

Reliable®

Model XL Quick-Response Institutional Sprinklers

cULus Listed

Features

- Quick response performance
- Institutional applications (correctional and health facility)
- Standard coverage model listed for light and ordinary hazard occupancies
- Extended Coverage models listed for 16' x 16' for light hazard occupancies

Product Description

The Model XL Institutional is a quick-response sprinkler with a fusible solder link thermal element specially designed for use in institutional applications. Standard coverage and extended coverage models are available.

The flush style of this sprinkler conceals all operating parts with the exception of the heat sensing link. When the solder of the sensing link melts, the operating mechanism releases and allows the deflector to be extended for distributing water. These sprinklers are listed for a maximum service pressure of 175 psi (12.0 bar).

The Model XL Institutional has been designed for use in correctional and mental health facilities and in any other type of institution where attempts by an occupant at self-injury might involve the misuse of a fire sprinkler. The heat sensor is designed to release a suspended load that exceeds 50 lbs. when dropped from a 1-inch height. The conical escutcheon assembly is firmly attached to the sprinkler body with tamper resistant fasteners. The horizontal sidewall model uses an escutcheon with an integral deflector shelf.

Note: Misuse of or tampering with Reliable Institutional Sprinklers which leads to property damage or personal injury, including death, as a result of dismantling or modifying this product for use unrelated to the intended use shall not become the responsibility of Reliable Automatic Sprinkler Co., Inc.



Model XL Institutional Pendant Sprinkler



Model XL Institutional Horizontal Sidewall Sprinkler

Model XL Institutional Pendant Sprinkler Summary

Table A

Sprinkler Model	Orientation	Listing or Approval	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
XL Institutional Standard Coverage	Pendent, Flush	cULus	175 (12.0)	R1314
	Horizontal Sidewall, Flush			R1334
XL EC Institutional Extended Coverage	Pendent, Flush	cULus	175 (12.0)	R1344
	Horizontal Sidewall, Flush			R1364

Technical Specifications

Style: Pendent
Threads: 1/2" NPT or ISO7-1 R1/2
Nominal K-Factor: 5.6 (80)
Max. Working Pressure: 175 psi (12.0 bar)

Material Specifications

Body: CDA Alloy
Deflector: Brass
Yoke: DZR Brass
Lever Arms: CDA Alloy
Operating Element: Nickel Alloy
Sealing Washer: Nickel Alloy, PTFE Coated
Can: Plated Steel

Sprinkler Finishes
 (See Table D)

Sensitivity
 Quick Response

Temperature Rating
 165°F (74°C)

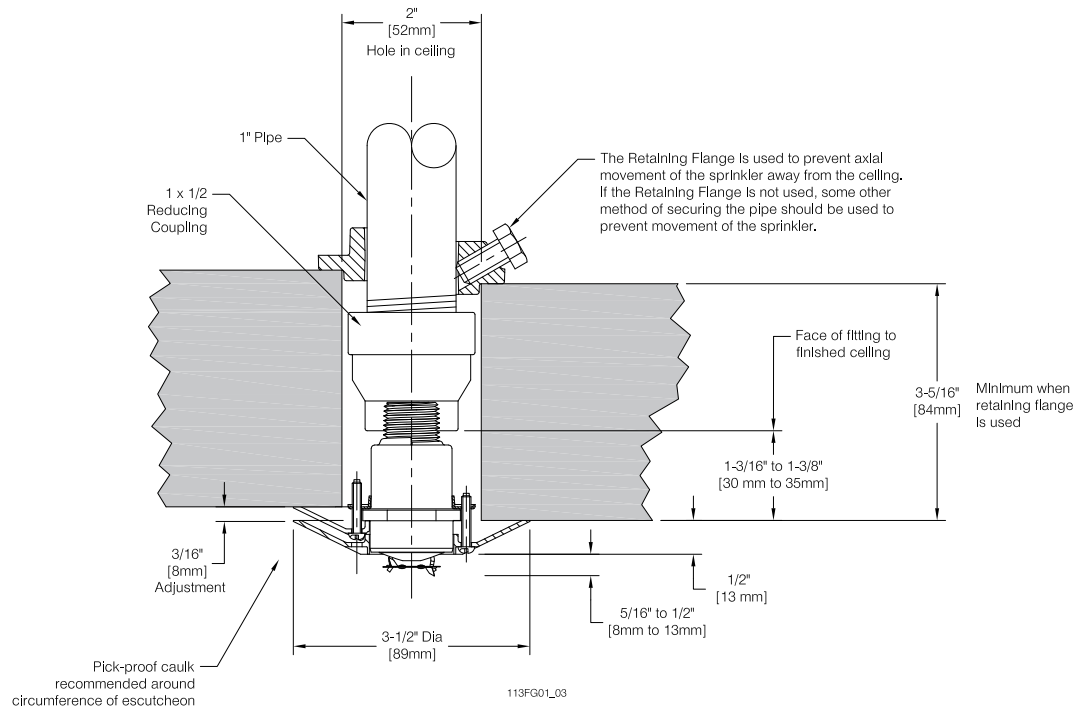
Sprinkler Wrench
 ZX-Pendent Wrench

Listings and Approvals
 cULus (Light & Ordinary Hazard)



