

# GuardShield Washdown Enclosure

Catalog Number 440L-AGSTxxx

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## Description

The GuardShield™ washdown enclosure is designed to provide an environmentally protective enclosure for the standard GuardShield family of safety light curtains, which are applied in washdown applications. These applications are typically found in the food and beverage industry.



These acrylic tubes are sold in pairs and provide protection for GuardShield Type 4 POC and the GuardShield PAC light curtains. The enclosures come with acetal endcaps and stainless steel mounting brackets. Enclosures are offered in protective heights from 320...960 mm (12.6...37.79 in.).

The GuardShield washdown enclosures meet the IP67 requirements per IEC 60529 and 1200 psi washdown.

GuardShield safety light curtains must be properly assembled according to the procedure that is described in this document and mounted in accordance with the requirements that are detailed in publication [440L-IN012](#).

## Optical Properties

The GuardShield safety light curtain is a Type 4 ESPE per IEC 61496 Parts 1 and 2. As such, the GuardShield Type 4 meets the IEC 61496 optical angular divergence emission and reception requirements of  $\pm 2.5^\circ$ . When the GuardShield Type 4 POC and PAC light curtains are assembled into the acrylic tube, the optical emission and reception (EAA) meet the requirements of a Type 2 device, for instance  $\pm 5^\circ$ . The

result is that the infrared light is emitted over a greater angle of divergence, which can increase the possibility of optical reflection of the infrared light off a reflective surface.



**ATTENTION:** If the transmitted infrared light is reflected off of a shiny surface and is, then seen by the receiver, it is possible that an object can penetrate further into the protective field of the GuardShield before being detected.

It is necessary to first properly calculate the required safety distance for the particular application, determine the protective height of the GuardShield, and then calculate the distance (a) from the formula in [Figure 2 - Minimum Distance from Reflecting Surfaces](#). The GuardShield can be required to be mounted at the greater calculated distance from the point of operation hazard based on this reflective distance.

Figure 1 - Distance to Reflective Surface

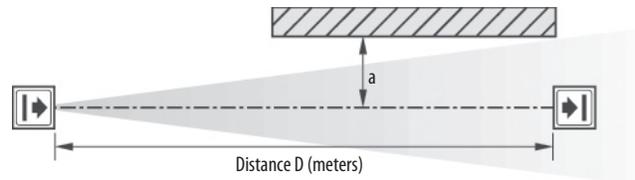
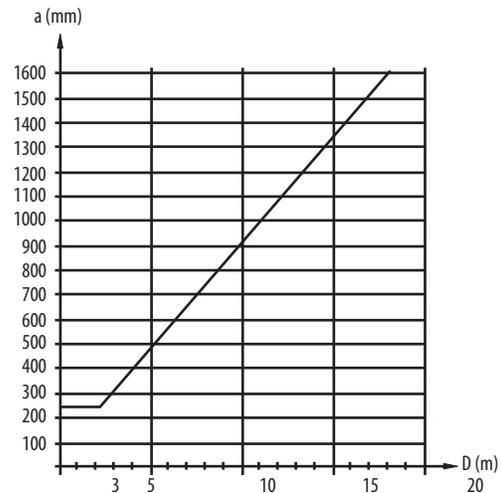


Figure 2 - Minimum Distance from Reflecting Surfaces



**Note:** Formula:  $a = \tan 5.0^\circ \times D$  (mm)

a = Minimum distance to reflective surfaces (mm)

D = Distance between transmitter and receiver (m)

## Assembly Procedure

- Assemble spacer plate to bottom of transmitter and receiver endcaps.
- Attach transmitter and receiver QD cordsets
- Slide leads of cordset through acetal endcaps and grips. Do not tighten grips now.
- Attach acetal endcaps to spacer plates with two socket head screws.
- Gently pull on cordset to remove any slack and then hand tighten grips.
- Press top acetal endcaps into acrylic tubes to confirm that each endcap is properly seated on the top of the acrylic tube.
- Insert light curtain and acetal endcap assembly into the acrylic tube and carefully slide the GuardShield light curtain. Position the assembly so that the top of the GuardShield housing fits into the recessed area in the top acetal endcap.
- Firmly press the bottom acetal endcap into acrylic tube, and confirm that the bottom endcap is seated in the acrylic tube.
- Assemble top and bottom stainless steel brackets to each end of the washdown enclosure.
- Follow the mounting instructions in the publication [440L-IN012](#) to confirm that the proper safety distance has been calculated. And that the location of the GuardShield light curtains in the washdown enclosure meets all safety mounting requirements.

## Cleaning

The GuardShield washdown enclosures are made of acrylic and must be cleaned regularly using a non-abrasive cleaning agent or simply with water and a damp, lint free cloth.

