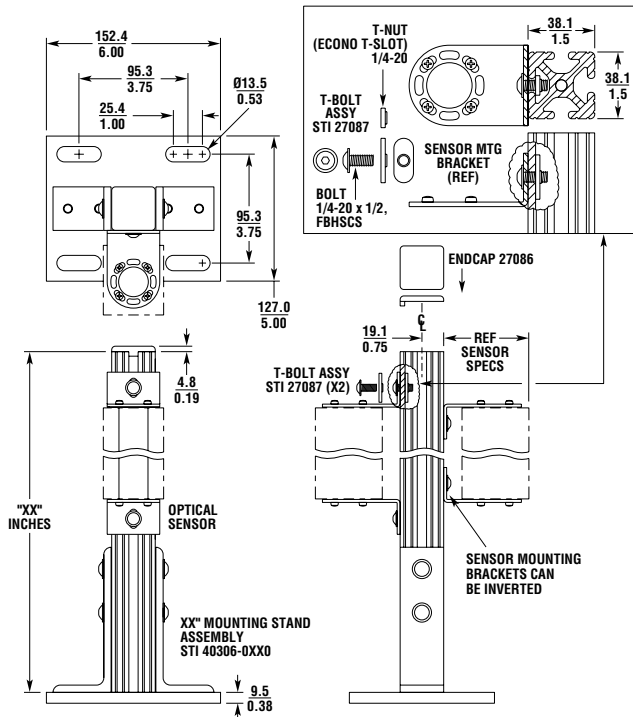
## Floor Stands

### Light Duty Floor Stands

Light curtains and perimeter guards used to detect the torso of personnel have specific mounting requirements per ANSI/RIA R15.06 and other standards. These light duty stands are ideal for mounting the bottom beam of the light curtain or perimeter guard within the required 0.3 m (12 in.) from the floor. The Light Duty Floor Stand is a cost effective alternative to our more robust heavy duty stand, and mounting hardware is included.

NOTE: Mirrors cannot be mounted using the Light Duty Floor Stands. Use the MIRS-xx Series Heavy Duty Floor Stands when mounting mirrors.

Model Number	Description	Height m/in.
PA-STAND-40	Light-Duty Floor Stand	1.0/40
PA-STAND-44	Light-Duty Floor Stand	1.1/44
PA-STAND-48	Light-Duty Floor Stand	1.2/48
PA-STAND-52	Light-Duty Floor Stand	1.3/52
PA-STAND-56	Light-Duty Floor Stand	1.4/56
PA-STAND-64	Light Duty Floor Stand	1.6/64
PA-STAND-72	Light Duty Floor Stand	1.8/72

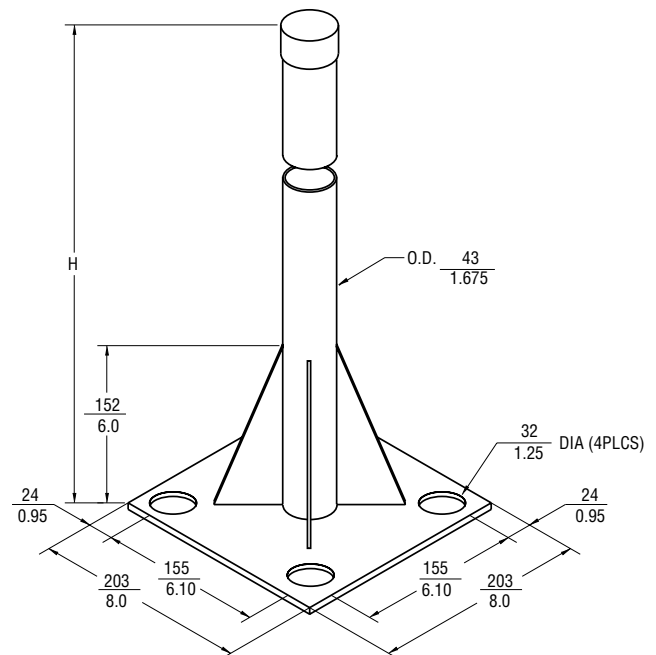


### Heavy Duty Floor Stands

Stands provide a stable, secure method for mounting both safety light curtains and mirrors. Hardware for mounting stand to concrete floor is included.

NOTE: Mirrors can only be mounted using the MIRS-xx Series Heavy Duty Floor Stands.

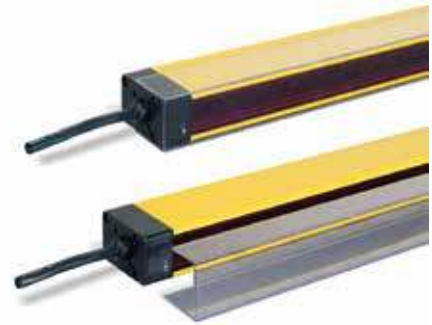
Model Number	Height m/ft.	Weight kg/lb.
MIRS-04	1.2/4	8.8/19.3
MIRS-06	1.8/6	11.2/24.7
MIRS-07	2.1/7	12.5/27.4
MIRS-08	2.4/8	13.7/30.1
MIRS-10	3.1/10	16.1/35.4



## Weld Slag Protective Shields

- Available for the PA4600, F3SJ, and MS4800 families
- Reduces down time and increases the life of the curtain
- Resistant to many chemicals and compounds
- Easy to install and replace
- Lexan® construction

These protective shields are designed to protect the light curtains, when used in harsh applications. In many cases, welding cell applications produce hot weld slag that over time may damage the lens (filter) and degrade the light curtain's performance. These covers offer the user the ability to easily and inexpensively reduce machine down time. The covers are available to fit all sizes.



