Model LD — 11.2 K-factor
Large Drop Upright Sprinkler, Standard Response
Control Mode Specific Application

General Description

The TYCO Model LD, 11.2 K-factor Large Drop Upright Sprinkler, Standard Response Control Mode Specific Application is a glass bulb type automatic sprinkler. It is intended for use with the National Fire Protection Association large drop sprinkler installation criteria for the protection of high piled storage. The LD Sprinkler can provide a higher level of protection than standard spray sprinklers and, in some cases, can provide an economic advantage by eliminating in-rack sprinklers.

NOTICE

The TYCO Model LD 11.2 K-factor, Large Drop Upright Sprinkler described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Sprinkler Identification Number

Refer to Table A for sprinkler identification number.

Technical Data

Approvals
UL and C-UL Listed
NYC Approved under MEA 289-04-E

Finish
Natural Brass

Physical Characteristics
Frame ......................... Bronze
Button .......................... Bronze
Sealing Assembly . Beryllium Nickel w/TEFLON
Bulb ................................. Glass (5mm dia.)
Compression Screw ................. Brass
Deflector .......................... Bronze

Operation

The glass bulb contains a fluid that expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, allowing the sprinkler to activate and flow water.

Design Criteria

The TYCO Model LD, 11.2 K-factor Large Drop Upright Sprinkler, Standard Response Control Mode Specific Application is only for use with National Fire Protection Association “large drop sprinkler” installation criteria.
**Installation**

The TYCO Model LD, 11.2 K-factor Large Drop Upright Sprinkler, Standard Response Control Mode Specific Application must be installed in accordance with this section.

**General Instructions**

Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontal, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 in. (1.6 mm) for the 155°F (68°C) rating and 3/32 in. (2.4 mm) for the 286°F (141°C) rating.

A leak tight 3/4 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 7 to 20 lb-ft (13.4 to 26.8 N-m). Higher levels of torque can distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

**Step 1.** With pipe thread sealant applied to the pipe threads, hand tighten the Model LD Sprinkler into the sprinkler fitting.

**Step 2.** Using the W-Type 3 (End B) Sprinkler Wrench (Ref. Figure 2) applied to the sprinkler Wrench Flats (Ref. Figure 1), tighten the Model LD Sprinkler into the sprinkler fitting.

**Care and Maintenance**

The TYCO Model LD, 11.2 K-factor Large Drop Upright Sprinkler, Standard Response Control Mode Specific Application must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection systems must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated, or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage to the sprinklers before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. For additional information, refer to the Installation section.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, such as NFPA 25, in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

The automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>Sprinkler Identification Number (SIN)</td>
<td>TY5153 is a redesignation of CS5153</td>
</tr>
<tr>
<td>K-factor, (gpm/psi) (lpm/bar)</td>
<td>11.2 gpm/psi (161.3 lpm/bar)</td>
</tr>
<tr>
<td>Temperature Rating ºF (ºC)</td>
<td>155°F (68°C) 200°F (93°C) 286°F (141°C)</td>
</tr>
<tr>
<td>Thread Size</td>
<td>3/4 in. NPT or ISO 7-3/4</td>
</tr>
<tr>
<td>Sprinkler Orientation</td>
<td>Upright</td>
</tr>
<tr>
<td>Maximum Working Pressure, psi (bar)</td>
<td>175 psi (12.1 bar)</td>
</tr>
</tbody>
</table>

**TABLE A MODEL LD LARGE DROP UPRIGHT SPRINKLER TECHNICAL DATA**
### Limited Warranty
For warranty terms and conditions, visit www.tyco-fire.com.

### Ordering Procedure
Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

**Sprinkler Assemblies with NPT Thread Connections**
Specify: Model LD (TY5153), K = 11.2, Upright Large Drop Sprinkler, (specify) temperature rating, (specify) finish, P/N (specify):
- 155°F (68°C) .................. 50-400-2-155
- 200°F (93°C) ................ 50-400-2-200
- 286°F (141°C) ................. 50-400-2-286

**Sprinkler Wrench**
Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001

<table>
<thead>
<tr>
<th>Storage Type</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Type</td>
<td>CMSA</td>
</tr>
<tr>
<td>Response Type</td>
<td>SR</td>
</tr>
<tr>
<td>System Type</td>
<td>Wet</td>
</tr>
<tr>
<td>Temperature Rating °F (°C)</td>
<td>155°F (68°C)</td>
</tr>
</tbody>
</table>

**Open Frame (i.e., no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics**
Refer to NFPA 13

**Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics**
Refer to NFPA 13

**Idle Pallet Storage**
Refer to NFPA 13

**Roll Paper Storage**
(Refer to the Standard)
Refer to NFPA 13

**Flammable/Ignitable Liquid Storage**
(Refer to the Standard)
Refer to NFPA 30

**Aerosol Storage**
(Refer to the Standard)
Refer to NFPA 30B

**Automotive Components in Portable Racks**
(Control mode only; refer to the Standard)
Refer to NFPA 13