ANSI/AHRI Standard 710 (I-P)

2009 Standard for

Performance Rating of Liquid-Line Driers



Approved by ANSI on 2 August 2010

AHRI Air-Conditioning, Heating, and Refrigeration Institute

2111 Wilson Boulevard, Suite 500
Arlington, VA 22201, USA
www.ahrinet.org

PH 703.524.8800
FX 703.562.1942

AVA Documents
Document Sharing Hub

Full document details: AHRI Standard 710-2009 (I-P) - Performance Rating of Liquid-Line Driers

IMPORTANT

SAFETY DISCLAIMER

AHRI does not set safety standards and does not certify or guarantee the safety of any products, components or systems designed, tested, rated, installed or operated in accordance with this standard/guideline. It is strongly recommended that products be designed, constructed, assembled, installed and operated in accordance with nationally recognized safety standards and code requirements appropriate for products covered by this standard/guideline.

AHRI uses its best efforts to develop standards/guidelines employing state-of-the-art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

Note:

This standard supersedes ARI Standard 710-2004.
For SI ratings, see AHRI Standard 711 (SI)-2009.

© Copyright 2009, by Air-Conditioning,
Heating, and Refrigeration Institute
Registered United States Patent and Trademark Office

Documents
Document Sharing Hub

Full document details: AHRI Standard 710-2009 (I-P) - Performance Rating of Liquid-Line Driers

TABLE OF CONTENTS

SECTION PAGE

Section 1. Purpose....1

Section 2. Scope....1

Section 3. Definitions....2

Section 4. Test Requirements....3

Section 5. Rating Requirements....3

Section 6. Minimum Data Requirements for Published Ratings....5

Section 7. Marking and Nameplate Data....5

Section 8. Conformance Conditions....5

TABLES

Table 1. Applicable Refrigerant Systems....1

Table 2. Published Ratings....3

Table 3. Maximum Range for Duplicate EPD Determination....4

Table 4. Flow Rate per Ton of Refrigeration at 86°F Liquid and 5.0°F Saturated Vapor....5

FIGURES

Figure 1. Example of Water Capacity Rating Calculation for Refrigerant 134a at 75°F....6

Appendix A. References – Normative....7

Appendix B. References – Informative....7

Appendix C. Guide for Selecting a Liquid-line Drier – Informative....8

Documents
Document Sharing Hub

Full document details: AHRI Standard 710-2009 (I-P) - Performance Rating of Liquid-Line Driers

PERFORMANCE RATING OF LIQUID-LINE DRIERS

Section 1. Purpose

1.1 *Purpose.* The purpose of this standard is to establish for Liquid-line Driers: 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 Liquid-line Driers utilizing solid Desiccants designed for use in the liquid line of all types of refrigeration and air-conditioning systems.

2.2 *Applicability.* This standard applies to Liquid-line Driers for use in refrigerant systems employing the halocarbon refrigerants listed in Table 1, as described in ANSI/ASHRAE Standard 34:

Table 1. Applicable Refrigerant Systems

Refrigerant Number	Chemical Name	Chemical Formula
R-12	dichlorodifluoromethane	$CC1_2F_2$
R-22	monochlorodifluoromethane	$CHC1F_2$
R-134a	1,1,1,2-tetrafluoroethane	CH_2FCF_3
R-245fa	1,1,1,3,3-pentafluoropropane	$CHF_2CH_2CF_3$
R-404A	Refrigerants 125/143a/134a 44.0/52.0/4.0 % wt.	CHF_2CF_3/ CH_3CF_3/ CH_2FCF_3
R-407C	Refrigerants 32/125/134a 23.0/25.0/52.0 % wt.	CH_2F_2/ CHF_2CF_3/ CH_2FCF_3
R-410A	Refrigerants 32/125 50.0/50.0 % wt.	CH_2F_2/ CHF_2CF_3
R-502	Refrigerants 22/115 48.8/51.2 % wt.	$CHC1F_2$/ $CC1F_2CF_3$
R-507A	Refrigerants 125/143a 50.0/50.0 % wt.	CHF_2CF_3/ CH_3CF_3

2.3 *Exclusions.* This standard does not apply to liquid anti-freeze solution Desiccants or driers used in the suction line or low side of refrigeration and air-conditioning systems.

2.4 *Limitations.* This standard provides a means of determining Water Capacity and Refrigerant Flow Capacity of a Liquid-line Drier at specified conditions. This standard does not attempt to reflect the performance of a Liquid-line Drier over the entire range of possible applications. Therefore, acid and particulate removal are not considered here.

2.4.1 *Acid Removal.* It is known that acid in a refrigeration system causes harmful corrosion. Many Liquid-line Driers will remove acids. However, there is no knowledge at the present time as to what concentration of various acids is allowable, nor how to test a liquid-line drier's ability to remove these acids. Therefore, while noting its importance, no consideration of acid removal is given in this standard at this time.

AVA Documents
Document Sharing Hub

Full document details: AHRI Standard 710-2009 (I-P) - Performance Rating of Liquid-Line Driers