L 1045.1

TEST REPORT
39-15801/1/T

Product:	Outdoor Air/Water Heat Pump – split
Type designation	**ERLA14DAW1 + EBVX16S18D6V**

Customer:	Daikin Europe N.V. Zandvoordestraat 300 8400 Oostende BELGIUM
Manufacturer:	Daikin Europe N.V. Zandvoordestraat 300 8400 Oostende BELGIUM

Employee responsible:

Report issue date: 2021-10-22

Distribution list: 1 copy to the Engineering Test Institute (SZU)
1 copy to the Customer

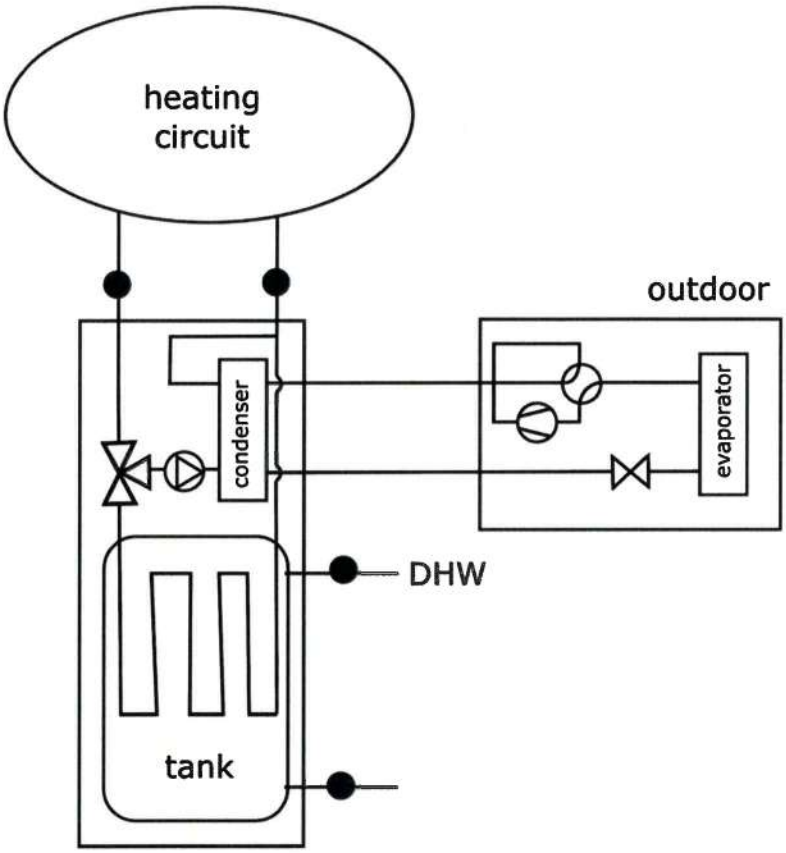
The tests were performed based on these documents:

- PO number 4531983344/54199 of 2021-07-16 (Order reg. no. B-73750 delivered on 2021-07-20)

I. Description of product tested

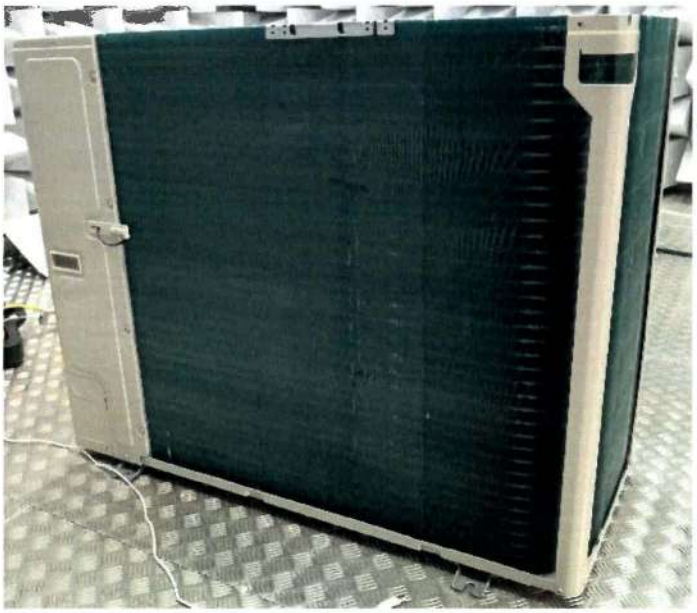
The Heat pump **ERLA14DAW1 + EBVX16S18D6V** supplied by the company **Daikin Europe N.V.** is structurally adapted to operate in air/water system. Device is designed as split, divided to the outdoor unit **ERLA14DAW1**, placed outside on a pedestal and an indoor unit **EBVX16S18D6V**. Outdoor and indoor units are connected by refrigerant pipes and electrical wires. Refrigerant R32 is used with charge 3.8 kg. Power supply is a three-phase. Heat pump is able to work in heating and cooling mode.

Scheme:



Photos:

Outdoor unit **ERLA14DAW1**
– Front view –



Outdoor unit **ERLA14DAW1**
– Back view –

– Compressor label –

– Outdoor unit label –

Outdoor unit **ERLA14DAW1**
– Without cover –

– Label –

Indoor unit **EBVX16S18D6V**
– Without cover –

Indoor unit **EBVX16S18D6V**
– Without cover –

II. Sample tested

Reg. No. SZÚ	Product	Date of submission
0213.21.35130.001-002	Heat pump **ERLA14DAW1 + EBVX16S18D6V**	2021-08-06

The visual inspection, tests and verification were carried out by Ing. Michal Faltýnek – Test engineer at the test station of SZU.

III. Methods, results of tests and verifications

The tests were carried out with the use of validly calibrated measuring and test equipment.

No.	Name:	Inventory number:	Calibration is valid to:	Accuracy see Calibration Sheet number:
1.	Electrical energy meter	E1.1	05/2031	0003/21
2.	Digital watt meter	1.2.1 ENERGIE ANALYZATOR_1	05/2023	K21050743
3.	Flow meter Krohne Optiflux	8.1.1 TECH_K1_V_DN15	04/2025	6015-KL-P0354-21
4.	Barometer	2.4 MAR18_PB	06/2023	4952/2021
5.	Differential pressure gauge	2.2 1_dP	06/2023	KL-P-0060-21
6.	Temperature-humidity meter HF532	2.1.1. K1_VLHKOST_1	04/2026	6036-KL-V0122-21
7.	Temperature-humidity meter HF532	2.1.3 K1_VLHKOST_2	04/2026	6036-KL-V0120-21
8.	Thermometers	2.4 T_K1	05/2022	KL-T-0057-21

Accredited test number:	**T 037***	Test title:	**Tests of leakage, pressure resistance, thermal and technical parameters, combustion efficiency, safety functions**
Testing method		ČSN EN 14511-2:2019, ČSN EN 14511-3:2019, ČSN EN 14511-4:2019, ČSN EN 14825:2020	
Sample tested		Heat pump **ERLA14DAW1 + EBVX16S18D6V**	
Measuring equipment used		See table above	

Place of testing:	at the Engineering Test Institute	☒	at the Manufacturer´s premises	☐	at the Customer´s premises	☐	*other:*

Measured quantity	Unit	Uncertainty of measurement	Evaluation
Liquid			
- temperature difference (dT)	[K]	± 0,15 K	fulfilled
- temperature inlet/outlet	[°C]	± 0,15 K	fulfilled
- volume flow	[m³/s]	± 1 %	fulfilled
- static pressure difference	[kPa]	± 1 kPa (Δp ≤ 20 kPa) nebo ± 5 % (Δp > 20 kPa)	fulfilled
Air			
- dry bulb temperature	[°C]	± 0,2 K	fulfilled
- wet bulb temperature	[°C]	± 0,4 K	fulfilled
- volume flow	[m³/s]	± 5 %	not applied
- static pressure difference	[Pa]	± 5 Pa (Δp ≤ 100 Pa) nebo ± 5 % (Δp > 100 Pa)	not applied
Refrigerant			
- pressure at compressor outlet	[kPa]	± 1 %	not applied
- temperature	[°C]	± 0,5 K	not applied
Concentration (in volume)			
- heat transfer medium	[%]	± 2	not related
Electrical quantities			
- electric power	[W]	± 1 %	fulfilled
- voltage	[V]	± 0,5 %	fulfilled
- current	[A]	± 0,5 %	fulfilled
- electric energy	[kWh]	± 1 %	not applied
Compressor rotational speed	[min⁻¹]	± 0,5 %	not applied
The heating or cooling capacities measured on the liquid side shall be determined within a maximum uncertainty of 5 % independent of the individual uncertainties of measurement including the uncertainties on the properties of fluids.			fulfilled

The following expanded measurement uncertainties have been calculated as the coefficient of measurement uncertainty and the expanded coefficient k = 2, which corresponds to a coverage probability of 95% for normal distribution. The uncertainties do not take into account the effects of sampling and the inhomogeneity of the sample. The standard uncertainty has been determined in accordance with EA 4/02.
If a statement of conformity is given, the binary statement for the simple acceptance rule pursuant to ILAC-G8: 09/2019 shall be used.

a) Rating conditions:

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		1	2
Assessment condition		**Rating conditions**	
Specification of the assessment condition*		**A7/W35**	**A7/W55**
Date of testing		**2021-08-16**	**2021-08-19**
Transient test procedure	YES / NO	NO	NO
Average defrost time of 1 cycle	[min]	–	–
Average time of 1 cycle	[min]	–	–
Calculation time	[min]	70.0	70.0
Output heating water – temperature calculation	[°C]	35.09	55.00
Input heating water – temperature calculation	[°C]	30.07	47.00
Output heating water temperature	[°C]	35.09	55.00
Input heating water temperature	[°C]	30.07	47.00
Air temperature – dry bulb temperature	[°C]	6.97	7.00
Air temperature – wet bulb temperature	[°C]	5.99	6.01
Relative humidity	[%]	87.12	86.97
Barometric pressure	[kPa]	97.928	98.443
Ambient temperature	[°C]	20.91	19.80
Secondary circuit pressure difference	[kPa]	17.900	19.300
Efficiency of the secondary liquid pump	[–]	0.120	0.113
Volume flow rate of heating water	$[m^3 \cdot h^{-1}]$	2.1671	1.3502
Density of heating water	$[kg \cdot m^{-3}]$	994.2	986.3
Specific heat capacity of heating water	$[kJ \cdot kg^{-1} \cdot K^{-1}]$	4.175	4.179
Voltage	[V]	398.52	399.27
Total current	[A]	12.09	18.41
Overall power input	[kW]	2.476	3.995
Capacity correction of sec. liquid pump	[W]	34.596	28.600
Power input correction of sec. liquid pump	[W]	45.37	35.84
Heating capacity – heating water	[kW]	12.554	12.370
Corrected heating capacity – heating water	**[kW]**	**12.519**	**12.341**
Uncertainty of corrected heating capacity	[kW]	± 0.213	± 0.136
Effective electric power input	**[kW]**	**2.430**	**3.959**
COP	**[–]**	**5.151**	**3.117**
Uncertainty of COP	[–]	± 0.086	± 0.034
Control settings	**[Hz]**	**57.5**	**64**
Circulation pump settings – heating water	[–]	–	–

*Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		3	4
Assessment condition		**Rating conditions**	
Specification of the assessment condition*		**A35/W7**	**A20/W8.8**
Date of testing		**2021-10-06**	**2021-10-06**
Transient test procedure	YES / NO	NO	NO
Average defrost time of 1 cycle	[min]	–	–
Average time of 1 cycle	[min]	–	–
Calculation time	[min]	35.0	35.0
Output cooling water – temperature calculation	[°C]	7.01	9.01
Input cooling water – temperature calculation	[°C]	11.92	13.79
Output cooling water temperature	[°C]	7.01	9.01
Input cooling water temperature	[°C]	11.92	13.79
Air temperature - dry bulb temperature	[°C]	35.01	20.01
Air temperature - wet bulb temperature	[°C]	28.42	18.28
Relative humidity	[%]	61.20	84.96
Barometric pressure	[kPa]	98.873	98.780
Ambient temperature	[°C]	19.96	19.94
Secondary circuit pressure difference	[kPa]	11.601	18.305
Efficiency of the secondary liquid pump	[–]	0.202	0.177
Volume flow rate of cooling water	$[m^3 \cdot h^{-1}]$	2.2458	1.0019
Density of cooling water	$[kg \cdot m^{-3}]$	999.8	999.7
Specific heat capacity of cooling water	$[kJ \cdot kg^{-1} \cdot K^{-1}]$	4.203	4.198
Voltage	[V]	401.08	401.16
Total current	[A]	19.40	6.27
Overall power input	[kW]	4.246	0.715
Capacity correction of sec. liquid pump	[W]	28.60	23.68
Power input correction of sec. liquid pump	[W]	35.83	28.78
Cooling capacity - cooling water	[kW]	12.871	5.589
Corrected cooling capacity	**[kW]**	**12.900**	**5.613**
Uncertainty of corrected cooling capacity	[kW]	± 0.224	± 0.101
Effective electric power input	**[kW]**	**4.210**	**0.686**
EER	**[–]**	**3.064**	**8.179**
Uncertainty of EER	[–]	± 0.053	± 0.154
Control settings	**[Hz]**	**75**	**24**
Circulation pump settings – cooling water	[–]	–	–

*Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

b) Seasonal performance tests and SCOP calculation – Low temperature application for reference heating seasons:

„A" = average (reference water temperature 35 °C, reference design conditions for heating Tdesignh = -10 °C)
„W" = warmer (reference water temperature 35 °C, reference design conditions for heating Tdesignh = +2 °C)
„C" = colder (reference water temperature 35 °C, reference design conditions for heating Tdesignh = -22 °C)

Model	Heat pump **ERLA14DW1 + EBVXS18D6V**
Design	Air / Water –split

Conditions specification according to ČSN EN 14825:2020	Temperature application	**Low** (reference water temperature 35 °C)
	Reference heating season	**A, W, C**
	Outlet water temperature - indoor heat exchanger	Variable
	Compressor speed control	Variable
	Water flow rate – primary circuit	–
	Water flow rate – secondary circuit	Variable

Seasonal space heating energy efficiency	Heating	Average	**η_s / A**	**198.7**	%
		Warmer	η_s / W	–	%
		Colder	η_s / C	–	%

Seasonal efficiency according to ČSN EN 14825:2020	Heating	Average	**SCOP / A**	**5.04**	–
		Warmer	SCOP / W	–	–
		Colder	SCOP / C	–	–

Function	Cooling			Yes	
	Heating	Yes	Reference heating season: Average	Yes	
			Warmer (if designated)	Yes	
			Colder (if designated)	Yes	

Full heating load	Cooling		$P_{designc}$	–		kW
	Heating	Average	**$P_{designh}$**	**11.00**	(Declared)	kW
		Warmer	**$P_{designh}$**	**11.00**	(Declared)	kW
		Colder	**$P_{designh}$**	–		kW

Bivalent temperatures	Heating	Average	$T_{bivalent}$	-7	°C
		Warmer	$T_{bivalent}$	2	°C
		Colder	$T_{bivalent}$	–	°C

Operation limit temperatures	Heating	Average	TOL	-10	°C
		Warmer	TOL	2	°C
		Colder	TOL	–	°C

Seasonal power consumption according to ČSN EN 14825:2020	Cooling		Q_{CE}	–	kWh
	Heating	Average	Q_{HE}/A	4506	kWh
		Warmer	Q_{HE}/W	–	kWh
		Colder	Q_{HE}/C	–	kWh

Modes other than „active mode"	Off mode	P_{OFF}	21.0	W
	Thermostat off mode	P_{TO}	20.7	W
	Standby mode	P_{SB}	21.0	W
	Crankcase heater mode	P_{CK}	0.0	W

(Declared): The technical data were declared by the Manufacturer.

Calculation of SCOP according to ČSN EN 14825:2020:

Number of hours used for calculation of reference SCOP (Annex B – Table B.2, B.3)

- For reversible heat pumps and reference heating season „A" = average

H_{HE}	2066	[h]
H_{TO}	178	[h]
H_{SB}	0	[h]
H_{CK}	178	[h]
H_{OFF}	0	[h]

Measured data:

P_{TO}	0.0207	[kW]
P_{SB}	0.0210	[kW]
P_{CK}	0.0000	[kW]
P_{OFF}	0.0210	[kW]
$P_{designh}$	11.00	[kW]
$SCOP_{ON}$	5.05	[–]

Coefficient and correction:

F(1)	3	[%]
F(2)	0	[%]
CC	2.5	[–]

Calculation of SCOP:

7.3 Calculation of the reference annual heating demand (Q_H)

$Q_H = P_{designh} \cdot H_{HE}$ [kWh]

$Q_H = 11 \cdot 2066 = 22726$ [kWh]

7.4 Calculation of the annual electricity consumption (Q_{HE})

$Q_{HE} = Q_H / SCOP_{on} + H_{TO} \cdot P_{TO} + H_{SB} \cdot P_{SB} + H_{CK} \cdot P_{CK} + H_{OFF} \cdot P_{OFF}$ [kWh]

$Q_{HE} = 22726 / 5.05 + 178 \cdot 0.0207 + 0 \cdot 0.021 + 178 \cdot 0 + 0 \cdot 0.021 = 4506$ [kWh]

7.2 General formula for calculation of reference SCOP

$SCOP = Q_H / Q_{HE}$ [–]

$SCOP = 22726 / 4506 = 5.04$ [–]

7.1 Calculation of the seasonal space heating efficiency η_s

$\Sigma F(i) = F(1) + F(2)$ [–]

$\Sigma F = 0.03 + 0 = 0.03$ [–]

$\eta_s = 1 / CC \cdot SCOP - \Sigma F(i)$ [–]

$\eta_s (A) = (1 / 2.5) \cdot 5.04 - 0.03 = 1.987$ [–]