KEY:  
 R - Resistant  
 LR - Limited Resistance  
 NR - Not Resistant

## Chemical Resistance of Lexan®

Chemical Class		Effects
Acids	R	No significant effect under most typical conditions of concentration and temperature.
Alcohols	LR	Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition.
Alkalis	LR	Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition.
Aliphatic Hydrocarbons	R	Generally compatible.
Amines	NR	Surface crystallization and chemical attack.
Aromatic Hydrocarbons	NR	Partial solvents and severe stress cracking agents (i.e. xylene, toluene).
Detergents and Cleaners	LR	Mild soap solutions are generally compatible.
Detergents and Cleaners, with Alkaline Materials	NR	
Esters	NR	Cause severe crystallization. Partial solvents.
Greases and Oils	LR	Pure petroleum types generally compatible.
Halogenated Hydrocarbons	NR	Solvents.
Ketones	NR	Cause severe crystallization and stress cracking. Partial solvents.
Silicone Oil and Greases	LR	Generally compatible up to 85°C (185°F).
Silicone Oil and Greases, with Alkaline Materials	NR	

Notes:

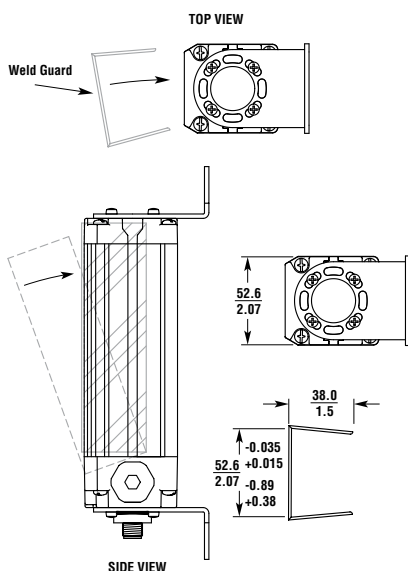
Lexan® is a registered trademark of G.E. General Electric Corp.

Certain combinations of chemical environments, temperature and stress can adversely affect thermoplastic parts made from LEXAN resin. For this reason, lubricants, gaskets, O-rings, cleaning solvents, or any other material which may come in contact with the finished part must be carefully evaluated under end-use conditions for compatibility. You should also follow the use and compatibility recommendations of the manufacturer of any such material.

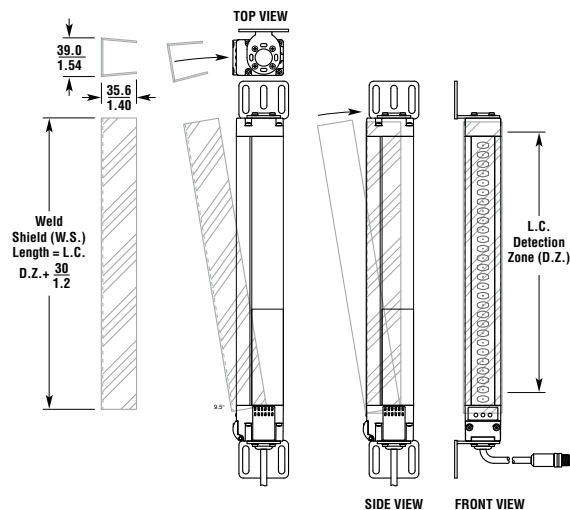
LEXAN resin generally is stable to water, mineral acids and organic acids. Cracking and/or embrittlement may occur if a part molded from LEXAN resin is highly stressed and exposed to hot water or a moist high-temperature environment. As a result, a temperature limit of 60 to 71°C (140 to 160°F) is recommended under these conditions.

## Dimensions—mm/in.

PA4600 Perimeter Access Guarding Device



MS4800 Light Curtain (L.C.)