Model XL Institutional Pendent Sprinkler Dimensions

Figure 1



Technical Specifications

Style: Horizontal Sidewall
Threads: 1/2" NPT or ISO7-1 R1/2
Nominal K-Factor: 5.6 (80)
Max. Working Pressure: 175 psi (12.0 bar)

Material Specifications

Body: CDA Alloy
Deflector: Brass
Yoke: DZR Brass
Lever Arms: CDA Alloy
Operating Element: Nickel Alloy
Sealing Washer: Nickel Alloy, PTFE Coated
Can: Plated Steel

Sprinkler Finishes

(See Table D)

Sensitivity

Quick Response

Temperature Rating

165°F (74°C)

Sprinkler Wrench

ZX-Horizontal Wrench

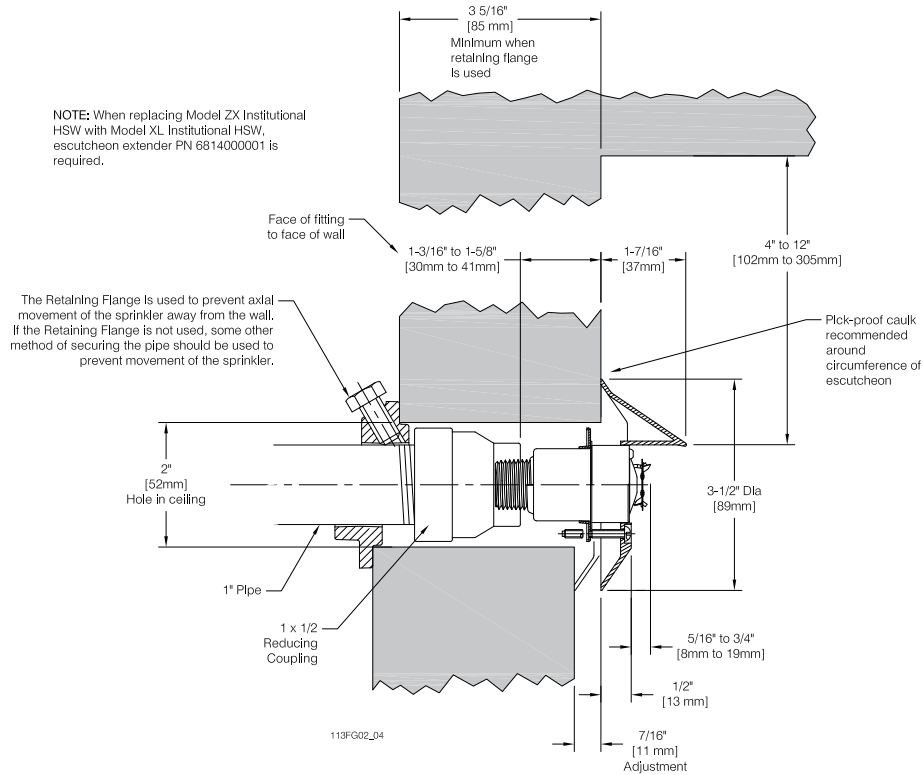
Listings and Approvals

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Model XL Institutional HSW Sprinkler Dimensions

Figure 2



Model XL EC Institutional Pendant Sprinkler

SIN R1344

Technical Specifications

Style: Pendant
Threads: 1/2" NPT or ISO7-1 R1/2
Nominal K-Factor: 5.6 (80)
Max. Working Pressure: 175 psi (12.0 bar)

Material Specifications

Body: CDA Alloy
Deflector: Brass
Yoke: DZR Brass
Lever Arms: CDA Alloy
Operating Element: Nickel Alloy
Sealing Washer: Nickel Alloy, PTFE Coated
Can: Plated Steel

Sprinkler Finishes

(See Table D)

Sensitivity

Quick Response

Temperature Rating

165°F (74°C)

