

# Reliable®

## Model XL Quick Response Institutional Sprinklers

### Quick Response Institutional Sprinklers Available:

#### Ordinary and Light Hazard Applications

Model XL INST Pendent (SIN R1314)

Model XL INST Horizontal Sidewall (SIN R1334)

#### Light Hazard Applications

Model XL INST Pendent EC (SIN R1344)

Model XL INST Horizontal Sidewall EC (SIN R1364)

### Features

1. Quick response performance
2. Temperature rating: 165 °F (75 °C)
3. Extended coverage Listing for  
16 ft. x 16 ft. (4,9 m x 4,9 m)
4. Standard finishes: bright chrome plated and  
white painted
5. Sensing link releases a suspended load  
exceeding 50 lbs.
6. Available with secure retaining flange

### Listings & Approvals

1. Listed by Underwriters Laboratories, Inc. (UL)
2. Certified for Canada by Underwriters Laboratories (CUL)
3. NYC MEA 258-93-E

**Note:** Approvals are for light hazard occupancies.

### UL Guide Number

VNIV

### UL Listing Category

Sprinklers, Automatic & Open

Quick Response Sprinklers

### U.S. Patent Number 6,554,077

### Product Description

The Model XL INST is a quick response institutional sprinkler. It is a fusible solder link type automatic sprinkler designed for standard and extended coverage applications. These sprinklers have demonstrated response times in laboratory tests which are five to ten times faster than standard response sprinklers.

The quick response enables Model XL INST Sprinklers to apply water to a fire much more quickly than standard response sprinklers of the same temperature rating. Only when the solder link melts does the operating mechanism release from the sprinkler allowing the deflector to be extended for distributing the discharging water.

Modern architectural designs require sprinklers that provide not only the best fire protection, but also an attractive appearance. The Model XL INST meets both criteria. The flush style of this sprinkler provides for an aesthetically pleasing installation by concealing the entire sprinkler's operating parts with the exception of the heat sensing link.



Model XL INST Pendent



Model XL INST Horizontal Sidewall

The Model XL INST 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 use 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.

### Application and Installation

All Model XL INST sprinklers are UL Listed for use with the following types of fire protection systems: wet, dry, deluge or preaction. 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 or the approving Authority Having Jurisdiction.

These sprinklers must be installed with a Reliable Model ZX Sprinkler Wrench. Any other type of wrench may damage the sprinkler which is designed to allow wrenching with the shipping cap installed, thereby providing further protection to the sprinkler. Shipping caps should be removed only after walls are finished and when escutcheons are being installed. When Model XL sprinklers are ordered, escutcheons both with and without retaining flanges are sold separately. The

**The Reliable Automatic Sprinkler Co., Inc.,** 103 Fairview Park Drive, Elmsford, New York 10523

Model XL Institutional Escutcheon is the only escutcheon that can be used with this sprinkler. The back of the Institutional HSW extended coverage escutcheon is marked "INST EC". Only escutcheons marked this way are approved for this sprinkler. The use of any other escutcheon will void all approvals and negate all warranties. Also, each installed sprinkler must include an escutcheon. 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 (see illustrations on page 3).

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. Install them according to Caution Sheet CA-132, and inspect all installed sprinklers to insure that they have not been damaged. Replace all sprinklers which have any sign of damage.

**When replacing Model ZX HSW with Model XL HSW, an escutcheon extender P/N 681400001 is required.**

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 The Reliable Automatic Sprinkler Co., Inc.

**Technical Data:**

Coverage Area - Pendent and Horizontal Sidewall - Standard Coverage		
Refer to minimum flow and pressure requirements as specified in NFPA 13		

Coverage Area - Pendent EC		
Flow Rate <sup>(1)</sup> gpm (Lpm)	Pressure <sup>(1)</sup> psi (bar)	Max. Coverage Area Width x Length ft. (m)
26 (98,4)	21.6 (1,48)	16 x 16 (4,9 x 4,9)

Coverage Area - Horizontal Sidewall EC			
Flow Rate <sup>(1)</sup> gpm (Lpm)	Pressure <sup>(1)</sup> psi (bar)	Max. Coverage Area Width x Length ft. (m)	Deflector to Ceiling Distance Min. - Max. in. (mm)
26 (98,4)	21.6 (1,48)	16 x 16 (4,9 x 4,9)	4 - 6 (100-to-150)
27 (102,2)	23.2 (1,60)	16 x 16 (4,9 x 4,9)	6 - 12 (150-to-300)

<sup>(1)</sup> Minimum flow rate and pressure for any spacing smaller than 16 ft. x 16 ft. (4,9 m x 4,9 m).