## Weld Slag Protective Shields (continued)

Model Number	Description	mm/in.
Lexan Weld Shield Kit for PA4600		
PA4600WS-1	PA4600-1-000 weld shield kit (1 pair)	135/5.3
PA4600WS-2	PA4600 weld shield kit (1 pair)	180/7.1
PA4600WS-4	PA4600 weld shield kit (2 pairs)	180/7.1
Lexan Weld Shield Kit for MS4800*		
MS4800WS-0240	240 mm Kit	270/10.63
MS4800WS-0280	280 mm Kit	310/12.21
MS4800WS-0320	360 mm Kit	350/13.78
MS4800WS-0360	360 mm Kit	390/15.35
MS4800WS-0400	400 mm Kit	430/16.93
MS4800WS-0440	440 mm Kit	470/18.50
MS4800WS-0480	480 mm Kit	510/20.08
MS4800WS-0520	520 mm Kit	550/21.65
MS4800WS-0560	560 mm Kit	590/23.23
MS4800WS-0600	600 mm Kit	630/24.80
MS4800WS-0640	640 mm Kit	670/26.38
MS4800WS-0680	680 mm Kit	710/27.95
MS4800WS-0720	720 mm Kit	750/29.53
MS4800WS-0760	760 mm Kit	790/31.10
MS4800WS-0800	800 mm Kit	830/32.68
MS4800WS-0840	840 mm Kit	870/34.25
MS4800WS-0880	880 mm Kit	910/35.83
MS4800WS-0920	920 mm Kit	950/37.40
MS4800WS-0960	960 mm Kit	990/38.98
MS4800WS-1000	1000 mm Kit	1030/40.55
MS4800WS-1040	1040 mm Kit	1070/42.13

Model Number	Description	mm/in.
MS4800WS-1080	1080 mm Kit	1110/43.70
MS4800WS-1120	1120 mm Kit	1150/45.28
MS4800WS-1160	1160 mm Kit	1190/46.85
MS4800WS-1200	1200 mm Kit	1230/48.43
MS4800WS-1240	1240 mm Kit	1270/50.00
MS4800WS-1280	1280 mm Kit	1310/51.57
MS4800WS-1320	1320 mm Kit	1350/53.15
MS4800WS-1360	1360 mm Kit	1390/54.72
MS4800WS-1400	1400 mm Kit	1430/56.30
MS4800WS-1440	1440 mm Kit	1470/57.87
MS4800WS-1480	1480 mm Kit	1510/59.45
MS4800WS-1520	1520 mm Kit	1550/61.02
MS4800WS-1560	1560 mm Kit	1590/62.60
MS4800WS-1600	1600 mm Kit	1630/64.17
MS4800WS-1640	1640 mm Kit	1670/65.75
MS4800WS-1680	1680 mm Kit	1710/67.32
MS4800WS-1720	1720 mm Kit	1750/68.90
MS4800WS-1760	1760 mm Kit	1790/70.47
MS4800WS-1800	1800 mm Kit	1830/72.05
MS4800WS-1840	1840 mm Kit	1870/73.62
MS4800WS-1880	1880 mm Kit	1910/75.20
MS4800WS-1920	1920 mm Kit	1950/76.77
MS4800WS-1960	1960 mm Kit	1990/78.35
MS4800WS-2000	2000 mm Kit	2030/79.92
MS4800WS-2040	2040 mm Kit	2070/81.50
MS4800WS-2080	2080 mm Kit	2110/83.07
MS4800WS-2120	2120 mm Kit	2150/84.65

\*MS4800 weld shield kits consists of one pair.

## IP67 Enclosures for Mounting Safety Light Curtains in Wash-down Applications

- Available in the full range of sizes
- Reduces down time and increases the life of the light curtain
- Resistant to many chemicals and compounds (see tables on subsequent pages)
- Improved mounting system
- Reinforced stainless steel brackets

The IP67 Enclosure is designed for washdown applications. The enclosure is constructed with an acrylic tube. The brackets are made of stainless steel. The radial seal prevents fluids from coming in contact with the safety light curtain.

Operating characteristics of the light curtain are affected by the enclosure. The range is reduced by 10% and the effective aperture angle changes to less than  $\pm 3^\circ$ .