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		**5**	**6**
Temperature level		Low temperature application (reference water temperature 35 °C)	
Reference heating season		„A" = average ($T_{designh}$ = -10 °C)	
Assessment condition		**A, Tbiv (F)**	**B**
Specification of the assessment condition*		**A-7/W34**	**A2/W30**
Date of testing		**2021-08-20**	**2021-01-25**
Transient test procedure	YES / NO	YES	NO
Average defrost time of 1 cycle	[min]	7.1	–
Average time of 1 cycle	[min]	102.5	–
Calculation time	[min]	102.5	70.0
Output heating water – temperature calculation	[°C]	33.32	29.95
Input heating water – temperature calculation	[°C]	28.95	24.94
Output heating water temperature	[°C]	34.04	29.95
Input heating water temperature	[°C]	29.05	24.94
Air temperature – dry bulb temperature	[°C]	-7.05	2.00
Air temperature – wet bulb temperature	[°C]	-7.99	1.01
Relative humidity	[%]	76.44	83.98
Barometric pressure	[kPa]	98.613	97.708
Ambient temperature	[°C]	20.40	20.47
Secondary circuit pressure difference	[kPa]	18.700	21.494
Efficiency of the secondary liquid pump	[–]	0.176	0.194
Volume flow rate of heating water	[$m^3 \cdot h^{-1}$]	1.9193	1.0952
Density of heating water	[$kg \cdot m^{-3}$]	994.8	995.8
Specific heat capacity of heating water	[$kJ \cdot kg^{-1} \cdot K^{-1}$]	4.175	4.176
Voltage	[V]	399.45	401.67
Total current	[A]	14.69	7.83
Overall power input	[kW]	3.101	1.323
Capacity correction of sec. liquid pump	[W]	23.257	27.149
Power input correction of sec. liquid pump	[W]	28.29	33.69
Heating capacity – heating water	[kW]	9.718	6.329
Corrected heating capacity – heating water	**[kW]**	**9.685**	**6.302**
Uncertainty of corrected heating capacity	[kW]	± 0.189	± 0.110
Effective electric power input	**[kW]**	**3.058**	**1.290**
COP	**[–]**	**3.167**	**4.886**
Uncertainty of COP	[–]	± 0.062	± 0.087
Control settings	**[Hz]**	**79**	**32**
Circulation pump settings – heating water	[–]	–	–

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		7	8	9
Temperature level		Low temperature application (reference water temperature 35 °C)		
Reference heating season		„A" = average ($T_{designh}$ = -10 °C)		
Assessment condition		C	D	TOL (E)
Specification of the assessment condition*		A7/W28.01	A12/W27.48	A-10/W35
Date of testing		2021-08-20	2021-08-23	2021-08-23
Transient test procedure	YES / NO	NO	NO	YES
Average defrost time of 1 cycle	[min]	–	–	6.8
Average time of 1 cycle	[min]	–	–	127.6
Calculation time	[min]	70.0	70.0	127.6
Output heating water – temperature calculation	[°C]	28.00	27.50	34.57
Input heating water – temperature calculation	[°C]	23.00	22.50	30.00
Output heating water temperature	[°C]	28.00	27.50	35.04
Input heating water temperature	[°C]	23.00	22.50	30.04
Air temperature – dry bulb temperature	[°C]	7.02	12.02	-10.03
Air temperature – wet bulb temperature	[°C]	6.01	11.01	-10.90
Relative humidity	[%]	86.76	88.87	73.74
Barometric pressure	[kPa]	98.576	9.846	98.625
Ambient temperature	[°C]	20.35	20.39	20.47
Secondary circuit pressure difference	[kPa]	18.333	17.536	17.316
Efficiency of the secondary liquid pump	[–]	0.166	0.172	0.213
Volume flow rate of heating water	$[m^3 \cdot h^{-1}]$	0.8273	0.9633	1.7158
Density of heating water	$[kg \cdot m^{-3}]$	996.3	996.4	994.4
Specific heat capacity of heating water	$[kJ \cdot kg^{-1} \cdot K^{-1}]$	4.177	4.177	4.175
Voltage	[V]	398.81	401.31	400.38
Total current	[A]	6.64	6.23	15.10
Overall power input	[kW]	0.723	0.672	3.217
Capacity correction of sec. liquid pump	[W]	21.138	22.567	29.959
Power input correction of sec. liquid pump	[W]	25.35	27.26	37.95
Heating capacity – heating water	[kW]	4.779	5.574	9.213
Corrected heating capacity – heating water	**[kW]**	**4.758**	**5.552**	**9.183**
Uncertainty of corrected heating capacity	[kW]	± 0.084	± 0.097	± 0.169
Effective electric power input	**[kW]**	**0.698**	**0.645**	**3.179**
COP	**[–]**	**6.817**	**8.613**	**2.889**
Uncertainty of COP	[–]	± 0.124	± 0.157	± 0.053
Control settings	**[Hz]**	**21.5**	**21.5**	**79**
Circulation pump settings – heating water	[–]	–	-	–

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		**10**
Temperature level		Low temperature application (reference water temperature 35 °C)
Reference heating season		„W" = warmer ($T_{designh}$ = 2°C)
Assessment condition		**B, TOL (E),Tbiv (F)**
Specification of the assessment condition*		**A2/W35**
Date of testing		**2021-08-26**
Transient test procedure	YES / NO	YES
Average defrost time of 1 cycle	[min]	7.2
Average time of 1 cycle	[min]	54.1
Calculation time	[min]	162.4
Output heating water – temperature calculation	[°C]	34.08
Input heating water – temperature calculation	[°C]	29.98
Output heating water temperature	[°C]	35.25
Input heating water temperature	[°C]	30.09
Air temperature – dry bulb temperature	[°C]	1.90
Air temperature – wet bulb temperature	[°C]	0.90
Relative humidity	[%]	83.79
Barometric pressure	[kPa]	9.780
Ambient temperature	[°C]	20.20
Secondary circuit pressure difference	[kPa]	19.996
Efficiency of the secondary liquid pump	[–]	0.258
Volume flow rate of heating water	[$m^3 \cdot h^{-1}$]	2.3747
Density of heating water	[$kg \cdot m^{-3}$]	994.5
Specific heat capacity of heating water	[$kJ \cdot kg^{-1} \cdot K^{-1}$]	4.175
Voltage	[V]	399.93
Total current	[A]	14.61
Overall power input	[kW]	3.081
Capacity correction of sec. liquid pump	[W]	37.930
Power input correction of sec. liquid pump	[W]	51.08
Heating capacity – heating water	[kW]	11.323
Corrected heating capacity – heating water	**[kW]**	**11.285**
Uncertainty of corrected heating capacity	[kW]	± 0.233
Effective electric power input	**[kW]**	**3.030**
COP	**[–]**	**3.724**
Uncertainty of COP	[–]	± 0.077
Control settings	**[Hz]**	**79**
Circulation pump settings – heating water	[–]	–

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Data for SCOP calculation (Heat pump **ERLA14DAW1 + EBVX16S18D6V**)
- Low temperature application (reference water temperature 35 °C)
- Reference heating season „A" – average