**Model XL INST Sprinklers Temperature Data:**

Temperature Rating	Sprinkler Rating		Maximum Ceiling Temp.	
	°F	°C	°F	°C
Ordinary	165	74	100	38

**Installation Data:**

Sprinkler Type Quick Response, ½" NPT Thread	K Factor		Deflector to Ceiling Distance Min. - Max. in. (mm)	Sprinkler Height	Sprinkler Identification Number (SIN)
	US	Metric			
Pendent INST	5.6	80	-----	2 <sup>9</sup> / <sub>16</sub>	R1314
Pendent INST EC	5.6	80	-----	2 <sup>9</sup> / <sub>16</sub>	R1344
HSW INST	5.6	80	4 - 12 (100-to-150)	2 <sup>9</sup> / <sub>16</sub>	R1334
HSW INST EC	5.6	80	4 - 12 (100-to-300)	2 <sup>9</sup> / <sub>16</sub>	R1364

**Finishes:**

Finishes <sup>(1)</sup>	
Sprinkler	Escutcheon
Bright Chrome Plated	Zinc or Aluminum
	White Painted

<sup>(1)</sup> Other finishes and colors available on special order. Consult factory for details.

**Installation Tools**

- Model ZX Sidewall Sprinkler Wrench
  - Model ZX Tamper Resistant Escutcheon Screw Tool
  - Model ZX Pendent Installation wrench
- Note:** When replacing Model ZX HSW with Model XL HSW, an escutcheon extender P/N 681400001 is required.

**Sprinkler Markings**

- RASCO XL INST QR Pend R1314
- RASCO XL INST QR Pend EC R1344
- RASCO XL INST QR HSW R1334
- RASCO XL INST QR HSW EC R1364

**Escutcheon Markings**

- For Model XL INST Horizontal Sidewall :  
- INST XL
- For Model XL INST Horizontal Sidewall EC :  
- INST EC

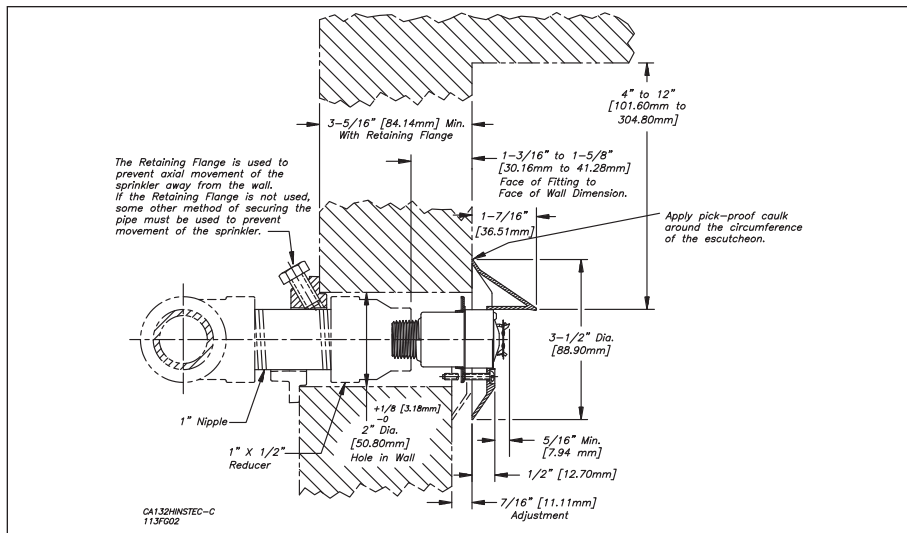
## Maintenance

Model XL INST Sprinklers should be inspected quarterly, and the sprinkler system maintained in accordance with NFPA 25. Do not clean the sprinklers with soap and water, ammonia or other cleaning fluids. Remove any sprinkler which has been painted (other than factory applied) or damaged in any way. To install or remove the tamper resistant escutcheon screws, use the special tool supplied with the escutcheons. A stock of spare sprinklers must be maintained to allow quick replacement of damaged or operated sprinklers, in accordance with NFPA requirements.