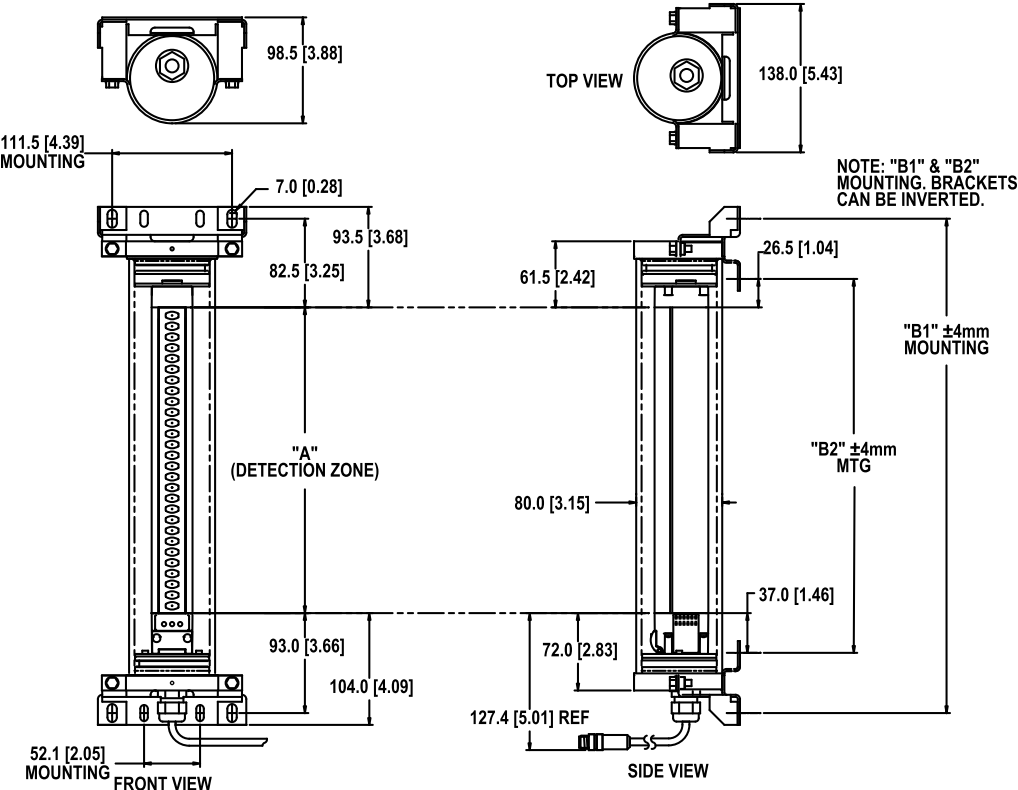




IP67 Enclosures (continued)

Dimensions—mm/in.

MS4800 IP67 Enclosure



IP67 Enclosures for MS4800 (non-cascaded versions)

Model Number	
MS4800-IP67-0240	Kit for MS4800 240 mm
MS4800-IP67-0280	Kit for MS4800 280 mm
MS4800-IP67-0320	Kit for MS4800 320 mm
MS4800-IP67-0360	Kit for MS4800 360 mm
MS4800-IP67-0400	Kit for MS4800 400 mm
MS4800-IP67-0440	Kit for MS4800 440 mm
MS4800-IP67-0480	Kit for MS4800 480 mm
MS4800-IP67-0520	Kit for MS4800 520 mm
MS4800-IP67-0560	Kit for MS4800 560 mm
MS4800-IP67-0600	Kit for MS4800 600 mm
MS4800-IP67-0640	Kit for MS4800 640 mm
MS4800-IP67-0680	Kit for MS4800 680 mm
MS4800-IP67-0720	Kit for MS4800 720 mm
MS4800-IP67-0760	Kit for MS4800 760 mm
MS4800-IP67-0800	Kit for MS4800 800 mm
MS4800-IP67-0840	Kit for MS4800 840 mm

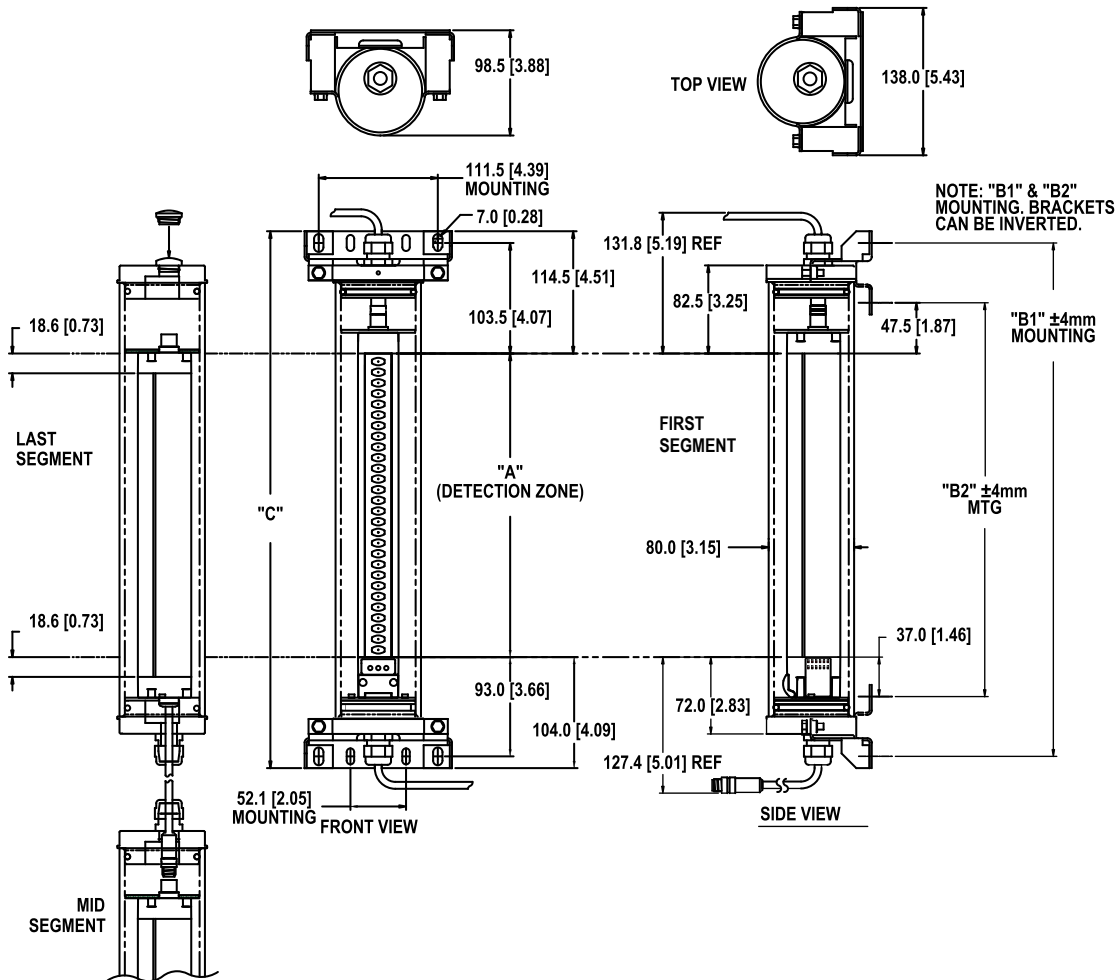
Model Number	
MS4800-IP67-0880	Kit for MS4800 880 mm
MS4800-IP67-0920	Kit for MS4800 920 mm
MS4800-IP67-0960	Kit for MS4800 960 mm
MS4800-IP67-1000	Kit for MS4800 1000 mm
MS4800-IP67-1040	Kit for MS4800 1040 mm
MS4800-IP67-1080	Kit for MS4800 1080 mm
MS4800-IP67-1120	Kit for MS4800 1120 mm
MS4800-IP67-1160	Kit for MS4800 1160 mm
MS4800-IP67-1200	Kit for MS4800 1200 mm
MS4800-IP67-1240	Kit for MS4800 1240 mm
MS4800-IP67-1280	Kit for MS4800 1280 mm
MS4800-IP67-1320	Kit for MS4800 1320 mm
MS4800-IP67-1360	Kit for MS4800 1360 mm
MS4800-IP67-1400	Kit for MS4800 1400 mm
MS4800-IP67-1440	Kit for MS4800 1440 mm
MS4800-IP67-1480	Kit for MS4800 1480 mm