	Outdoor heat exchanger	Indoor heat exchanger	Part load ratio	Part load	DC Declared capacity	COPd at declared capacity	Cdh degradation coefficient	CR	COPbin (Tj)	Eff. power input of compressor off state
	Outdoor air inlet	Outlet water temperature								
	[°C]	[°C]	[%]	[kW]	[kW]	[–]	[–]	[–]	[–]	[kW]
A	-7	34.00	88.46	9.73	9.695	3.155	0.900	1.00	3.155	–
B	2	30.00	53.85	5.92	6.302	4.886	0.900	1.00	4.886	–
C	7	28.00	34.62	3.81	4.758	6.817	0.970	0.80	6.767	0.0207
D	12	27.48	15.38	1.69	5.552	8.613	0.968	0.31	8.025	0.0207
TOL (E)	-10	35.00	100.00	11.00	9.183	2.889	0.900	1.00	2.889	–
Tbiv (F)	-7	34.00	88.46	9.73	9.685	3.167	0.900	1.00	3.167	–

Adaption of water temperature – according to ČSN EN 14825:2020, Annex F

- Low temperature application (reference water temperature 35 °C)
- Reference season „A"– average
- Condition D
- Variable water flow rate – secondary circuit

General formulas and derivation:

$t_{outlet,\,average} = t_{inlet,\,capacity\,test} + (t_{outlet,\,capacity\,test} - t_{inlet,\,capacity\,test}) \cdot CR$ [°C]

$t_{outlet,\,average} = t_{inlet,\,capacity\,test} + (\Delta t) \cdot CR$ [°C]

$t_{outlet,\,average} = t_{outlet,\,capacity\,test} - \Delta t + \Delta t \cdot CR$ [°C]

$t_{outlet,\,capacity\,test} = t_{outlet,\,average} + \Delta t - \Delta t \cdot CR$ [°C]

For variable flow:

$\Delta t = 5$

$CR \cdot \Delta t$ = Part load / Declared capacity · 5

$t_{outlet,\,capacity\,test,\,variable\,flow} = t_{outlet,\,average} + 5$ - Part load / Declared capacity · 5

Measured data:

$t_{outlet,\,average}$	24.00	[°C]
Declared capacity	5.552	[kW]
Declared capacity $_{standard\,rating\,condition\,A7/W35}$	-	[kW]
Part load	1.69	[kW]

Calculation of water temperature

$t_{outlet,\,capacity\,test,\,variable\,flow} = = 24 + 5 - 1.69 / 5.552 \cdot 5 = 27.48$ [°C]

Calculation SCOP, $SCOP_{on}$, $SCOP_{net}$
(Heat pump **ERLA14DAW1 + EBVX16S18D6V**)

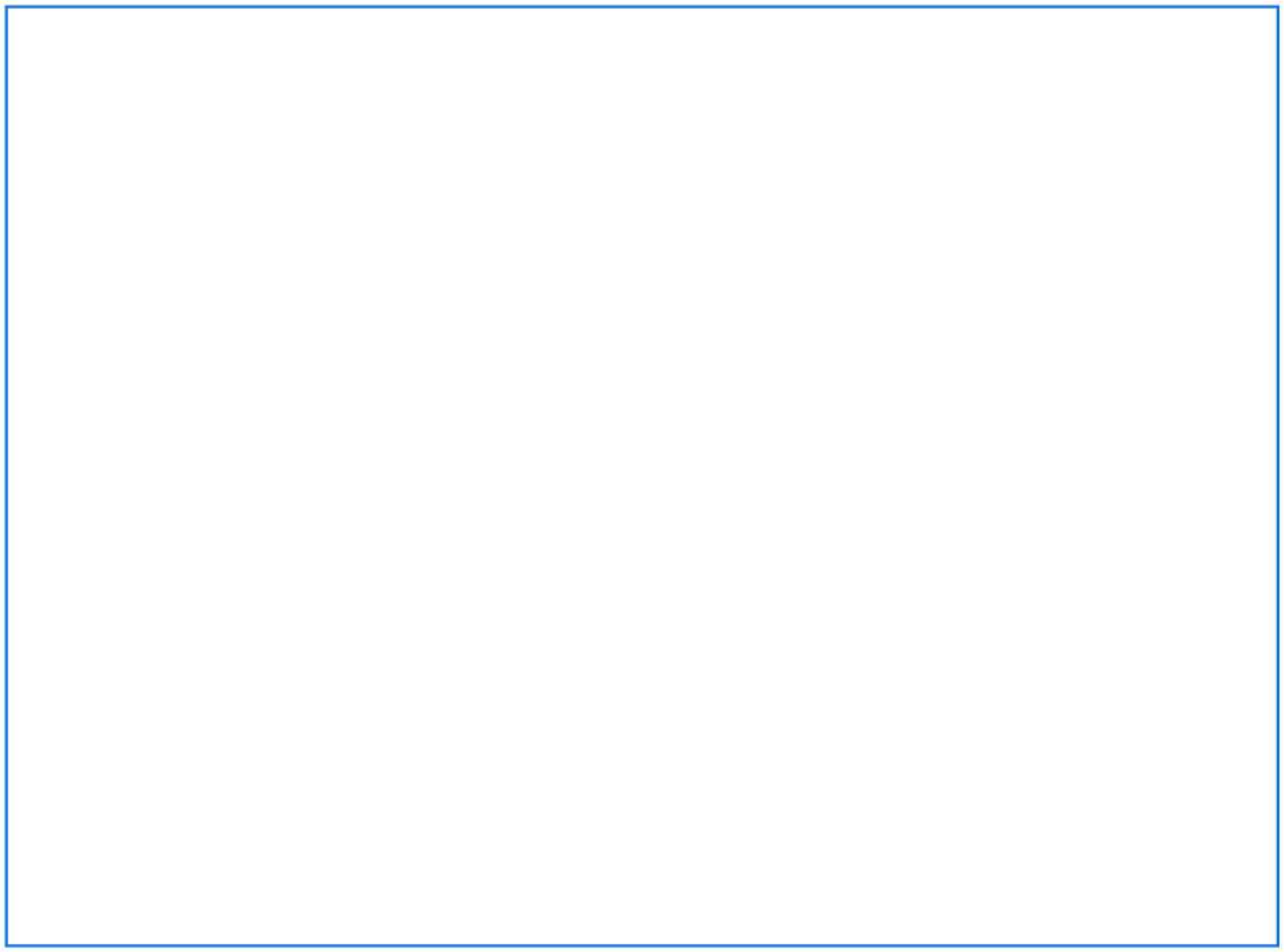
- Low temperature application (reference water temperature 35 °C)
- Reference heating season „A" – average

