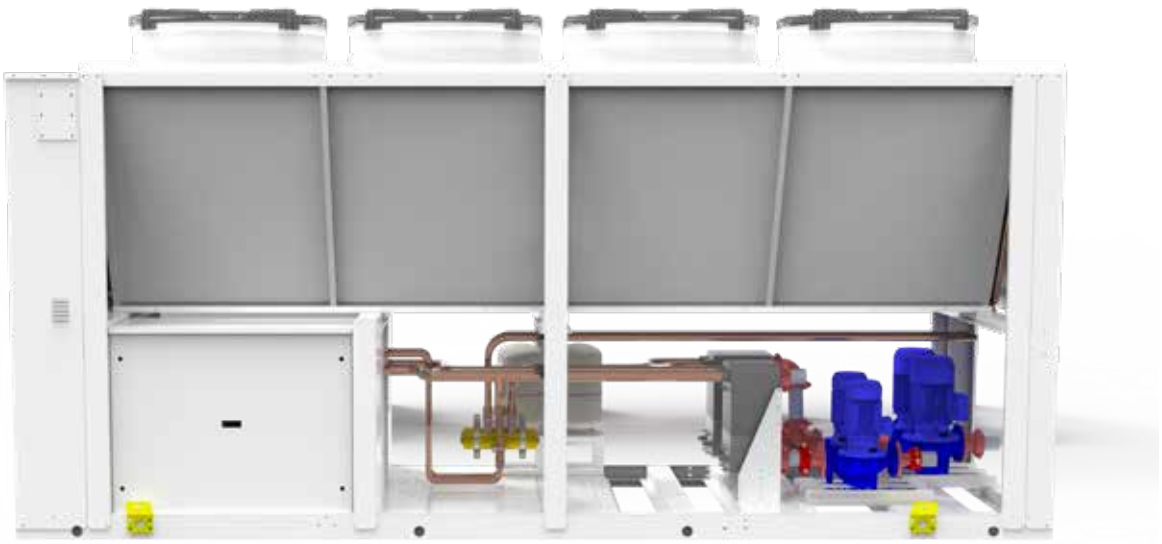
EGPE N HE Kc

AIR COOLED CHILLERS FOR OUTDOOR INSTALLATION
WITH SCROLL COMPRESSORS

Cooling capacity from 107 to 665 kW



Multifunction units for 4-pipe systems of EGPE N HE Kc series are suitable for outdoor installation and are particularly indicated to cool pure fluid solutions or containing glycol for industrial applications or in air conditioning systems of the service industry where it is necessary to grant excellent performances and a very low environmental impact.

The units are designed for external installation, in compliance with the European standard EN 378 and relevant updates. Depending on the capacity required the units are available with 1 or 2 independents cooling circuits equipped with 1 or 2 compressors for every circuit (tandem configuration).

Thanks to the many available options, these chillers are particularly versatile and are easily adaptable to the different types of plants, where production of chilled or heat water is required.

All the units are completely factory assembled, tested and supplied with refrigerant plus non-freezing oil; so, once on installation site, they only need to be positioned and connected to the hydraulic and power supply lines.

Units CE certified in compliance with the European regulation 2016/2281 ERP 2021.

MAIN COMPONENTS

STRUCTURE
Made of a base and a chassis manufactured in high-thickness galvanised steel, assembled with stainless steel rivets. All galvanised steel surfaces are powder-coated with colour RAL 7035.

COMPRESSORS
Scroll type compressors with revolving spirals for refrigerant R410A, operating on one or two independent cooling circuits in tandem or trio version. The compressors are installed on rubber-type ant-vibration dampers, are provided with direct-starting motors and cooled by the refrigerant gas suctioned; they are equipped with integrated thermistors protections with manual reset, preserving them from overcharges. Oil crankcase is provided with heater. They are charged with polyol ester oil. The compressors' terminal board features an IP54 protection level. The commissioning and decommissioning of the compressors is controlled by the microprocessor on board the unit, regulating the cooling and heating power supplied.

