

STANDARD

I.S. EN 13487:2004

ICS 17.140.20 27.060.30

National Standards Authority of Ireland Dublin 9 Ireland

Tel: (01) 807 3800 Tel: (01) 807 3838

AIR COOLED REFRIGERANT CONDENSERS

**HEAT EXCHANGERS - FORCED CONVECTION** 

**AND DRY COOLERS - SOUND** 

**MEASUREMENT** 

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on: March 25, 2004

NO COPYING WITHOUT NSAI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

© NSAI 2004 Price Code H

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 13487

December 2003

ICS 17.140.20: 27.060.30

#### English version

# Heat exchangers - Forced convection air cooled refrigerant condensers and dry coolers - Sound measurement

Echangeurs thermiques - Aérocondenseurs à convection forcée et batterie froide - Mesurage du bruit

Wärmeaustauscher - Ventilatorbelüftete Kältemittelverflüssiger und Trockenkühltürme -Schallmessung

This European Standard was approved by CEN on 1 October 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

## EN 13487:2003 (E)

Contents				
Forewo	ord	3		
Introdu	uction	4		
1	Scope	5		
2	Normative references	5		
3	Terms and definitions	6		
4	Instrumentation	7		
5	Manufacturer's data	7		
6	Test conditions	8		
6.1	Test methods			
6.2	Operating condition of the test subject			
6.3 6.4	Ambient conditions  Arrangement of measuring points			
6.4.1	General			
6.4.2	Apparatus with vertical air throw and draw through arrangement			
6.4.3	Apparatus with horizontal air throw and draw through arrangement			
6.4.4	Special apparatus	9		
7	Test procedures	9		
7.1	Measurement of sound pressure / intensity levels			
7.2	Measurement of the background noise			
7.3	Data to be recorded	10		
8	Calculations	10		
8.1	Correction value for the background noise			
8.2	Correction value for the influence of the ambient			
8.3	Calculation of sound data			
8.3.1	A-weighted sound power level			
8.3.2	Average sound pressure level on the partial measuring areas a to e			
8.3.3	Sound power level of the test subject	11		
9	Conversion to nominal fan speed	12		
10	Test report	12		
	A (normative) Positions of measuring points for vertical air throw			
A.1	Example with one fan			
A.2	Example with six fans	14		
Annex	B (normative) Positions of measuring points for horizontal air throw	15		
B.1	Example with one fan			
B.2	Example with six fans	16		
Annex	C (normative) Standard method for calculating the sound pressure level	17		
Annex	D (normative) Deviations from the test subject	18		
D.1	Model ranges composed of modules			
D.2	Dimensions of the heat exchanger coil	18		
Annex	E (informative) Directivity	19		
E.1	General			
E.2	Definition			
E.3	Calculation of the directivity number	19		
Bibliography				

EN 13487:2003 (E)

#### **Foreword**

This document EN 13487:2003 has been prepared by Technical Committee CEN/TC 110, "Heat exchangers", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

Annexes A, B, C and D are normative. Annex E is informative.

This document contains a bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

### EN 13487:2003 (E)

## Introduction

This European Standard is one of a series of European Standards dedicated to heat exchangers.

This standard provides information for assessing and presenting the acoustic characteristics of heat exchangers in operation.

This standard also provides information necessary for specifying and selecting the product which best suits the needs of the purchaser.



The is a new provider i arenade and chare publication at the limit below	This is a free preview.	Purchase the	entire publication	at the link below:
--	-------------------------	--------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation