

# AHRI Standard 480-2007 (formerly ARI Standard 480-2007)

## 2007 Standard for Performance Rating of Remote Type Refrigerant- Cooled Liquid Coolers



2111 Wilson Boulevard, Suite 500  
Arlington, VA 22201, USA  
[www.ahrinet.org](http://www.ahrinet.org)

PH 703.524.8800  
FX 703.562.1942

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Note:

This standard supersedes ARI Standard 480-2001.

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# PERFORMANCE RATING OF REMOTE TYPE REFRIGERANT-COOLED LIQUID COOLERS

## Section 1. Purpose

**1.1 Purpose.** The purpose of this standard is to establish for Remote Type Refrigerant-Cooled Liquid Coolers: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

**1.1.1 Intent.** This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors and users.

**1.1.2 Review and Amendment.** This standard is subject to review and amendment as technology advances.

## Section 2. Scope

**2.1 Scope.** This standard applies to Remote Type Refrigerant-Cooled Liquid Coolers of the Shell-and-Tube, Shell-and-U-Tube, Shell-and-Coil, and Tube-in-Tube types using single component and azeotropic refrigerants only.

**2.2 Exclusions.**

**2.2.1** This standard does not apply to liquid coolers supplied as part of factory-assembled liquid-chilling packages.

**2.2.2** This standard does not apply to liquid coolers of the following types:

- a. Baudelot-type coolers
- b. Open-tank and coil coolers
- c. Open shell-and-tube coolers

**2.2.3** This standard does not include sanitary provisions necessary for the handling of potable Liquids.

**2.2.4** This standard does not apply to liquid coolers using zeotropic refrigerants.

## Section 3. Definitions

All terms in this document follow the standard industry definitions in the current edition of *ASHRAE Terminology of Heating, Ventilation, Air Conditioning and Refrigeration*, unless otherwise defined in this section.

**3.1 Evaporating Temperature.** The saturation temperature corresponding to the refrigerant pressure at the liquid cooler refrigerant outlet.

**3.2 Field Fouling Allowance.** Provision for the anticipated Fouling Factor during use.

**3.2.1 Fouling Factor.** The thermal resistance due to fouling accumulated on the heat transfer surface.

**3.3 Liquid.** Where used in this standard, the term Liquid by itself shall denote the fluid being cooled.

**3.4 Mechanically-Cleanable Liquid Cooler.** A liquid cooler in which Liquid flows through tubes which are accessible from both ends for cleaning by mechanical means, or accessible from one end when U-tubes are used.