EVAPORATOR
Stainless steel AISI 316L plates type, with double gas circuit, thermally insulated using a closed cells flexible mattress of a great thickness and UV resistant. The maximum operating pressures are 6 bars for the water line and 42 bars for the refrigerant line. The evaporator is also provided with a safety differential pressure switch on the water side, which does not allow the unit operation in case of water flow lack to the exchanger, and with an anti-frost heater in case of an uncontrolled water temperature drop.

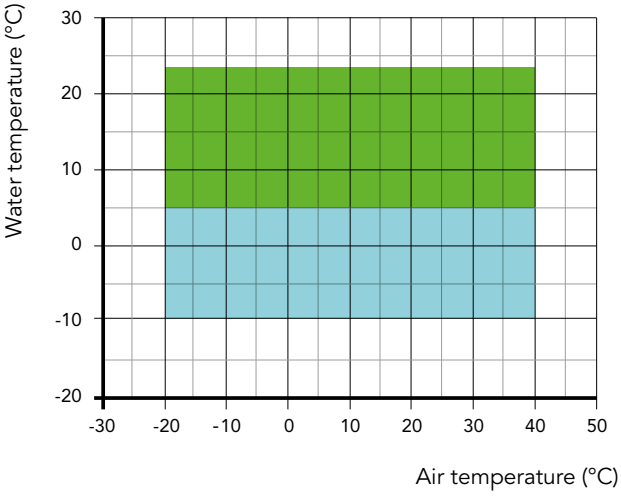
COILS
Made of micro-finned copper pipes arranged in staggered and mechanically expanded ranks inside an aluminium finned pack. The profile of the fin is designed to grant the maximum heat exchange efficiency. The exchangers are provided with electric linear heater to ensure condensation does not freeze in its lower part following the defrost operations carried out during the winter period. The defrost of the hot gas finned exchangers is controlled in pressure. The maximum operating pressure on refrigerant side of the coil corresponds to 45 relative bars.

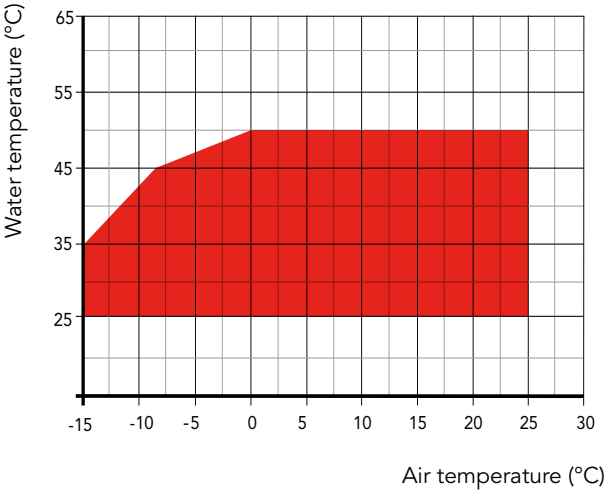
FANS
With external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C.

COOLING CIRCUIT
Provided with a shut-off valve for refrigerant charge, antifreeze sensor, shut-off valves on liquid line certified liquid receiver liquid and humidity sight glass, dehydrating filter, high-pressure safety valve on high pressure refrigerant side and mechanical thermostatic expansion valve, as well as high and low pressure switches and gauges.

ELECTRICAL BOARD
Assembled in compliance with the 60204-1/IEC 204-1 regulations. Inside the electrical board are installed all the components of the control system and the necessary components for the unit start, connected and tested in the factory. It consists of a container suitable for the external installation and to contain all the power and control systems, microprocessor equipped with control panel and display to show the different functions, lock door main switch, electrical anti-condensation thermostat, insulation transformer to supply auxiliary circuits, automatic switches, contactors and transformers for the compressors and fans motors, gauges for combined alarms and remote ON/OFF, terminal board of the spring type control circuits, possibility to interface with BMS systems.

OPERATING RANGE





Standard unit, cooling mode

Standard unit, cooling mode with glycol

Standard unit, heating mode

ACCESSORIES

EGPE N HE Kc		10010	12010	14010	16010	18020	20020	23020	25020
Amperometer	**A**	o	o	o	o	o	o	o	o
Electrical power supply different than standard	**AE**	o	o	o	o	o	o	o	o
Electrofin battery treatment	**BEF**	o	o	o	o	o	o	o	o
Soundproofed compressors cabinet with higher thickness material	**CFU**	o	o	o	o	o	o	o	o
Soundproofing jacket on compressors	**CI**	o	o	o	o	o	o	o	o
Compressors inrush counter	**CS**	o	o	o	o	o	o	o	o
Condensing coil protection grid	**GP**	o	o	o	o	o	o	o	o
Anti-intrusion grid	**GP2**	o	o	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	**GP3**	o	o	o	o	o	o	o	o
Web application	**HiPro.web**	o	o	o	o	o	o	o	o
Visograph interface accessory	**HMI.Pro**	o	o	o	o	o	o	o	o
Victaulic insulation on pump side	**I1**	o	o	o	o	o	o	o	o
Victaulic insulation buffer tank side	**I2**	o	o	o	o	o	o	o	o
RS 485 Serial interface	**IH**	o	o	o	o	o	o	o	o
BACNET Protocol serial interface	**IH-BAC**	o	o	o	o	o	o	o	o
Seawood packing	**IM**	o	o	o	o	o	o	o	o
TCP/IP Protocol serial interface	**IWG**	o	o	o	o	o	o	o	o
Phase monitor	**MF**	o	o	o	o	o	o	o	o
Heating circuit single pump	**P1C**	o	o	o	o	o	o	o	o
Cooling circuit single pump	**P1F**	o	o	o	o	o	o	o	o
Heating circuit high-pressure pump	**P1HC**	o	o	o	o	o	o	o	o
Cooling circuit high-pressure pump	**P1HF**	o	o	o	o	o	o	o	o
Heating circuit double pump	**P2C**	o	o	o	o	o	o	o	o
Cooling circuit double pump	**P2F**	o	o	o	o	o	o	o	o
Heating circuit high-pressure double pump	**P2HC**	o	o	o	o	o	o	o	o
Cooling circuit high-pressure double pump	**P2HF**	o	o	o	o	o	o	o	o
Group 1, Variable flow rate heating circuit pump	**P12CVS**	o	o	o	o	o	o	o	o
Group 1, Variable flow rate cooling circuit pump	**P12FVS**	o	o	o	o	o	o	o	o
Group 2, Variable flow rate heating circuit pump	**P22CVS**	o	o	o	o	o	o	o	o
Group 2, Variable flow rate cooling circuit pump	**P22FVS**	o	o	o	o	o	o	o	o
Rubber-type vibration dampers	**PA**	o	o	o	o	o	o	o	o
Spring-type vibration dampers	**PM**	o	o	o	o	o	o	o	o
Remote display	**PQ**	o	o	o	o	o	o	o	o
Heating circuit twin pump	**PTC**	o	o	o	o	o	o	o	o
Cooling circuit twin pump	**PTF**	o	o	o	o	o	o	o	o
Anti-freeze heater on evaporator	**RA**	o	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	**RD**	o	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	**RF**	o	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	**RH**	o	o	o	o	o	o	o	o
Compressor overload relays	**RL**	o	o	o	o	o	o	o	o
Condensing coil with pre-painted fins	**RM**	o	o	o	o	o	o	o	o
Partial heat recovery	**RP**	o	o	o	o	o	o	o	o
Copper/Copper coil	**RR**	o	o	o	o	o	o	o	o
Electronic thermostatic valve	**TE**	--	--	--	--	--	--	--	--
Voltmeter	**V**	o	o	o	o	o	o	o	o
Brine Version	**VB**	o	o	o	o	o	o	o	o

