

# Omega R-1

## Residential Pendent Automatic Sprinkler

Manufactured by: Central Sprinkler Corporation  
451 North Cannon Avenue, Lansdale, Pennsylvania 19446



### Product Description

The Omega model R-1 Residential Pendent Automatic Sprinkler is a low profile, aesthetically pleasing, ceiling mount sprinkler that offers a high degree of protection for human life. It operates five to six times faster than a standard sprinkler and features a spray pattern that has been shown to be effective in the control or extinguishment of residential fires.

The model R-1 is Listed\* by Underwriters Laboratories as a Residential Sprinkler with a K Factor of 3.85, a temperature rating of 160°F/71°C and a maximum working pressure of 175 psi. It qualifies for installation in residential occupancies in accordance with the current edition of NFPA 13 or NFPA 13D.

The model R-1 sprinkler is available in two standard finishes. Its mating escutcheon plate is available in three standard finishes with additional special finishes available.

**Operation:** A fusible alloy pellet is compressed with a bearing disc into a copper housing by a ball plunger. Heat is absorbed by the heat collecting fins and conducted to the alloy pellet. At the rated temperature the alloy melts, causing the ball plunger to drop, freeing balls from the retaining groove. This movement allows system water pressure to force the orifice sealing mechanism and deflector assembly to open. Water is then discharged in a designed flow pattern.



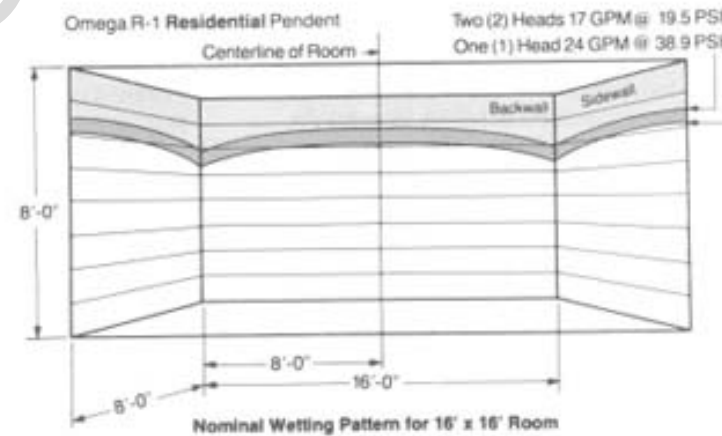
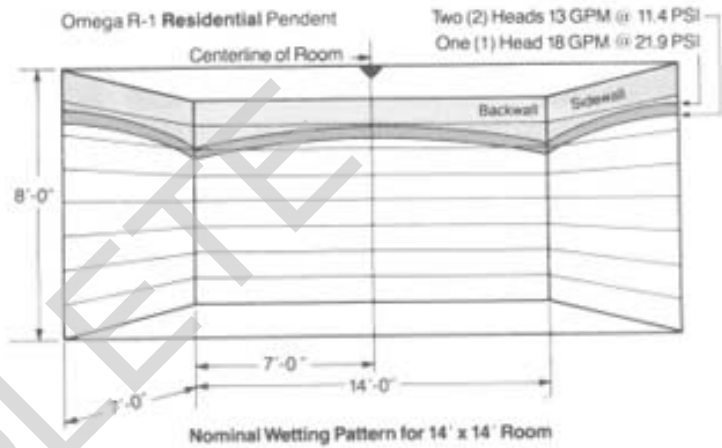
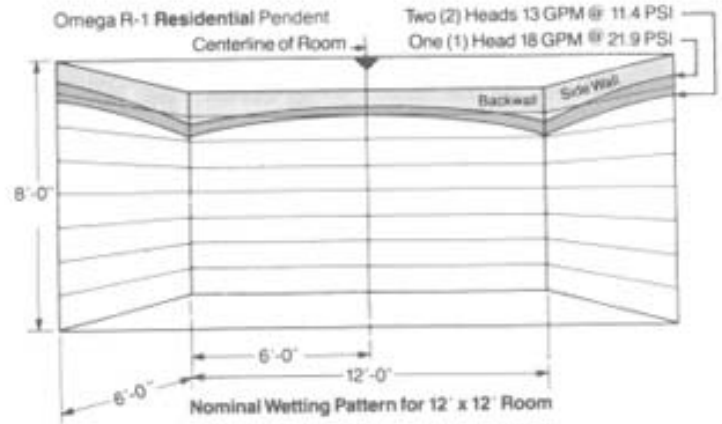
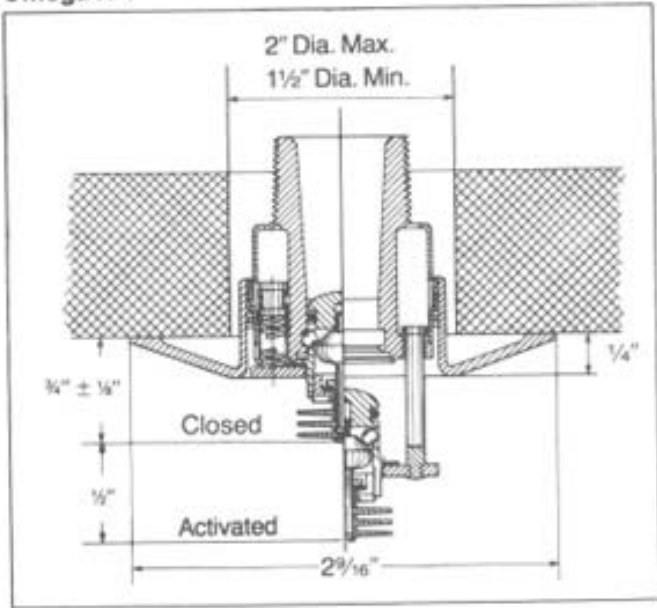
### Technical Data