## Replacing the Acrylic Tube

If the acrylic enclosure is damaged mechanically or experiences a reduction of optical properties from cleaning fluids, and so on, it is necessary to remove the GuardShield light curtain from the enclosure, replace the enclosure, and install the GuardShield assembly to the new acrylic enclosure.

There is a specific disassembly process to follow when removing the GuardShield safety light curtain from the washdown enclosure.

- Begin by removing the top acetal endcap from the acrylic enclosure.
- Slide the bottom endcap from the acrylic enclosure.
- Install the top endcap to the new acrylic tube.
- Insert the bottom endcap with GuardShield into the acrylic tube. Position the top of the GuardShield so that it fits into the recessed portion of the top endcap.

## Dimensions [mm (in.)]

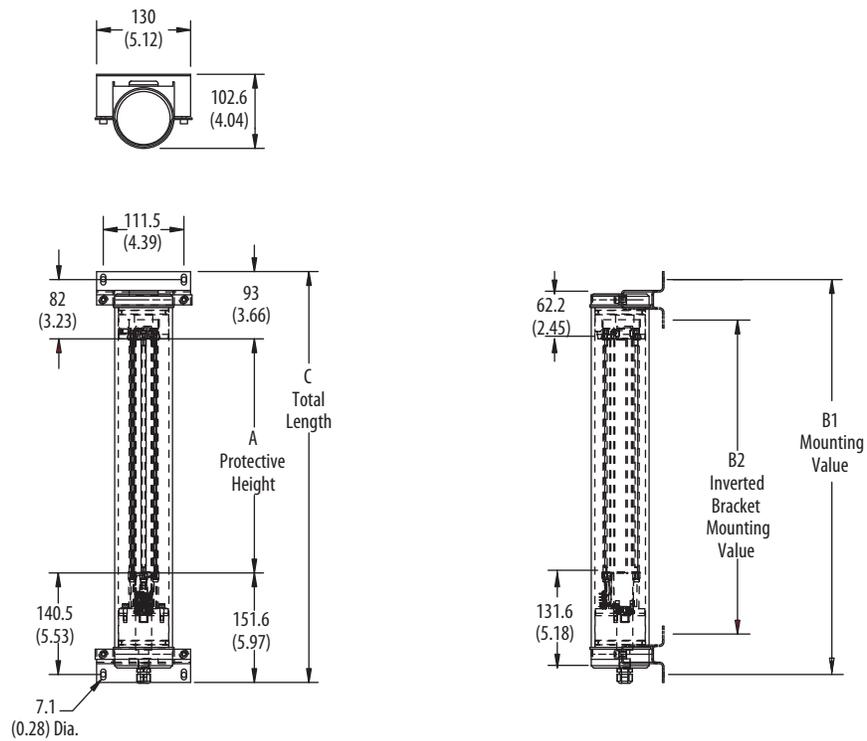


Table 1 - GuardShield Type 4

Cat. No.	Use with Light Curtain Cat. No.	A Protective Height [mm (in.)]	B1 Mounting Value [mm (in.)]	B2 Mounting Value [mm (in.)]	C Total Length [mm (in.)]
440L-AGST320	440L-P4⊗0320YD	320±0.5 (12.6±0.02)	542.58 (21.36)	430.58 (16.95)	564.58 (22.23)
440L-AGST480	440L-P4⊗0480YD	480±0.5 (18.9±0.02)	702.58 (27.66)	590.58 (23.25)	724.58 (28.53)
440L-AGST640	440L-P4⊗0640YD	540±0.5 (21.2±0.02)	862.58 (33.96)	750.58 (29.55)	884.58 (34.83)
440L-AGST800	440L-P4⊗0800YD	800±0.5 (31.5±0.02)	1022.58 (40.26)	910.58 (35.85)	1044.58 (41.13)
440L-AGST960	440L-P4⊗0960YD	960±0.5 (37.8±0.02)	1182.58 (46.56)	1070.58 (42.15)	1204.58 (47.42)

⊗ Replace with J for 14 mm (0.55 in.) or K for 30 mm (1.18 in.).

Table 2 - GuardShield PAC

Cat. No.	Use with Light Curtain Cat. No.	A Protective Height [mm (in.)]	B1 Mounting Value [mm (in.)]	B2 Mounting Value [mm (in.)]	C Total Length [mm (in.)]
440L-AGST960	440L-P4A3400YD	810±0.5 (31.8±0.02)	1182.58 (46.56)	1070.58 (42.15)	1204.58 (47.42)

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<b>Local Technical Support Phone Numbers</b>	Locate the phone number for your country.	<a href="http://www.rockwellautomation.com/global/support/get-support-now.page">http://www.rockwellautomation.com/global/support/get-support-now.page</a>
<b>Direct Dial Codes</b>	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	<a href="http://www.rockwellautomation.com/global/support/direct-dial.page">http://www.rockwellautomation.com/global/support/direct-dial.page</a>
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