• Standard, o Optional, -- Not available

EGPE N HE Kc		28020	32020	36020	42020	48020	52020	56020	60020
Amperometer	**A**	o	o	o	o	o	o	o	o
Electrical power supply different than standard	**AE**	o	o	o	o	o	o	o	o
Electrofin battery treatment	**BEF**	o	o	o	o	o	o	o	o
Soundproofed compressors cabinet with higher thickness material	**CFU**	o	o	o	o	o	o	o	o
Soundproofing jacket on compressors	**CI**	o	o	o	o	o	o	o	o
Compressors inrush counter	**CS**	o	o	o	o	o	o	o	o
Condensing coil protection grid	**GP**	o	o	o	o	o	o	o	o
Anti-intrusion grid	**GP2**	o	o	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	**GP3**	o	o	o	o	o	o	o	o
Web application	**HiPro.web**	o	o	o	o	o	o	o	o
Visograph interface accessory	**HMI.Pro**	o	o	o	o	o	o	o	o
Victaulic insulation on pump side	**I1**	o	o	o	o	o	o	o	o
Victaulic insulation buffer tank side	**I2**	o	o	o	o	o	o	o	o
RS 485 Serial interface	**IH**	o	o	o	o	o	o	o	o
BACNET Protocol serial interface	**IH-BAC**	o	o	o	o	o	o	o	o
Seawood packing	**IM**	o	o	o	o	o	o	o	o
TCP/IP Protocol serial interface	**IWG**	o	o	o	o	o	o	o	o
Phase monitor	**MF**	o	o	o	o	o	o	o	o
Heating circuit single pump	**P1C**	o	o	o	o	o	o	o	o
Cooling circuit single pump	**P1F**	o	o	o	o	o	o	o	o
Heating circuit high-pressure pump	**P1HC**	o	o	o	o	o	o	o	o
Cooling circuit high-pressure pump	**P1HF**	o	o	o	o	o	o	o	o
Heating circuit double pump	**P2C**	o	o	o	o	o	o	o	o
Cooling circuit double pump	**P2F**	o	o	o	o	o	o	o	o
Heating circuit high-pressure double pump	**P2HC**	o	o	o	o	o	o	o	o
Cooling circuit high-pressure double pump	**P2HF**	o	o	o	o	o	o	o	o
Group 1, Variable flow rate heating circuit pump	**P12CVS**	o	o	o	o	o	o	o	o
Group 1, Variable flow rate cooling circuit pump	**P12FVS**	o	o	o	o	o	o	o	o
Group 2, Variable flow rate heating circuit pump	**P22CVS**	o	o	o	o	o	o	o	o
Group 2, Variable flow rate cooling circuit pump	**P22FVS**	o	o	o	o	o	o	o	o
Rubber-type vibration dampers	**PA**	o	o	o	o	o	o	o	o
Spring-type vibration dampers	**PM**	o	o	o	o	o	o	o	o
Remote display	**PQ**	o	o	o	o	o	o	o	o
Heating circuit twin pump	**PTC**	o	o	o	o	o	o	o	o
Cooling circuit twin pump	**PTF**	o	o	o	o	o	o	o	o
Anti-freeze heater on evaporator	**RA**	o	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	**RD**	o	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	**RF**	o	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	**RH**	o	o	o	o	o	o	o	o
Compressor overload relays	**RL**	o	o	o	o	o	o	o	o
Condensing coil with pre-painted fins	**RM**	o	o	o	o	o	o	o	o
Partial heat recovery	**RP**	o	o	o	o	o	o	o	o
Copper/Copper coil	**RR**	o	o	o	o	o	o	o	o
Electronic thermostatic valve	**TE**	--	--	--	--	--	--	--	--
Voltmeter	**V**	o	o	o	o	o	o	o	o
Brine Version	**VB**	o	o	o	o	o	o	o	o