Model number: R-1  
Style: Pendent  
Orifice size: 3/8"  
K factor: 3.9  
Thread size: 1/2" N.P.T.  
Temperature rating: 145°F/63°C,  
160°F/71°C  
Approvals: U.L., B.S. & A.  
(Cal. No. 375-75-SA)  
Maximum working pressure: 175 psi  
Factory hydro test: 100% at 500 psi  
Standard finishes:  
Sprinkler: chrome, factory brass  
Escutcheon plate: chrome plated,  
brass plated, white  
Length: 2 1/8"  
Width: 1 1/8"  
Adjustable range below ceiling:  
3/8" to 7/8"  
Highest allowable ambient  
temperature: 100°F/38°C  
Weight: 3.2 oz.

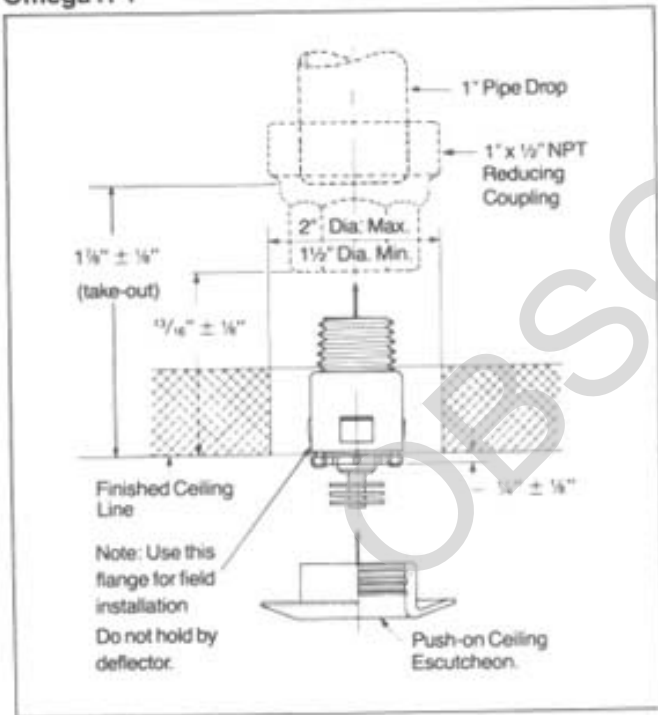


## 3/8" Orifice Pendent Automatic Sprinkler

**Cross-section  
Omega R-1**



**Installation Diagram  
Omega R-1**



**Omega Model R-1 Sprinkler Wrench**





## Technical Data

### Design Requirements - Residential Applications

Maximum spacing between sprinklers	Maximum sprinkler location from any wall	Minimum design flow (pressure)	
		one sprinkler	two or more sprinklers
12 feet (or less)	6 feet (or less)	18 GPM (21.9 psi)	13 GPM each (11.4 psi)
14 feet	7 feet	18 GPM (21.9 psi)	13 GPM each (11.4 psi)
16 feet	8 feet	24 GPM (38.9 psi)	17 GPM each (19.5 psi)

For additional information, refer to the Omega Advanced Installation Guide.



## Installation

All model R-1 sprinklers must be installed according to current NFPA 13 or NFPA 13D. Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by Central Sprinkler Corporation. In addition, installation must also meet local government provisions, codes, and standards as applicable.

The system piping must be hydraulically calculated to insure the minimum flow rate at the sprinkler. Check for the proper model, style, orifice size, and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units. Wet pipe systems must be protected from freezing. Model R-1 pendent sprinklers are not listed for use in dry systems.

Upon completion of the installation, the system must be tested per recognized standards.

In the event of a thread leak, remove the unit, apply new pipe joint compound or tape, and reinstall.

### Installation Sequence

**Step 1.** The unit must be installed in a pendent position.

**Step 2.** The sprinkler fitting should be a nominal  $1\frac{3}{16}$ " (plus or minus  $\frac{1}{16}$ ") behind the finished ceiling line. Adjustments may be made via the push-on escutcheon plate to compensate for variations in the fittings.

