

Series EC-5 — 5.6 K-factor Extended Coverage (Light Hazard) Pendent and Recessed Pendent Sprinklers

General Description

The Series EC-5 Extended Coverage Pendent Sprinklers are decorative glass bulb sprinklers designed for use in light hazard occupancies. They are intended for use in automatic sprinkler systems designed in accordance with standard installation rules (e.g., NFPA 13) for a maximum coverage area of 400 ft² (37,2 m²), as compared to the maximum coverage area of 225 ft² (20,6 m²) for standard coverage sprinklers used in light hazard occupancies.

The recessed version of the EC-5, intended for use in areas with a finished ceiling, uses the two-piece Style 50 Recessed Escutcheon. The Style 50 Recessed Escutcheon provides up to 3/8 inch (9,5 mm) of total adjustment from the flush pendent position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut.

Corrosion resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion resistant coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is

not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these corrosion resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

WARNINGS

The Series EC-5 Extended Coverage Sprinklers 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. The installing contractor or sprinkler manufacturer should be contacted with any questions.

Model/Sprinkler Identification Number

TY3232 - Pendent, 5.6K

TY3232 is a redesignation for C3232.



Technical Data

Approvals

UL and C-UL Listed. FM and NYC Approved. (Refer to Table A for complete approval information including corrosion resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.)

Maximum Working Pressure

175 psi (12,1 bar)

Pipe Thread Connection

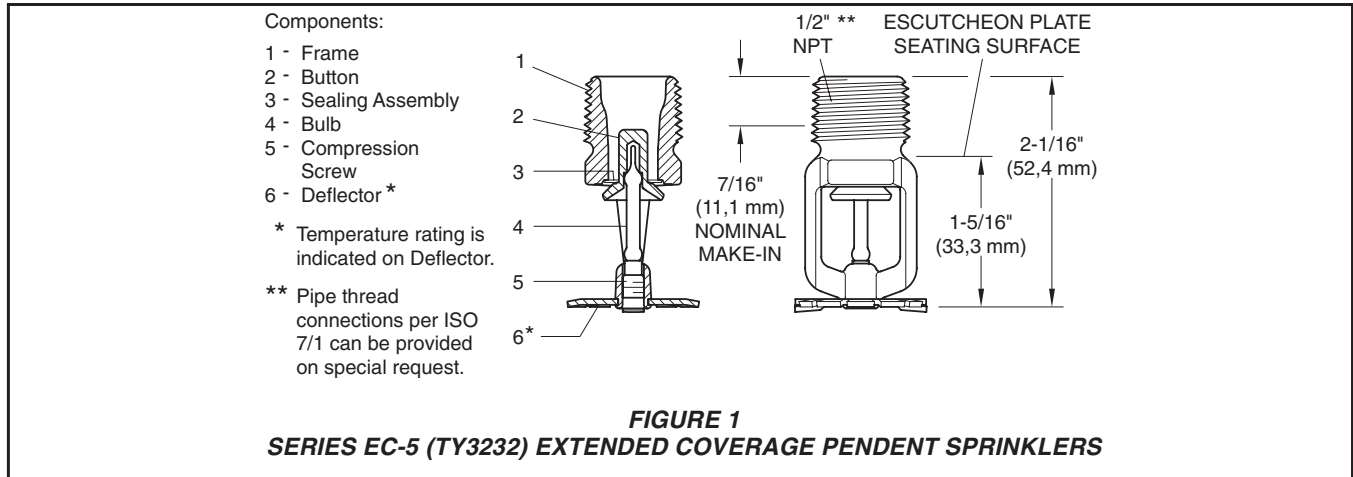
1/2 inch NPT

Discharge Coefficients

K = 5.6 GPM/psi^{1/2}
(80,6 LPM/bar^{1/2})

IMPORTANT

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.



HAZARD	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 4)		
				NATURAL BRASS	CHROME PLATED	WHITE* POLYESTER
LIGHT Refer to Table B for UL and C-UL Sensitivity Rating and Refer to Table C for FM Sensitivity Rating	PENDENT	135°F/57°C	Orange	1, 2, 5		
		155°F/68°C	Red	1, 2, 3, 5		
	REC. PENDENT w/ Style 50 Esc.	135°F/57°C	Orange	1, 2, 5		
		155°F/68°C	Red	1, 2, 3, 5		

NOTES:

- 1 Listed by Underwriters Laboratories, Inc. (UL).
 - 2 Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
 3. Approved by Factory Mutual Research Corporation (FM).
 4. Where Polyester Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion Resistant Sprinklers.
 5. Approved by the City of New York under MEA 113-04-E.
- *Frame and Deflector only. Listings and approvals apply to color (Special Order).

