

TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING IEC 60335-2-40:2022

Household and similar electrical appliances – Safety – Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

“R”	Required
“S”	May be subcontracted, see OD 2012
“SP”	Specialized Facility, see IECEE 02-2
“W”	Witness testing in the categories “MED” and “MEAS”
“3PPS”	Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Equipment Classification
5.6	<i>High and low temperature & humidity chamber</i>		GDJS-015B
6.2	IP waterproof test		JL-12, JL-34, JL-56, JL-7
10	Power input and current		LS2050B
11	<i>Heating</i>	<i>Test room Thermocouple grid Glass fibre insulating material (thickness of at least 25 mm; density of at least 16 kg/m³)</i>	GW-225
13	Leakage current test		WB2675D
15.2	IP waterproof test		JL-12, JL-34, JL-56, JL-7
19	<i>Abnormal operation</i>	<i>Felt strips (100 mm width; specified mass of 4 kg/m² ± 0,4 kg/m² and thickness of 25 mm) Textile material (prewashed double-hemmed cotton sheet - mass between 140 g/m² and 175 g/m² in the dry condition)</i>	

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21.101	Transport vibration for flammable refrigerants	Vibration table according to ISO 13355:2016 with the power spectral density profile specified in table 101 Truck transport test	LVD-100KG
22	Construction	Vacuum pressure apparatus Test apparatus for flammable refrigerants (IEC 60079-15) UV-C spectral irradiance measuring apparatus Burning velocity measurement apparatus (22.116.6) Vibration measurement with low pass filter at 200Hz (22.125)	CZKS-6+DFX-20
30	Resistance to heat and fire	Ball pressure apparatus specified in IEC 60695-10-2:2014 with additional dimensions and shapes as shown in figure 105. Measuring device for height of specimen unloaded and loaded.	ZRS-3H
31	Resistance to rusting	Salt mist test apparatus (IEC 60068-2-52)	YWX/Q-010
32	Radiation, toxicity and similar hazards	UV-C irradiance test apparatus	LPCE-2(LMS-9000CUV)
Annex EE	Pressure tests	Pressure apparatus	
Annex FF	Leak simulation test	Gas concentration monitor (t(90) response time of faster than 30 seconds, gas sampling in confined areas shall not exceed 2 ml every 30 s)	
Annex GG.7.2.2	Random vibration test		LVD-AT01
Annex GG.7.2.3	Drop test with the packaging		DT-60KG
Annex KK	Test method for hot surface ignition temperature for A2L	Test apparatus for hot surface ignition temperature for A2L	RSY-LT
Annex LL	Refrigerant detection systems for flammable refrigerants	Test chamber as Figure LL.1 Test gas (LL.2) Vibration test apparatus to refrigerant sensor (LL.10)	

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Annex MM	Refrigerant sensor location confirmation test	Gas concentration monitor (at least 90 % response within 10 seconds (time constant 4,3 seconds), the sampling interval shall be 10 seconds or less)	
Annex NN	Flame arrest enclosure verification test for A2L refrigerants	Dielectric strength apparatus Refrigerant ignition test apparatus (15 kV source producing a 30 mA spark across a 6,4 mm gap for 0,3 s ± 0,05 s or equivalent)	
Annex OO	UV radiation conditioning		UV-263LS
Annex PP	Leak detection system confirmation test for flammable refrigerants	Gas concentration monitor as Annex FF Test room	
Annex QQ	Methods for determining releasable charge	Electronic scale stop watch	