	Bin	Outdoor temp. (dry bulb)	Hours	Part load ratio	Heat load	Capacity of HP	Heat load covered by heat pump	Resistive heat elbu (Tj)	Annual resistive heat	COPbin (Tj)	Annual heating demand	Annual power input including electric back up heating	Net annual heating capacity	Net annual power input without electric back up heating
	j	T_j	h_j		$P_{h(Tj)}$			$elbu_{(Tj)}$	h_j x $elbu_{(Tj)}$	COPbin (Tj)	h_j x $P_{h(Tj)}$		$h_j \times (P_{h(Tj)} - elbu_{(Tj)})$	
	[–]	[°C]	[h]	[%]	[kW]	[kW]	[kW]	[kW]	[kWh]	[–]	[kWh]	[kWh]	[kWh]	[kWh]
TOL(E)	**21**	**-10**	**1**	**100.00**	**11.00**	**9.18**	**9.18**	**1.82**	**1.82**	**2.89**	**11**	**5**	**9**	**3**
	22	-9	25	96.15	10.58	9.35	9.35	1.22	30.58	2.98	264	109	234	79
	23	-8	23	92.31	10.15	9.52	9.52	0.63	14.48	3.07	234	86	219	71
A, Tbiv(F)	**24**	**-7**	**24**	**88.46**	**9.73**	**9.70**	**9.70**	**0.00**	**0.00**	**3.16**	**234**	**74**	**234**	**74**
	25	-6	27	84.62	9.31	9.32	9.31	0.00	0.00	3.35	251	75	251	75
	26	-5	68	80.77	8.88	8.94	8.88	0.00	0.00	3.54	604	171	604	171
	27	-4	91	76.92	8.46	8.56	8.46	0.00	0.00	3.73	770	206	770	206
	28	-3	89	73.08	8.04	8.19	8.04	0.00	0.00	3.92	715	182	715	182
	29	-2	165	69.23	7.62	7.81	7.62	0.00	0.00	4.12	1257	305	1257	305
	30	-1	173	65.38	7.19	7.43	7.19	0.00	0.00	4.31	1244	289	1244	289
	31	0	240	61.54	6.77	7.06	6.77	0.00	0.00	4.50	1625	361	1625	361
	32	1	280	57.69	6.35	6.68	6.35	0.00	0.00	4.69	1777	379	1777	379
B	**33**	**2**	**320**	**53.85**	**5.92**	**6.30**	**5.92**	**0.00**	**0.00**	**4.89**	**1895**	**388**	**1895**	**388**
	34	3	357	50.00	5.50	5.99	5.50	0.00	0.00	5.26	1964	373	1964	373
	35	4	356	46.15	5.08	5.68	5.08	0.00	0.00	5.64	1807	321	1807	321
	36	5	303	42.31	4.65	5.38	4.65	0.00	0.00	6.01	1410	234	1410	234
	37	6	330	38.46	4.23	5.07	4.23	0.00	0.00	6.39	1396	218	1396	218
C	**38**	**7**	**326**	**34.62**	**3.81**	**4.76**	**3.81**	**0.00**	**0.00**	**6.77**	**1241**	**183**	**1241**	**183**
	39	8	348	30.77	3.38	4.92	3.38	0.00	0.00	7.02	1178	168	1178	168
	40	9	335	26.92	2.96	5.08	2.96	0.00	0.00	7.27	992	136	992	136
	41	10	315	23.08	2.54	5.23	2.54	0.00	0.00	7.52	800	106	800	106
	42	11	215	19.23	2.12	5.39	2.12	0.00	0.00	7.77	455	59	455	59
D	**43**	**12**	**169**	**15.38**	**1.69**	**5.55**	**1.69**	**0.00**	**0.00**	**8.03**	**286**	**36**	**286**	**36**
	44	13	151	11.54	1.27	5.71	1.27	0.00	0.00	8.28	192	23	192	23
	45	14	105	7.69	0.85	5.87	0.85	0.00	0.00	8.53	89	10	89	10
	46	15	74	3.85	0.42	6.03	0.42	0.00	0.00	8.78	31	4	31	4
		Σ	4910							Σ	22722	4502	22675	4455

SCOPon	5.05	SCOPnet	5.09
		SCOP	**5.04**

Power diagram (Heat pump **ERLA14DAW1 + EBVX16S18D6V**)

- Low temperature application (reference water temperature 35 °C)
- Reference heating season „A“ – average



c) Seasonal performance tests and SCOP calculation – Medium temperature application for reference heating seasons:

„A" = average (reference water temperature 55 °C, reference design conditions for heating Tdesignh = -10 °C)
„W" = warmer (reference water temperature 55 °C, reference design conditions for heating Tdesignh = +2 °C)
„C" = colder (reference water temperature 55 °C, reference design conditions for heating Tdesignh = -22 °C)

Model	Heat pump **ERLA14DAW1 + EBVX16S18D6V**
Design	Air / Water – split

Conditions specification according to ČSN EN 14825:2020	Temperature application	**Medium** (reference water temperature 55 °C)
	Reference heating season	**A, W, C**
	Outlet water temperature - indoor heat exchanger	Variable
	Compressor speed control	Variable
	Water flow rate – primary circuit	–
	Water flow rate – secondary circuit	Variable

Seasonal space heating energy efficiency	Heating	Average	**η_s / A**	**143.4**	%
		Warmer	η_s / W	–	%
		Colder	η_s / C	–	%

Seasonal efficiency according to ČSN EN 14825:2020	Heating	Average	**SCOP / A**	**3.66**	–
		Warmer	SCOP / W	–	–
		Colder	SCOP / C	–	–

Function	Cooling			Yes	
	Heating	Yes	Reference heating season: Average	Yes	
			Warmer (if designated)	Yes	
			Colder (if designated)	Yes	

Full heating load	Cooling		$P_{designc}$	–		kW
	Heating	Average	$P_{designh}$	**11.00**	(Declared)	kW
		Warmer	$P_{designh}$	**12.10**	(Declared)	kW
		Colder	$P_{designh}$	–		kW

Bivalent temperatures	Heating	Average	$T_{bivalent}$	-5 °C
		Warmer	$T_{bivalent}$	4 °C
		Colder	$T_{bivalent}$	– °C

Operation limit temperatures	Heating	Average	TOL	-10 °C
		Warmer	TOL	2 °C
		Colder	TOL	– °C

Seasonal power consumption according to ČSN EN 14825:2020	Cooling		Q_{CE}	–	kWh
	Heating	Average	Q_{HE}/A	6207	kWh
		Warmer	Q_{HE}/W	–	kWh
		Colder	Q_{HE}/C	–	kWh

Modes other than „active mode"	Off mode	P_{OFF}	21.0	W
	Thermostat off mode	P_{TO}	20.7	W
	Standby mode	P_{SB}	21.0	W
	Crankcase heater mode	P_{CK}	0.0	W

(Declared): The technical data were declared by the Manufacturer.