Escutcheons

Conical

Sprinkler Wrench

ZX-Pendant Wrench

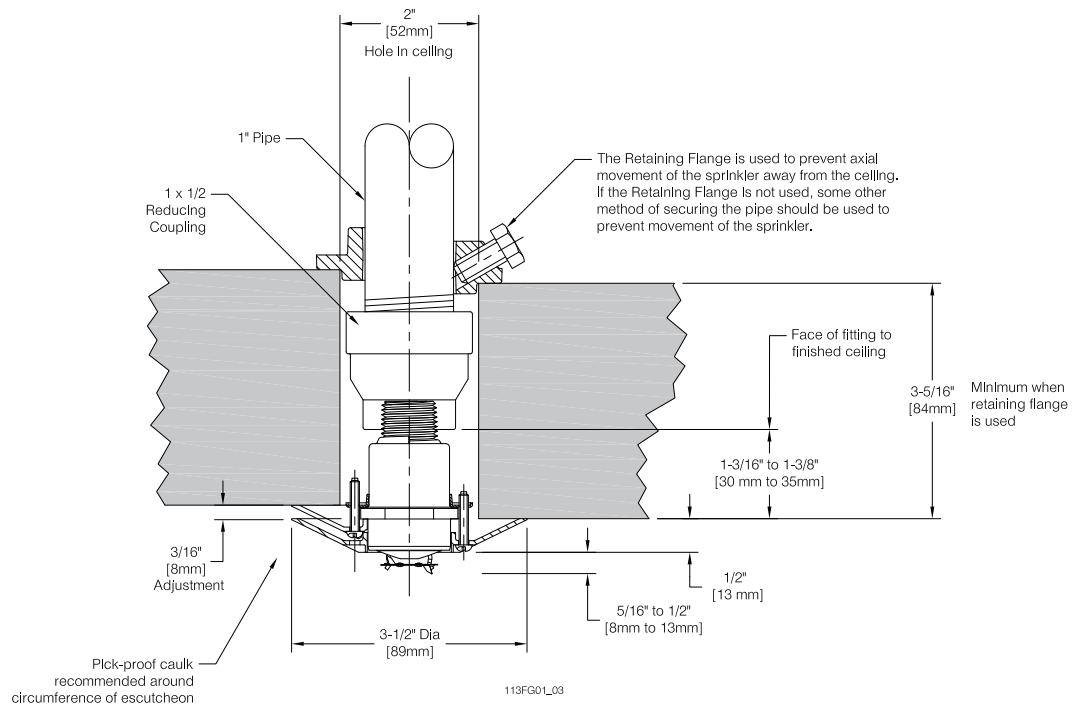
Listings and Approvals

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Model XL EC Institutional Pendant Sprinkler Dimensions

Figure 3



Model XL EC Institutional Pendant Minimum Flow and Residual Pressure

Table B

Max. Coverage Area ft x ft (m x m)	Flow gpm (l/min)	Pressure psi (bar)
16 x 16 (4.9 x 4.9)	26 (98)	21.6 (1.48)

Technical Specifications

Style: Horizontal Sidewall
Threads: 1/2" NPT or ISO7-1 R1/2
Nominal K-Factor: 5.6 (80)
Max. Working Pressure: 175 psi (12.0 bar)

Material Specifications

Body: CDA Alloy
Deflector: Brass
Yoke: DZR Brass
Lever Arms: CDA Alloy
Operating Element: Nickel Alloy
Sealing Washer: Nickel Alloy, PTFE Coated
Can: Plated Steel

Sprinkler Finishes

(See Table D)

Sensitivity

Quick Response

Temperature Rating

165°F (74°C)