• Standard, o Optional, -- Not available

TECHNICAL DATA

EGPE N HE Kc		10010	12010	14010	16010	18020	20020	23020	25020
Cooling mode (1)									
Cooling capacity	kW	107	133	154	181	192	217	237	268
Total input power	kW	34,0	41,5	47,6	56,5	63,5	65,1	74,7	82,2
Input current	A	60,7	72,6	82,3	93,4	108,0	115,0	130,0	143,0
EER		3,15	3,20	3,24	3,20	3,03	3,33	3,17	3,26
Water flow	m^3/h	18,45	22,90	26,47	31,20	33,12	37,26	40,80	46,04
Pressure drops	kPa	20,8	19,4	25,3	26,8	35,0	30,2	36,1	39,7
Heating mode (2)									
Heating capacity	kW	128	159	184	211	226	256	285	316
Total input power	kW	30,9	36,5	42,4	48,0	51,6	56,8	64,6	72,7
Input current	A	56,8	65,6	75,4	84,8	97,0	102,0	117,0	132,0
COP	W/W	4,14	4,36	4,34	4,40	4,38	4,51	4,41	4,35
SCOP	W/W	3,30	3,70	3,60	3,60	3,70	3,90	3,90	3,90
ηs,h	%	129	145	141	141	145	153	153	153
Water flow	m^3/h	22,13	27,46	31,79	36,51	38,99	44,26	49,17	54,65
Pressure drops	kPa	61,4	51,9	41,9	36,8	23,1	29,0	35,1	11,6
Cooling during heating (3)									
Cooling capacity	kW	114	143	165	198	210	232	256	286
Heating capacity	kW	140	175	202	241	255	282	313	349
Total input power	kW	27,2	32,7	37,7	43,6	45,5	50,7	58,3	64,2
Input current	A	49,7	58,2	66,1	75,5	85,4	90,7	104,0	116,0
TER	W/W	9,34	9,72	9,73	10,10	10,20	10,10	9,76	9,89
Water flow (30/35°C)	m^3/h	24,22	30,26	34,80	41,55	43,94	48,66	54,04	60,36
Pressure drops	kPa	72,2	61,9	49,3	46,7	28,6	34,4	41,6	13,9
Water flow (12/7°C)	m^3/h	19,62	24,68	28,36	34,09	36,13	40,00	44,13	49,23
Pressure drops	kPa	23,4	22,6	29,1	32,8	29,3	35,2	42,0	45,2
Circuits	n°	1	1	1	1	2	2	2	2
Compressors	n°	2	2	2	2	4	4	4	4
Refrigerant data R410A									
Refrigerant charge	kg	51	67	68	90	92	124	124	126
Global warming potential (GWP)	-	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	106,5	139,9	142,0	187,9	192,1	258,9	258,9	263,1
Axial fans (4)									
Number	n°	3	3	4	4	6	6	6	8
Air flow	m^3/h	75880	72638	99416	97959	124207	118354	121167	169050
Input power	kW	4,47	4,63	5,88	6,40	7,51	7,34	7,84	10,30
Input current	A	7,45	7,73	9,85	10,60	12,50	12,30	13,00	17,00
Weights									
Transport weight	kg	1379	1525	1733	1914	2298	2548	2549	2993
Operating weight	kg	1388	1536	1744	1930	2315	2566	2566	3011
Dimensions									
Length	mm	3700	3700	4740	4740	3775	3775	3775	4750
Depth	mm	1370	1370	1370	1370	2300	2300	2300	2300
Height	mm	2420	2420	2420	2420	2560	2560	2560	2560
Sound data									
Sound power level (5)	dB(A)	84	87	87	88	89	91	91	91
Sound pressure level (6)	dB(A)	52	55	55	56	57	58	58	59
Power supply									
Voltage/Phase/Frequency	V/ph/Hz	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
Maximum input current									
Maximum peak current	[kW]	52	61	74	83	93	101	111	127
Massima corrente assorbita	[A]	97	112	133	150	171	180	201	230
Massima corrente di spunto	[A]	336	350	378	476	374	382	439	469

(1) Air temperature 35°C, water - in/out temperature: 12/7°C.
(2) Air temperature 7°C, water 30/35°C.
(3) Hot User water 30/35°C. Cold User water 12/7°C.
(4) Outdoor air 7°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