Calculation of SCOP according to ČSN EN 14825:2020:

Number of hours used for calculation of reference SCOP (Annex B – Table B.2, B.3)
- For reversible heat pumps and reference heating season „A" = average

H_{HE}	2066	[h]
H_{TO}	178	[h]
H_{SB}	0	[h]
H_{CK}	178	[h]
H_{OFF}	0	[h]

Measured data:

P_{TO}	0.0207	[kW]
P_{SB}	0.0210	[kW]
P_{CK}	0.0000	[kW]
P_{OFF}	0.0210	[kW]
$P_{designh}$	11.00	[kW]
$SCOP_{ON}$	3.66	[–]

Coefficient and correction:

F(1)	3	[%]
F(2)	0	[%]
CC	2.5	[–]

Calculation of SCOP:

7.3 Calculation of the reference annual heating demand (Q_H)

$Q_H = P_{designh} \cdot H_{HE}$ [kWh]

$Q_H = 11 \cdot 2066 = 22726$ [kWh]

7.4 Calculation of the annual electricity consumption (Q_{HE})

$Q_{HE} = Q_H / SCOP_{on} + H_{TO} \cdot P_{TO} + H_{SB} \cdot P_{SB} + H_{CK} \cdot P_{CK} + H_{OFF} \cdot P_{OFF}$ [kWh]

$Q_{HE} = 22726 / 3.66 + 178 \cdot 0.0207 + 0 \cdot 0.021 + 178 \cdot 0 + 0 \cdot 0.021 = 6207$ [kWh]

7.2 General formula for calculation of reference SCOP

$SCOP = Q_H / Q_{HE}$ [–]

$SCOP = 22726 / 6207 = 3.66$ [–]

7.1 Calculation of the seasonal space heating efficiency η_s

$\Sigma F(i) = F(1) + F(2)$ [–]

$\Sigma F = 0.03 + 0 = 0.03$ [–]

$\eta_s = 1 / CC \cdot SCOP - \Sigma F(i)$ [–]

$\eta_s (A) = (1 / 2.5) \cdot 3.66 – 0.03 = 1.434$ [–]

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		11	12	13
Temperature level		Medium temperature application (reference water temperature 55 °C)		
Reference heating season		„A" = average ($T_{designh}$ = -10 °C)		
Assessment condition		A	B	C
Specification of the assessment condition*		A-7/W52	A2/W42	A7/W36
Date of testing		2021-08-24	2021-10-05	2021-08-18
Transient test procedure	YES / NO	YES	NO	NO
Average defrost time of 1 cycle	[min]	7.4	–	–
Average time of 1 cycle	[min]	156.9	–	–
Calculation time	[min]	156.9	70.0	70.0
Output heating water – temperature calculation	[°C]	51.29	41.95	36.05
Input heating water – temperature calculation	[°C]	44.02	33.95	30.00
Output heating water temperature	[°C]	52.02	41.95	36.05
Input heating water temperature	[°C]	44.05	33.95	30.00
Air temperature – dry bulb temperature	[°C]	-7.03	1.99	7.02
Air temperature – wet bulb temperature	[°C]	-7.91	1.07	6.01
Relative humidity	[%]	77.66	85.11	86.69
Barometric pressure	[kPa]	9.913	98.140	98.392
Ambient temperature	[°C]	20.29	20.03	20.50
Secondary circuit pressure difference	[kPa]	18.014	19.946	19.100
Efficiency of the secondary liquid pump	[–]	0.183	0.162	0.114
Volume flow rate of heating water	[$m^3 \cdot h^{-1}$]	1.1168	0.6940	0.6476
Density of heating water	[$kg \cdot m^{-3}$]	988.0	991.9	993.9
Specific heat capacity of heating water	[$kJ \cdot kg^{-1} \cdot K^{-1}$]	4.178	4.175	4.175
Voltage	[V]	401.43	400.79	401.91
Total current	[A]	19.49	9.67	7.69
Overall power input	[kW]	4.292	1.809	0.884
Capacity correction of sec. liquid pump	[W]	24.883	19.952	18.532
Power input correction of sec. liquid pump	[W]	30.44	23.80	21.97
Heating capacity – heating water	[kW]	9.411	6.388	4.515
Corrected heating capacity – heating water	**[kW]**	**9.386**	**6.368**	**4.497**
Uncertainty of corrected heating capacity	[kW]	± 0.113	± 0.073	± 0.067
Effective electric power input	**[kW]**	**4.262**	**1.785**	**0.862**
COP	**[–]**	**2.202**	**3.568**	**5.219**
Uncertainty of COP	[–]	± 0.027	± 0.042	± 0.075
Control settings	**[Hz]**	**79**	**35**	**21.5**
Circulation pump settings – heating water	[–]	-	–	–