Model Number	
MS4800-IP67-1520	Kit for MS4800 1520 mm
MS4800-IP67-1560	Kit for MS4800 1560 mm
MS4800-IP67-1600	Kit for MS4800 1600 mm
MS4800-IP67-1640	Kit for MS4800 1640 mm
MS4800-IP67-1680	Kit for MS4800 1680 mm
MS4800-IP67-1720	Kit for MS4800 1720 mm
MS4800-IP67-1760	Kit for MS4800 1760 mm
MS4800-IP67-1800	Kit for MS4800 1800 mm
MS4800-IP67-1840	Kit for MS4800 1840 mm
MS4800-IP67-1880	Kit for MS4800 1880 mm
MS4800-IP67-1920	Kit for MS4800 1920 mm
MS4800-IP67-1960	Kit for MS4800 1960 mm
MS4800-IP67-2000	Kit for MS4800 2000 mm
MS4800-IP67-2040	Kit for MS4800 2040 mm
MS4800-IP67-2080	Kit for MS4800 2080 mm
MS4800-IP67-2120	Kit for MS4800 2120 mm

## IP67 Enclosures (continued)

### Dimensions—mm/in.

#### MSF4800 IP67 Enclosure



#### IP67 Enclosures for MSF4800 (cascaded versions)

Model Number	
MSF4800-IP67-0240	Kit for MSF4800 240 mm
MSF4800-IP67-0280	Kit for MSF4800 280 mm
MSF4800-IP67-0320	Kit for MSF4800 320 mm
MSF4800-IP67-0360	Kit for MSF4800 360 mm
MSF4800-IP67-0400	Kit for MSF4800 400 mm
MSF4800-IP67-0440	Kit for MSF4800 440 mm
MSF4800-IP67-0480	Kit for MSF4800 480 mm
MSF4800-IP67-0520	Kit for MSF4800 520 mm
MSF4800-IP67-0560	Kit for MSF4800 560 mm
MSF4800-IP67-0600	Kit for MSF4800 600 mm
MSF4800-IP67-0640	Kit for MSF4800 640 mm
MSF4800-IP67-0680	Kit for MSF4800 680 mm
MSF4800-IP67-0720	Kit for MSF4800 720 mm
MSF4800-IP67-0760	Kit for MSF4800 760 mm
MSF4800-IP67-0800	Kit for MSF4800 800 mm
MSF4800-IP67-0840	Kit for MSF4800 840 mm

Model Number	
MSF4800-IP67-0880	Kit for MSF4800 880 mm
MSF4800-IP67-0920	Kit for MSF4800 920 mm
MSF4800-IP67-0960	Kit for MSF4800 960 mm
MSF4800-IP67-1000	Kit for MSF4800 1000 mm
MSF4800-IP67-1040	Kit for MSF4800 1040 mm
MSF4800-IP67-1080	Kit for MSF4800 1080 mm
MSF4800-IP67-1120	Kit for MSF4800 1120 mm
MSF4800-IP67-1160	Kit for MSF4800 1160 mm
MSF4800-IP67-1200	Kit for MSF4800 1200 mm
MSF4800-IP67-1240	Kit for MSF4800 1240 mm
MSF4800-IP67-1280	Kit for MSF4800 1280 mm
MSF4800-IP67-1320	Kit for MSF4800 1320 mm
MSF4800-IP67-1360	Kit for MSF4800 1360 mm
MSF4800-IP67-1400	Kit for MSF4800 1400 mm
MSF4800-IP67-1440	Kit for MSF4800 1440 mm
MSF4800-IP67-1480	Kit for MSF4800 1480 mm