EGPE N HE Kc		28020	32020	36020	42020	48020	52020	56020	60020
Cooling mode [1]									
Cooling capacity	kW	308	347	390	444	522	577	624	665
Total input power	kW	97,5	110,0	128,0	141,0	166,0	183,0	197,0	214,0
Input current	A	168	189	216	239	283	311	334	360
EER		3,16	3,15	3,05	3,15	3,14	3,15	3,17	3,11
Water flow	m^3/h	52,91	59,78	67,09	76,33	89,90	99,33	107,30	114,40
Pressure drops	kPa	40,6	44,1	40,2	33,2	45,7	45,5	52,5	59,0
Heating mode [2]									
Heating capacity	kW	359	399	457	512	594	651	698	736
Total input power	kW	84,2	96,2	109,0	120,0	142,0	158,0	170,0	184,0
Input current	A	151	169	190	208	252	278	298	319
COP	W/W	4,26	4,15	4,19	4,27	4,18	4,12	4,11	4,00
SCOP	W/W	3,80	3,80	3,90	4,10	3,80	-	-	-
ηs,h	%	149	149	153	161	149	-	-	-
Water flow	m^3/h	62,03	69,00	78,96	88,48	102,70	112,60	121,00	128,20
Pressure drops	kPa	14,3	37,1	40,8	38,9	50,1	55,8	59,5	65,7
Cooling during heating [3]									
Cooling capacity	kW	330	370	419	478	561	612	660	705
Heating capacity	kW	405	457	516	587	689	754	814	872
Total input power	kW	76,0	88,6	100,0	111,0	132,0	147,0	160,0	174,0
Input current	A	134	152	171	189	227	250	269	290
TER	W/W	9,67	9,33	9,35	9,59	9,47	9,29	9,21	9,06
Water flow (30/35°C)	m^3/h	69,90	78,90	89,21	101,40	119,10	130,30	140,60	150,70
Pressure drops	kPa	18,1	47,6	51,1	49,6	65,5	75,4	81,4	92,2
Water flow (12/7°C)	m^3/h	56,77	6,74	72,11	82,28	96,54	105,20	113,50	121,30
Pressure drops	kPa	47,5	51,1	47,5	39,4	53,5	52,7	60,6	68,3
Circuits	n°	2	2	2	2	2	2	2	2
Compressors	n°	4	4	4	4	6	6	6	6
Refrigerant data R410A									
Refrigerant charge	kg	130	178	158	204	256	232	304	304
Global warming potential (GWP)	-	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	271,4	371,7	330,0	425,9	534,5	484,4	634,7	634,7
Axial fans [4]									
Number	n°	8	8	10	10	12	14	14	14
Air flow	m^3/h	174079	170611	217902	211242	257751	316773	312232	320282
Input power	kW	11,1	11,8	14,2	14,7	18,1	21,5	23,4	25,2
Input current	A	18,2	19,2	23,1	23,9	29,6	34,9	37,6	40,0
Weights									
Transport weight	kg	3176	3691	3840	4249	4905	5028	5554	5585
Operating weight	kg	3198	3716	3874	4289	4954	5086	5613	5644
Dimensions									
Length	mm	4750	4750	5725	5725	6700	7675	7675	7675
Depth	mm	2300	2300	2300	2300	2300	2300	2300	2300
Height	mm	2560	2560	2560	2560	2560	2560	2560	2560
Sound data									
Sound power level [5]	dB(A)	91	91	92	94	92	95	95	96
Sound pressure level [6]	dB(A)	59	58	60	62	60	62	62	63
Power supply									
Voltage/Phase/Frequency	V/ph/Hz	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
Maximum input current									
Maximum peak current	[kW]	148	168	192	210	252	276	294	312
Massima corrente assorbita	[A]	264	298	341	375	446	490	524	559
Massima corrente di spunto	[A]	509	542	666	701	691	815	850	884

(1) Air temperature 35°C, water - in/out temperature: 12/7°C.
(2) Air temperature 7°C, water 30/35°C.
(3) Hot User water 30/35°C. Cold User water 12/7°C.
(4) Outdoor air 7°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.