DIN EN 13487:2019-11 (E)

Heat exchanger - Forced convec tion air cooled refrigerant condensers and dry coolers - Sound measurement

Contents

Page

European foreword 4

Introduction 5

1 Scope 6
1.1 General 6
1.2 Size of source 6
1.3 Object 6

2 Normative references 7

3 Terms and definitions 8

4 Description of apparatus types 11

5 Sound power determination 13
5.1 General 13
5.2 Microphone positions and measurement surface for essentially free field conditions over reflecting plane and sound intensity measurements 13
5.3 Microphone positions in hard-walled test rooms or special reverberation test rooms 14
5.4 Background noise 14
5.5 Calculation of sound power 14

6 Emission sound pressure level determination 14

7 Installation and mounting conditions 15
7.1 Location 15
7.2 Mounting 15

8 Operating conditions 15
8.1 General 15
8.2 Supply of electrical energy 15
8.3 Fan speed setting 16

9 Measurement uncertainties 16

10 Information to be recorded 16
10.1 General 16
10.2 Noise source under test 16
10.3 Test environment 17
10.4 Instrumentation 17
10.5 Acoustical data 17

11 Information to be reported 18
11.1 General 18
11.2 Noise source under test 18
11.3 Test environment 18
11.4 Instrumentation 18
11.5 Acoustical data 19

12 Declaration and verification of noise emission values 19

Annex A (normative) Calculation of the sound power with different partial measuring surfaces in accordance with EN ISO 3744 and EN ISO 3746 20

Annex B (normative) Simplified arrangement of measuring points 21

Annex C (informative) Example of dual-number declaration 25

Annex D (normative) Deviations from the test subject 26

Annex E (informative) Directivity 27

Bibliography 28