Model Number	
MSF4800-IP67-1520	Kit for MSF4800 1520 mm
MSF4800-IP67-1560	Kit for MSF4800 1560 mm
MSF4800-IP67-1600	Kit for MSF4800 1600 mm
MSF4800-IP67-1640	Kit for MSF4800 1640 mm
MSF4800-IP67-1680	Kit for MSF4800 1680 mm
MSF4800-IP67-1720	Kit for MSF4800 1720 mm
MSF4800-IP67-1760	Kit for MSF4800 1760 mm
MSF4800-IP67-1800	Kit for MSF4800 1800 mm
MSF4800-IP67-1840	Kit for MSF4800 1840 mm
MSF4800-IP67-1880	Kit for MSF4800 1880 mm
MSF4800-IP67-1920	Kit for MSF4800 1920 mm
MSF4800-IP67-1960	Kit for MSF4800 1960 mm
MSF4800-IP67-2000	Kit for MSF4800 2000 mm
MSF4800-IP67-2040	Kit for MSF4800 2040 mm
MSF4800-IP67-2080	Kit for MSF4800 2080 mm
MSF4800-IP67-2120	Kit for MSF4800 2120 mm

## IP67 Enclosures (continued)

### Chemical Resistance of Acrylic Tube

KEY:

R - Resistant

LR - Limited Resistance

NR - Not Resistant

PAINT	
Acrylic paints and lacquers	LR
Aromatic-free hydrocarbons	R
Nitrocellulose	NR
Oil paints, pure	R
Thinners, general	NR
CHEMICAL PROCESS BATHS	
Electroplating baths	R
Photographic baths	R
BUILDING MATERIALS AND PROTECTIVE AGENTS FOR BUILDINGS	
Bituminous emulsion	NR
Cement	R
Hot bitumen	LR
Mortar	R
Plaster of paris	R
Red lead	R
CHEMICALS, SOLVENTS, ETC.	
Acetic acid, glacial	NR
Acetic acid, to 25%	LR
Acetone	NR
Alum	R
Aluminium chloride	R
Aluminium oxalate	R
Aluminium sulphate	R
Ammonia, aqueous solution	R
Ammonium sulphate	R
Amyl acetate	NR
Aniline	NR
Arsenic	R
Arsenic acid	R
Battery acid	R
Benzaldehyde	NR
Benzene	NR
Bromine	NR
Butanol	LR
Butyl lactate	NR
Butyric acid, to 5%	R
Calcium chloride	R
Calcium hypochlorite	R
Carbon disulfide	NR
Carbon tetrachloride	NR
Chlorinated hydrocarbons	NR
Chlorine, liquid	NR
Chlorine, water	LR
Chloroethyl acetate	NR
Chlorophenol	NR
Chromic acid	LR
Citric acid, to 20%	R
Copper sulphate	R
Cresol	NR
Cyclohexane	R
Diacetone alcohol	NR
Diamyl phthalate	LR
Dibutyl phthalate	NR
Diethylene glycol	R
Dioxan	NR

Ether	NR
Ethyl acetate	NR
Ethyl alcohol, absolute	NR
Ethyl alcohol, to 30%	LR
Ethyl bromide	NR
Ethyl butyrate	NR
Ethylene bromide	NR
Ferric chloride	R
Ferrous chloride	R
Ferrous sulphate	R
Formic acid, to 2%	R
Formic acid, to 40%	LR
Glycerol	R
Glycol	R
Heptane	R
Hexane	R
Hydrochloric acid	R
Hydrogen peroxide, over 40%	LR
Hydrogen peroxide, to 40%	R
Iodine	R
Isopropyl alcohol, to 50%	LR
Lactic acid, to 80%	LR
Magnesium chloride	R
Magnesium sulphate	R
Manganese sulphate	R
Mercury	R
Methanol, absolute	NR
Methanol, to 30%	LR
Methyl ethyl ketone	NR
Methylated spirits	NR
Milk of lime	R
Monobromonaphthalene	R
Motor fuel benzene-free	R
Motor fuel, with benzene	NR
Nickel sulphate	R
Nitric acid, to 20%	R
Nitric acid, 20 - 70%	LR
Nitric acid, over 70%	NR
Oxalic acid	R
Paraffin	LR
Perchloroethylene	NR
Petroleum ether	R
Phenols	NR
Phosphoric acid, to 10%	R
Phosphorus trichloride	NR
Phosphorus, yellow	NR
Picric acid, 1% in water	R
Potassium bichromate	R
Potassium carbonate	R
Potassium chloride	R
Potassium cyanide	R
Potassium hydroxide	R
Potassium nitrate	R
Potassium permanganate	R
Silicon tetrachloride	NR
Silver nitrate	R
Soap solution	R
Soda	R
Sodium bisulfite	R
Sodium carbonate	R
Sodium chlorate	R
Sodium chloride	R
Sodium hydroxide	R
Sodium hypochlorite	R
Sodium sulphate	R
Sodium sulphide	R