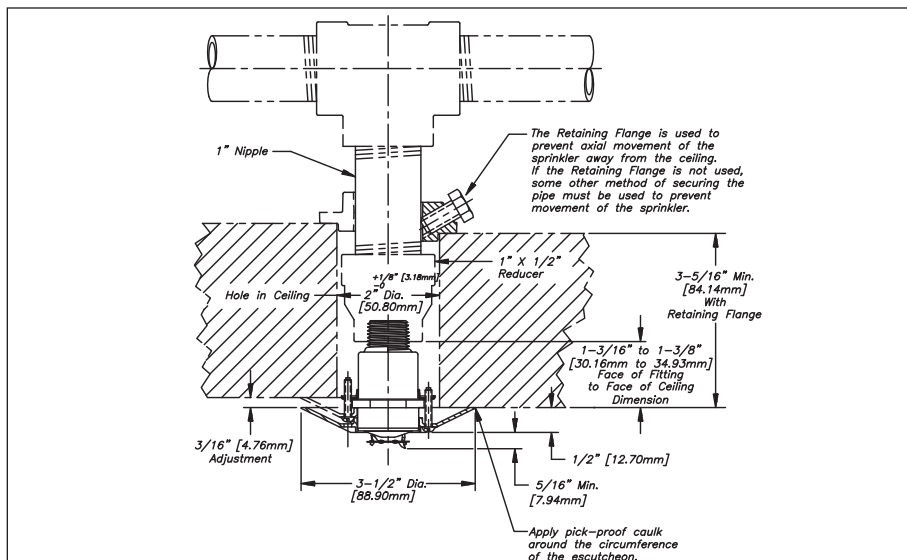
## Model XL Institutional Sprinkler Specification

Institutional sprinklers shall be [UL Listed] [NYC MEA Approved] quick response, [pendent, standard coverage sprinklers approved for light and ordinary hazard] [horizontal sidewall sprinklers, standard coverage, approved for light and ordinary hazard] [pendent, extended coverage sprinklers approved for light hazard] [horizontal sidewall, extended coverage sprinklers approved for light hazard]. Sprinkler and deflec-

tor to be of bronze construction, with 1/2" NPT thread. Levered fusible solder link shall consist of an approved black-painted beryllium-nickel link assembly. Fusible link shall be designed to release a suspended load that exceeds 50 lbs. (22.7 kg) when dropped from a 1-inch (25.4 mm) height. Water seal shall consist of a Teflon-coated Bellville spring washer and bronze diffuser sub-assembly containing no plastic parts. Institutional escutcheons shall be of zinc or aluminum construction with zinc ring plate and tamper resistant screws. Sprinkler K-factor shall be nominal 5.6 (81.0). Sprinkler temperature rating shall be Ordinary 165 °F (74 °C). Standard cover finish: [Bright chrome plated] [Specialty – specify]. Quick response institutional sprinklers shall be Reliable Model XL Institutional [Pendent, Standard Coverage (SIN R1314)] [Pendent, Extended Coverage (SIN R1344)] [Horizontal Sidewall, Standard Coverage (SIN R1334)] [Horizontal Sidewall, Extended Coverage (SIN R1364)] Bulletin 113.



Model XL INST QR, Horizontal Sidewall & Horizontal Sidewall EC Sprinkler



Model XL INST QR, Pendent & EC Pendent Sprinkler

# Reliable...For Complete Protection

Reliable offers a wide selection of sprinkler components. Following are some of the many precision-made Reliable products that guard life and property from fire around the clock.

- Automatic sprinklers
- Flush automatic sprinklers
- Recessed automatic sprinklers
- Concealed automatic sprinklers
- Adjustable automatic sprinklers
- Dry automatic sprinklers
- Intermediate level sprinklers
- Open sprinklers
- Spray nozzles
- Alarm valves
- Retarding chambers
- Dry pipe valves
- Accelerators for dry pipe valves
- Mechanical sprinkler alarms
- Electrical sprinkler alarm switches
- Water flow detectors
- Deluge valves
- Detector check valves
- Check valves
- Electrical system
- Sprinkler emergency cabinets
- Sprinkler wrenches
- Sprinkler escutcheons and guards
- Inspectors test connections
- Sight drains
- Ball drips and drum drips
- Control valve seals
- Air maintenance devices
- Air compressors
- Pressure gauges/identification signs
- Fire department connection

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The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

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Manufactured by

**Reliable**<sup>®</sup>

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