TABLE A
LABORATORY LISTINGS AND APPROVALS
(Refer to the Design Criteria Section)

Temperature Ratings
135°F/57°C and 155°F/68°C

Finish
Sprinkler: Refer to Table A
Recessed Escutcheon: White Coated, Chrome Plated, and Brass Plated

Physical Characteristics

Frame	Bronze
Button	Bronze
Sealing Assembly	Beryllium Nickel w/Teflon†
Bulb	Glass (3 mm dia.)
Compression Screw	Bronze
Deflector	Brass

†Registered trademark of DuPont

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 Series EC-5 Extended Coverage Pendent Sprinklers must only be installed in accordance with the applicable UL and C-UL Listing or FM Approval requirements as indicated below. Only the Style 50 Recessed Escutcheon is to be used for recessed

installation, as applicable (Ref. Table A, B, and C).

UL and C-UL Listing Requirements

1. The Series EC-5 Sprinklers may be used for the coverage areas shown in Table D, based on maintaining the minimum specified flow rate as a function of coverage area and hazard group for all of the sprinklers in the design area.
2. With respect to heat sensitivity, the Series EC-5 Sprinklers are permitted to be used with unobstructed construction consisting of flat, smooth ceilings with a pitch of one in six as defined and permitted by NFPA 13.
3. The minimum allowable spacing be-

		135°F	155°F
AREA	STYLE		
16 x 16	Pendent	QR	QR
16 x 16	Style 50 Recessed	QR	QR
18 x 18	Pendent	QR	QR
18 x 18	Style 50 Recessed	QR	QR
20 x 20	Pendent	QR	N/A
20 x 20	Style 50 Recessed	QR	N/A

QR: Quick Response
N/A: Not Applicable

TABLE B
SENSITIVITY RATING FOR UL AND C-UL LISTING
OF SERIES EC-5 SPRINKLERS

		135°F	155°F
AREA	STYLE		
16 x 16	Pendent	QR	QR
16 x 16	Style 50 Recessed	QR	QR
18 x 18	Pendent	QR	QR
18 x 18	Style 50 Recessed	QR	QR
20 x 20	Pendent	QR	QR
20 x 20	Style 50 Recessed	QR	QR

QR: Quick Response

TABLE C
SENSITIVITY RATING FOR FM APPROVAL
OF SERIES EC-5 SPRINKLERS

Installation

The Series EC-5 Sprinklers must be installed in accordance with the following instructions:

NOTES

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 horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm).

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). A maximum of 21 ft.lbs. (28,5 Nm) of torque is to be used to install sprinklers. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Do not attempt to compensate for insufficient adjustment in an Escutcheon Plate by under- or over-tightening the Sprinkler. Readjust the position of the sprinkler fitting to suit.

Step 1. The sprinkler must be installed with the deflector parallel to the mounting surface. Pendent sprinklers must be installed in the pendent position.

Step 2. After installing the Style 50 mounting plate (or other escutcheon, as applicable) over the sprinkler pipe threads and with pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 3. Wrench tighten pendent sprinklers using only the W-Type 6 (End A) Sprinkler Wrench. Wrench tighten the recessed pendent sprinklers using only the W-Type 7 Sprinkler Wrench. The wrench recess of the applicable sprinkler wrench (Ref. Figure 3 and 4) is to be applied to the sprinkler wrench flats (Ref. Figure 1).

tween the Series EC-5 Sprinklers, to prevent cold soldering, is 8 feet (2,4 m).

- The Series EC-5 Sprinklers are to be installed in accordance with all other requirements of NFPA 13 for extended coverage pendent sprinklers.