Stearic acid	R
Sulphur	R
Sulphur dioxide, liquid	NR
Sulfuric acid, to 30%	R
Sulphurous acid, conc	LR
Sulphurous acid, to 5%	R
Sulfuryl chloride	R
Tartaric acid, to 50%	R
Thionyl chloride	NR
Tin chloride	R
Toluene	NR
Triethylamine	R
Trichloroacetic acid	NR
Tricresyl phosphate	R
Turpentine	LR
Turpentine substitute	LR
Urea, to 20%	R
Xylene	NR
Zinc sulphate, aqueous	R
Zinc sulphate, solid	R
DISINFECTANTS	
Bleaching powder	R
Carbolic acid	NR
Hydrogen peroxide, to 40%	R
Hydrogen peroxide, over 40%	LR
Iodine tincture, 5%	NR
Lugol solution	R
Mercuric chloride	R
Surgical spirit	NR
GREASES, OILS, WAXES	
Animal	R
Mineral	R
Silicone oil	LR
Vegetable	LR
PLASTICS	
Foams	R
Foams, containing plasticizer	NR
Polyamide	R
Polyethylene	R
PVC	R
PVC, plasticized	NR
Rubber	R
Rubber, containing plasticizer	NR
FOODSTUFFS, SPICES	
Aniseed, bay, nutmeg	R
Cloves	NR
Honey, pure	R
Ice cream	R
Marinades	R
Meat and fish	R
Pepper, cinnamon, onions	R
Salt	R
GASES AND VAPORS	
Ammonia	R
Bromine vapor (dry)	LR
Carbon dioxide	R
Carbon monoxide	R
Chloride vapor (dry)	LR
Exhaust gases, containing HCl	R
Exhaust gases, containing HF	R
Exhaust gases, containing Sulfuric acid	R
Hydrogen sulphide	R
Methane	R
Nitric oxide	R

Nitrogen peroxide	R
Oxygen	R
Ozone	R
Sulphur dioxide (dry)	R
Natural Gas (Butane)	R
FREON TG* trichlorotrifluoroethane	NR
FREON TF* trichlorotrifluoroethane	R
BEVERAGES, etc.	
Beer, wine	R
Camomile extract	R
Chocolate	R
Fruit juice, milk, coffee	R
Spirits, to 30%	R
Vinegar	R
Water, mineral waters	R
Glycerol	R
Hair setting lotion	R
Nail varnish	NR
Nail varnish remover	NR
Ointments	R
Peat water	R
Sea water	R
Soaps	R
Sprays	LR
CLEANING AGENTS	
Acids, see under chemicals	
Alcohol, absolute	NR
Alcohol, to 30%	R
Alkalis, see under chemicals	
Ammonia	R
Aqueous hypochlorite solution	R
Carbon tetrachloride	NR
Methylated spirits	NR
Paraffin	LR
Perchloroethylene	NR
Petrol, pure	R
Petrol mixture, containing benzene	NR
Petroleum ether	R
Soap solution	R
Soda solution	R
Solvent stain removers	NR
Trichloroethylene	NR
Turpentine	LR
Turpentine substitute	LR
PEST CONTROL AGENTS	
Aqueous solutions of pesticides	LR
Stable spray-new	R
Sprays (for direct spraying)	LR
PROTECTIVE (strippable)	
COATINGS	
Sign Strip®** strippable masking	LR
MISCELLANEOUS	
Urine	R

\* Trademark of E.I. duPont deNemours & Company, Inc.