Sprinkler Wrench

ZX-Horizontal Wrench

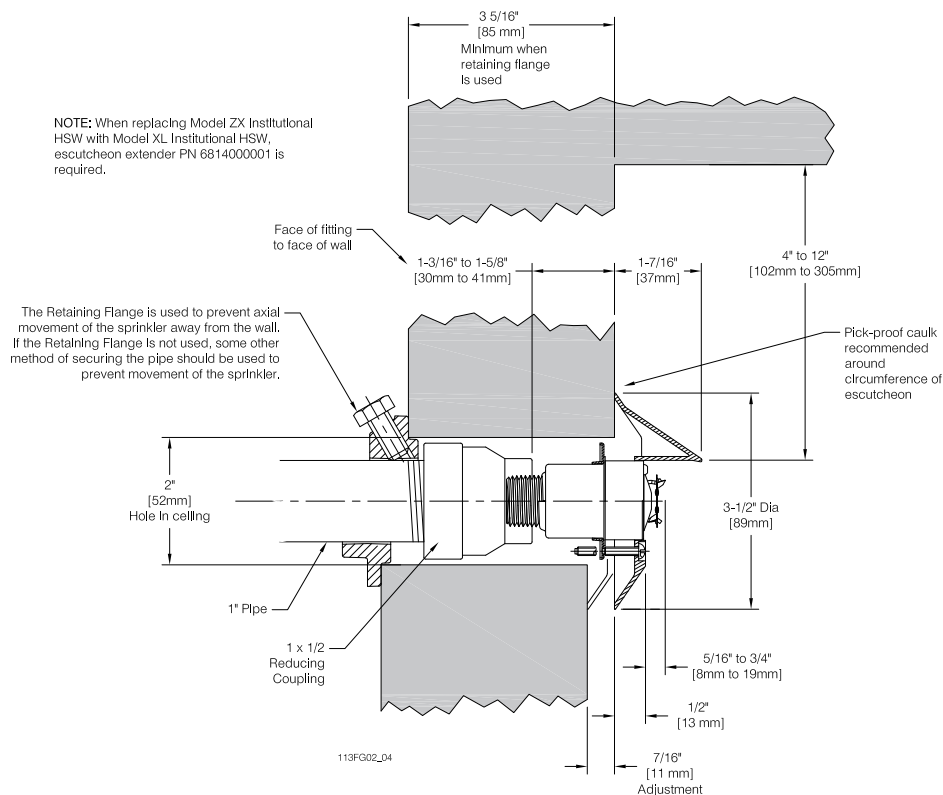
Listings and Approvals

cULus (Light Hazard)



Model XL EC Institutional HSW Sprinkler Dimensions

Figure 4



Model XL EC Institutional Horizontal Sidewall Minimum Flow and Residual Pressure

Table C

Deflector Distance in. (mm)	Max. Coverage Area ft x ft (m x m)	Flow gpm (l/min)	Pressure psi (bar)
4 - 6 (102 - 152)	16 x 16 (4.9 x 4.9)	26 (98)	21.6 (1.48)
>6 - 12 (>152 - 305)	16 x 16 (4.9 x 4.9)	27 (102)	23.2 (1.60)

Finishes

Table D

Sprinkler ⁽¹⁾	Escutcheon ⁽²⁾
Chrome Bright	Satin
	White Paint

Notes:

⁽¹⁾ Fusible link painted black

⁽²⁾ Other finishes and colors available on special order.

Installation

Care must be exercised that orifice size, temperature rating, and sprinkler spacing are in accordance with this bulletin and the latest published standards of the National Fire Protection Association, and approved by the Authority Having Jurisdiction.

Apply a PTFE-based thread sealant or thread sealant tape to the sprinkler threads. Using the Model ZX-Pendent or ZX-Sidewall Wrench (see Figure 5), install the sprinkler into the fitting and verify the sprinkler is properly oriented.

Recommended installation torque is 8-14 lb-ft (11-19 N.m). Do not tighten sprinklers over the maximum recommended torque. Exceeding the maximum recommend torque may cause leakage or impairment of the sprinklers.

Shipping caps should be removed only after walls are finished and when escutcheons are being installed. Each installed sprinkler must include an escutcheon, and only the escutcheons shown in this bulletin shall be used with the Model XL Institutional sprinkler. The use of any other escutcheon will void all approvals and negate all warranties.

It is recommended that a pick-proof caulk be applied around the circumference of each escutcheon to close any gaps with the wall or ceiling.

Provision must be made to prevent any axial movement of each sprinkler away from the ceiling or wall. Reliable provides a retainer flange which is highly recommended for this purpose. Reliable accepts no liability for property damage or personal injury when the retainer assembly is not used or is not installed correctly on institutional sprinklers.

Use care to avoid damaging the sprinklers before, during and after installation. Inspect all installed sprinklers to insure that they have not been damaged. Replace all sprinklers which have any sign of damage.

Note: When replacing Model ZX HSW with Model XL HSW, an escutcheon extender P/N 6814000001 is required.

Wrenches

Figure 5



Maintenance

Reliable Model XL series sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler.

Replace any sprinkler which has been painted (other than factory applied). A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers.

Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify:

Sprinkler

- XL Institutional [Pendent] [Horizontal Sidewall]
- XL EC Institutional [Pendent] [Horizontal Sidewall]

Escutcheon Finish

- See Table D

Sprinkler Wrench

- ZX [Pendent] [Horizontal]

Note: Each escutcheon ships complete with escutcheon retainer ring, tamper proof screws, and retaining flange. Tamper Resistant Screw bit (PN 6880160020) included in box quantity sprinkler order only, otherwise order separately.