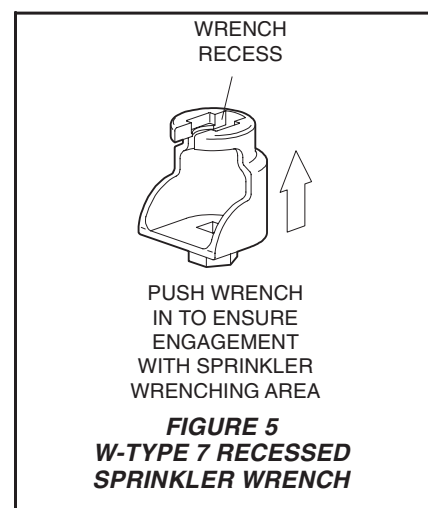
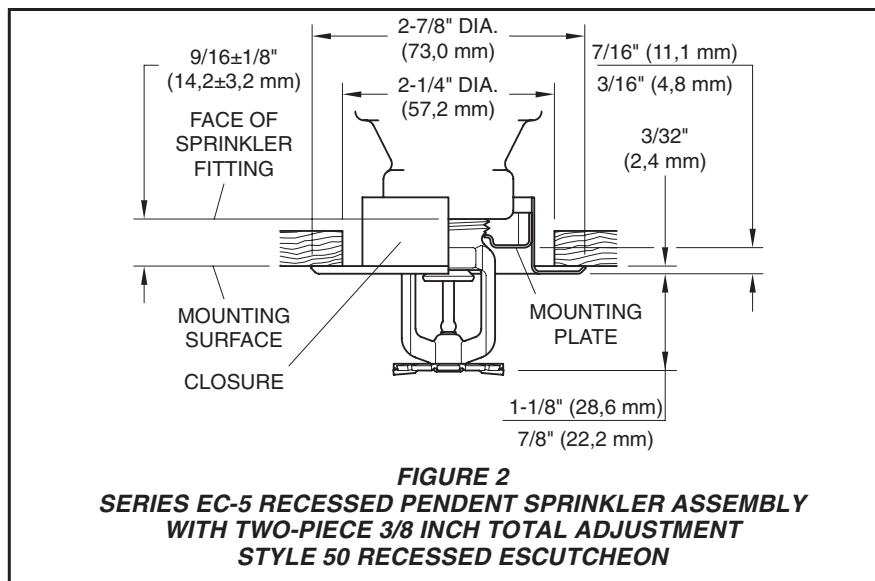
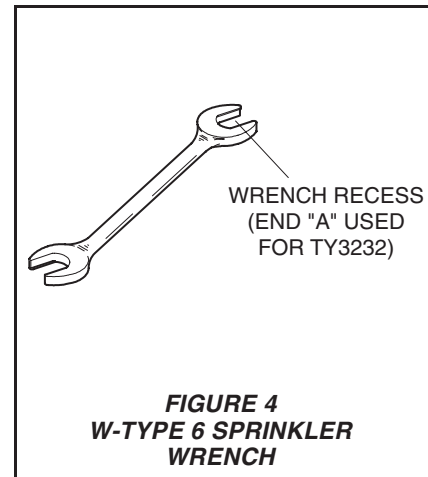
FM Approval Requirements

The Series EC-5 Extended Coverage Sprinklers are to be installed in accordance with the applicable Factory Mutual Loss Prevention Data Sheet. Information provided in the FM Loss Prevention Data Sheets relate to, but are not limited to, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector-to-ceiling distance.

DESCRIPTION	AREA	GPM	PSI
TY3232 (K=5.6) PENDENT	16 x 16	26	21.6
	18 x 18	33	34.7
	20 x 20	40	51.0

1 ft. = 0.3048 m
 1 ft² = 0.093 m²
 1 gpm = 3.785 lpm
 1 psi = 0.06895 bar
 1 gpm/ft² = 40.74 mm/min

TABLE D
FLOW CRITERIA FOR UL AND C-UL LISTING
OF SERIES EC-5 SPRINKLERS



Care and Maintenance

The Series EC-5 Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTE

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. (Ref. Installation Section).

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant coating. Thereafter,

annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the corrosion resistant coating as it may be affected by the corrosive conditions present.

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 (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

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

Limited Warranty

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Ordering Procedure

When placing an order, indicate the full product name. Please specify the Sprinkler Identification Number (SIN), quantity, and temperature rating. Refer to the Price List for complete listing of Part Numbers.

Contact your local distributor for availability.

Sprinkler Assemblies with NPT Thread Connections:

Specify: TY3232, (specify temperature rating), Extended Coverage Pendent Sprinkler with (specify finish), P/N (specify).

135°F/57°C

Natural Brass	PSN 51-051-1-135
Chrome Plated	PSN 51-051-9-135
White Coated	PSN 51-051-4-135
White (RAL9010)*	PSN 51-051-3-135

155°F/68°C

Natural Brass	PSN 51-051-1-155
Chrome Plated	PSN 51-051-9-155
White Coated	PSN 51-051-4-155
White (RAL9010)*	PSN 51-051-3-155

*Eastern Hemisphere sales only.

Recessed Escutcheon:

Specify: Style 50 Recessed Escutcheon with (specify finish), P/N (specify).

Style 50 Recessed Escutcheon

Chrome Plated	PSN 56-711-9-010
White Color Coated	PSN 56-711-4-010
White (RAL9010)*	PSN 56-711-3-010
Brass Plated	PSN 56-711-2-010

*Eastern Hemisphere sales only.

Sprinkler Wrench:

Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387

Specify: W-Type 7 Recessed Sprinkler Wrench, P/N 56-850-4-001