\*\* Trademark of Spraylat Corp., Mt. Vernon, NY

# Terms and Conditions of Sale

1. **Offer; Acceptance.** These terms and conditions (these "**Terms**") are deemed part of all quotes, agreements, purchase orders, acknowledgments, price lists, catalogs, manuals, brochures and other documents, whether electronic or in writing, relating to the sale of products or services (collectively, the "**Products**") by Omron Electronics LLC and its subsidiary companies ("**Omron**"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
2. **Prices; Payment Terms.** All prices stated are current, subject to change without notice by Omron. Omron reserves the right to increase or decrease prices on any unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice.
3. **Discounts.** Cash discounts, if any, will apply only on the net amount of invoices sent to Buyer after deducting transportation charges, taxes and duties, and will be allowed only if (i) the invoice is paid according to Omron's payment terms and (ii) Buyer has no past due amounts.
4. **Interest.** Omron, at its option, may charge Buyer 1-1/2% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.
5. **Orders.** Omron will accept no order less than \$200 net billing.
6. **Governmental Approvals.** Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Products.
7. **Taxes.** All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Omron or required to be collected directly or indirectly by Omron for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Omron.
8. **Financial.** If the financial position of Buyer at any time becomes unsatisfactory to Omron, Omron reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Omron may (without liability and in addition to other remedies) cancel any unshipped portion of Products sold hereunder and stop any Products in transit until Buyer pays all amounts, including amounts payable hereunder, whether or not then due, which are owing to it by Buyer. Buyer shall in any event remain liable for all unpaid accounts.
9. **Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.
10. **Force Majeure.** Omron shall not be liable for any delay or failure in delivery resulting from causes beyond its control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delay in or lack of transportation or the requirements of any government authority.
11. **Shipping; Delivery.** Unless otherwise expressly agreed in writing by Omron:
  - a. Shipments shall be by a carrier selected by Omron; Omron will not drop ship except in "break down" situations.
  - b. Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer;
  - c. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Omron), at which point title and risk of loss shall pass from Omron to Buyer; provided that Omron shall retain a security interest in the Products until the full purchase price is paid;
  - d. Delivery and shipping dates are estimates only; and
  - e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
12. **Claims.** Any claim by Buyer against Omron for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Omron within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.
13. **Warranties.** (a) **Exclusive Warranty.** Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied. (b) **Limitations.** OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) **Buyer Remedy.** Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty. See <http://www.omron247.com> or contact your Omron representative for published information.
14. **Limitation on Liability; Etc.** OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.
15. **Indemnities.** Buyer shall indemnify and hold harmless Omron Companies and their employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, litigation or proceeding (whether or not Omron is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Products. Without limiting the foregoing, Buyer (at its own expense) shall indemnify and hold harmless Omron and defend or settle any action brought against such Companies to the extent based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party.
16. **Property; Confidentiality.** Any intellectual property in the Products is the exclusive property of Omron Companies and Buyer shall not attempt to duplicate it in any way without the written permission of Omron. Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Omron. All information and materials supplied by Omron to Buyer relating to the Products are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
17. **Export Controls.** Buyer shall comply with all applicable laws, regulations and licenses regarding (i) export of products or information; (ii) sale of products to "forbidden" or other proscribed persons; and (iii) disclosure to non-citizens of regulated technology or information.
18. **Miscellaneous.** (a) **Waiver.** No failure or delay by Omron in exercising any right and no course of dealing between Buyer and Omron shall operate as a waiver of rights by Omron. (b) **Assignment.** Buyer may not assign its rights hereunder without Omron's written consent. (c) **Law.** These Terms are governed by the law of the jurisdiction of the home office of the Omron company from which Buyer is purchasing the Products (without regard to conflict of law principles). (d) **Amendment.** These Terms constitute the entire agreement between Buyer and Omron relating to the Products, and no provision may be changed or waived unless in writing signed by the parties. (e) **Severability.** If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision. (f) **Setoff.** Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice. (g) **Definitions.** As used herein, "including" means "including without limitation"; and "Omron Companies" (or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliate thereof.

## Certain Precautions on Specifications and Use

1. **Suitability of Use.** Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given:
  - (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
  - (ii) Use in consumer products or any use in significant quantities.
  - (iii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
  - (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this Product.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON'S PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
2. **Programmable Products.** Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.
3. **Performance Data.** Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.
4. **Change in Specifications.** Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.
5. **Errors and Omissions.** Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

**OMRON AUTOMATION AND SAFETY • THE AMERICAS HEADQUARTERS** • Hoffman Estates, IL USA • 847.843.7900 • 800.556.6766 • [www.omron247.com](http://www.omron247.com)

**OMRON CANADA, INC. • HEAD OFFICE**

Toronto, ON, Canada • 416.286.6465 • 866.986.6766 • [www.omron247.com](http://www.omron247.com)

**OMRON ELECTRONICS DE MEXICO • HEAD OFFICE**

México DF • 52.55.59.01.43.00 • 01-800-226-6766 • [mela@omron.com](mailto:mela@omron.com)

**OMRON ELECTRONICS DE MEXICO • SALES OFFICE**

Apodaca, N.L. • 52.81.11.56.99.20 • 01-800-226-6766 • [mela@omron.com](mailto:mela@omron.com)

**OMRON ELETRÔNICA DO BRASIL LTDA • HEAD OFFICE**

São Paulo, SP, Brasil • 55.11.2101.6300 • [www.omron.com.br](http://www.omron.com.br)

**OMRON ARGENTINA • SALES OFFICE**

Cono Sur • 54.11.4783.5300

**OMRON CHILE • SALES OFFICE**

Santiago • 56.9.9917.3920

**OTHER OMRON LATIN AMERICA SALES**

54.11.4783.5300

**OMRON EUROPE B.V.** • Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands. • +31 (0) 23 568 13 00 • [www.industrial.omron.eu](http://www.industrial.omron.eu)

*Authorized Distributor:*

**Automation Control Systems**

- Machine Automation Controllers (MAC) • Programmable Controllers (PLC)
- Operator interfaces (HMI) • Distributed I/O • Software

**Drives & Motion Controls**

- Servo & AC Drives • Motion Controllers & Encoders

**Temperature & Process Controllers**

- Single and Multi-loop Controllers

**Sensors & Vision**

- Proximity Sensors • Photoelectric Sensors • Fiber-Optic Sensors
- Amplified Photomicrosensors • Measurement Sensors
- Ultrasonic Sensors • Vision Sensors

**Industrial Components**

- RFID/Code Readers • Relays • Pushbuttons & Indicators
- Limit and Basic Switches • Timers • Counters • Metering Devices
- Power Supplies

**Safety**

- Laser Scanners • Safety Mats • Edges and Bumpers • Programmable Safety Controllers • Light Curtains • Safety Relays • Safety Interlock Switches