Do not use the push-on escutcheon plate to hold the unit in position. The sprinkler will only function properly when the system piping is anchored to the building structure. Otherwise, reaction forces from system initiation could alter the sprinkler alignment and disrupt the distribution pattern.

**Step 3.** Use only a non-hardening pipe joint compound or Teflon\* tape. Apply only to the male threads.

**Step 4.** Hand tighten the sprinkler into the fitting. Use a Central Sprinkler Omega model R-1 sprinkler wrench to tighten the unit in the fitting. The wrench attaches easily to any  $\frac{1}{2}$ " socket drive ratchet. A leak tight joint requires only 7 to 14 ft.lbs. of torque; a tangential force of 14 to 28 lbs. delivered through a 6" handle will deliver adequate torque. Torque levels over 21 ft.lbs. may distort the orifice seal, resulting in leakage.

**Step 5.** To install the escutcheon plate, align it with and press it over the sprinkler body until the outer edge of the escutcheon meets the mounting surface.

Do not under- or overtighten the sprinkler to compensate for inaccurate escutcheon plate adjustment. Readjust the sprinkler fitting as required.

**Step 6.** Special care should be taken when installing with a CPVC system. Sprinklers should be installed only after system has been tested and drained to insure that no primer or cement accumulates within the sprinkler. Special care should be taken when installing with a copper system. Sprinklers should be installed only after the inside of the sprinkler drop and associated fittings have been wire brushed to remove any flux. Residual flux can cause corrosion and in extreme cases can impair proper sprinkler operation.

**Step 7.** Refer to the Omega Advanced Installation Guide for additional information regarding special residential situations such as heat sources, obstructions, and unusual ceiling configurations.

\*Teflon is a trademark of the DuPont Corp.



## Care & Maintenance

Sprinklers must be handled carefully. They should not be transported or stored where ambient temperature may exceed 100°F/38°C. For best results, store them in a dry, cool location in the original shipping package.

Do not install sprinklers that have been dropped or visibly damaged. Sprinklers should never be painted, coated, plated or altered in any other way from manufactured condition or they may not function properly. Any sprinklers altered in such manner must be replaced.

The owner is responsible for the proper operating condition of all fire protection devices and accessories. The NFPA standard 13A entitled "Care and Maintenance of Sprinkler Systems" contains guidelines and minimum maintenance requirements. Furthermore, the local Authority Having Jurisdiction may have additional regulations and requirements for maintenance, testing, and inspection that must be obeyed.

It is advisable to have sprinkler systems inspected regularly by a qualified inspection service. Length of time between such inspections can vary due to accessibility, ambient atmosphere, water supply, and site activity.

Do not attempt to reassemble or otherwise reuse a sprinkler that has operated. Replace any sprinkler exhibiting corrosion or damage; always use new sprinklers of the same type and temperature rating as replacements.

Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed; in the event that construction has altered the original configuration, additional sprinklers should be installed to maintain the protection level.

Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all authorities having jurisdiction, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a wise precaution.



To remove the system from service mode, first refer to the system operating guide and valve instruction. Drain water and relieve pressure in the pipes. Remove the existing unit and install the replacement, using only the special sprinkler wrench. Be certain to match model, style, orifice, and temperature rating.

A fire protection system that has been shut off after activation should be returned to service immediately. Inspect the entire system for damage and replace or repair as necessary. Sprinklers that did not operate but were subjected to corrosive elements of combustion or excessive temperatures should be inspected, and replaced if need be. The *Authority Having Jurisdiction* will detail minimum replacement requirements and regulations.

**Guarantee:** Central Sprinkler Corp. will repair and/or replace any products found to be defective in material or workmanship within a period of one year from date of shipment. Please refer to the current Price List for further details of the warranty.



## Ordering Information

When placing an order, indicate the full product name. Please specify the quantity, model number, style, orifice size, temperature rating, type of finish, escutcheon plate finish, and sprinkler wrench.

For special painted escutcheon finishes, it is advisable to provide paint in a lacquer-base finish to insure proper color duplication. Without such a guide, Central Sprinkler Corp. can not be responsible for acceptable color matching.

**Availability & Service:** Central sprinklers, accessories, and other products are available throughout the U.S. and Canada, and internationally, through a network of Central Sprinkler distribution centers. You may write directly to Central Sprinkler Corporation or call 1-800-523-6512 for the distributor nearest you.

**Patents:** The Omega model R-1 Sprinkler is protected under U.S. Patent No. 4,491,182. Additional patents are pending.

### Conversion Table

1 inch	= 25.400 mm
1 foot	= 0.3048 M
1 pound	= 0.4536 kg
1 foot pound	= 1.356 Nm
1 psi	= 6.895 Kpa
	= 0.0689 bar
	= 0.0703 kg/cm <sup>2</sup>
1 U.S. gallon	= 3.785 dm <sup>3</sup>
	= 3.785 liters

Conversions are approximate



**Central Sprinkler Corporation**

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