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		**14**	**15**	**16**
Temperature level		Medium temperature application (reference water temperature 55 °C)		
Reference heating season		„A" = average ($T_{designh}$ = -10 °C)		
Assessment condition		**D**	**TOL (E)**	**Tbiv (F)**
Specification of the assessment condition*		**A12/W35.48**	**A-10/W55**	**A-5/W49.8**
Date of testing		**2021-08-27**	**2021-09-01**	**2021-10-01**
Transient test procedure	YES / NO	NO	YES	YES
Average defrost time of 1 cycle	[min]	–	7.5	7.7
Average time of 1 cycle	[min]	–	216.1	123.7
Calculation time	[min]	70.0	216.1	123.7
Output heating water – temperature calculation	[°C]	35.22	54.39	48.88
Input heating water – temperature calculation	[°C]	28.18	46.92	41.82
Output heating water temperature	[°C]	35.22	54.90	49.78
Input heating water temperature	[°C]	28.18	46.91	41.84
Air temperature – dry bulb temperature	[°C]	12.00	-10.01	-5.05
Air temperature – wet bulb temperature	[°C]	11.01	-10.73	-5.86
Relative humidity	[%]	89.04	77.99	81.81
Barometric pressure	[kPa]	98.094	99.194	99.381
Ambient temperature	[°C]	19.70	20.30	20.05
Secondary circuit pressure difference	[kPa]	19.769	22.302	20.334
Efficiency of the secondary liquid pump	[–]	0.160	0.177	0.192
Volume flow rate of heating water	$[m^3 \cdot h^{-1}]$	0.6744	0.8194	1.1179
Density of heating water	$[kg \cdot m^{-3}]$	994.3	986.6	989.0
Specific heat capacity of heating water	$[kJ \cdot kg^{-1} \cdot K^{-1}]$	4.175	4.179	4.177
Voltage	[V]	400.88	401.23	399.25
Total current	[A]	7.34	1.23	17.83
Overall power input	[kW]	0.860	3.846	3.825
Capacity correction of sec. liquid pump	[W]	19.475	23.580	26.52
Power input correction of sec. liquid pump	[W]	23.18	28.64	32.78
Heating capacity – heating water	[kW]	5.389	7.032	9.219
Corrected heating capacity – heating water	**[kW]**	**5.369**	**7.008**	**9.193**
Uncertainty of corrected heating capacity	[kW]	± 0.070	± 0.085	± 0.113
Effective electric power input	**[kW]**	**0.836**	**3.817**	**3.792**
COP	**[–]**	**6.419**	**1.836**	**2.424**
Uncertainty of COP	[–]	± 0.087	± 0.022	± 0.030
Control settings	**[Hz]**	**22**	**70**	**75**
Circulation pump settings – heating water	[–]	–	–	–

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Test results for single part load conditions

Measurement results: Heat pump **ERLA14DAW1 + EBVX16S18D6V**

Test number		**17**
Temperature level		Medium temperature application (reference water temperature 55 °C)
Reference heating season		„W" = warmer ($T_{designh}$ = 2°C)
Assessment condition		**Tbiv (F)**
Specification of the assessment condition*		**A4/W51.4**
Date of testing		**2021-10-08**
Transient test procedure	YES / NO	NO
Average defrost time of 1 cycle	[min]	–
Average time of 1 cycle	[min]	–
Calculation time	[min]	70.0
Output heating water – temperature calculation	[°C]	51.35
Input heating water – temperature calculation	[°C]	43.35
Output heating water temperature	[°C]	51.35
Input heating water temperature	[°C]	43.35
Air temperature – dry bulb temperature	[°C]	3.97
Air temperature – wet bulb temperature	[°C]	3.00
Relative humidity	[%]	85.43
Barometric pressure	[kPa]	9.969
Ambient temperature	[°C]	20.01
Secondary circuit pressure difference	[kPa]	25.538
Efficiency of the secondary liquid pump	[–]	0.212
Volume flow rate of heating water	[$m^3 \cdot h^{-1}$]	1.1523
Density of heating water	[$kg \cdot m^{-3}$]	988.0
Specific heat capacity of heating water	[$kJ \cdot kg^{-1} \cdot K^{-1}$]	4.178
Voltage	[V]	402.24
Total current	[A]	15.93
Overall power input	[kW]	3.392
Capacity correction of sec. liquid pump	[W]	30.369
Power input correction of sec. liquid pump	[W]	38.54
Heating capacity – heating water	[kW]	10.566
Corrected heating capacity – heating water	**[kW]**	**10.536**
Uncertainty of corrected heating capacity	[kW]	± 0.118
Effective electric power input	**[kW]**	**3.353**
COP	**[–]**	**3.142**
Uncertainty of COP	[–]	± 0.036
Control settings	**[Hz]**	**57.5**
Circulation pump settings – heating water	[–]	-

* Comment to abbreviated marking: e.g. A7/W35
A (air) 7 (input air, dry-bulb temperature in °C) / W (water), 35 (output heating water temperature in °C)

Data for SCOP calculation (Heat pump **ERLA14DAW1 + EBVX16S18D6V**)
- Medium temperature application (reference water temperature 55 °C)
- Reference heating season „A" – average

	Outdoor heat exchanger	Indoor heat exchanger	Part load ratio	Part load	DC Declared capacity	COPd at declared capacity	Cdh degradation coefficient	CR	COPbin (Tj)	Eff. power input of compressor off state
	Outdoor air inlet	Outlet water temperature								
	[°C]	[°C]	[%]	[kW]	[kW]	[–]	[–]	[–]	[–]	[kW]
A	-7	52.00	88.46	9.73	9.386	2.202	0.900	1.00	2.202	–
B	2	42.00	53.85	5.92	6.368	3.568	0.900	1.00	3.568	–
C	7	37.23	34.62	3.81	4.497	5.219	0.976	0.85	5.196	0.0207
D	12	35.48	15.38	1.69	5.369	6.419	0.975	0.32	6.091	0.0207
TOL (E)	-10	55.00	100.00	11.00	7.008	1.836	0.900	1.00	1.836	–
Tbiv (F)	-5	49.78	80.77	8.88	9.193	2.424	0.900	1.00	2.424	–

Adaption of water temperature – according to ČSN EN 14825:2020, Annex F
- Medium temperature application (reference water temperature 55 °C)
- Reference season „A"– average
- Condition D
- Variable water flow rate – secondary circuit

General formulas and derivation:

$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (t_{outlet,\ capacity\ test} - t_{inlet,\ capacity\ test}) \cdot CR$ [°C]

$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (\Delta t) \cdot CR$ [°C]

$t_{outlet,\ average} = t_{outlet,\ capacity\ test} - \Delta t + \Delta t \cdot CR$ [°C]

$t_{outlet,\ capacity\ test} = t_{outlet,\ average} + \Delta t - \Delta t \cdot CR$ [°C]

For variable flow:

$\Delta t = 8$

$CR \cdot \Delta t$ = Part load / Declared capacity · 8

$t_{outlet,\ capacity\ test,\ variable\ flow} = t_{outlet,\ average} + 8$ - Part load / Declared capacity · 8

Measured data:

$t_{outlet,\ average}$	30.00	[°C]
Declared capacity	5.369	[kW]
Declared capacity standard rating condition A7/W35	-	[kW]
Part load	1.69	[kW]

Calculation of water temperature

$t_{outlet,\ capacity\ test,\ variable\ flow} = = 30 + 8 - 1.69 / 5.369 \cdot 8 = 35.48$ [°C]

Calculation SCOP, $SCOP_{on}$, $SCOP_{net}$
(Heat pump **ERLA14DAW1 + EBVX16S18D6V**)

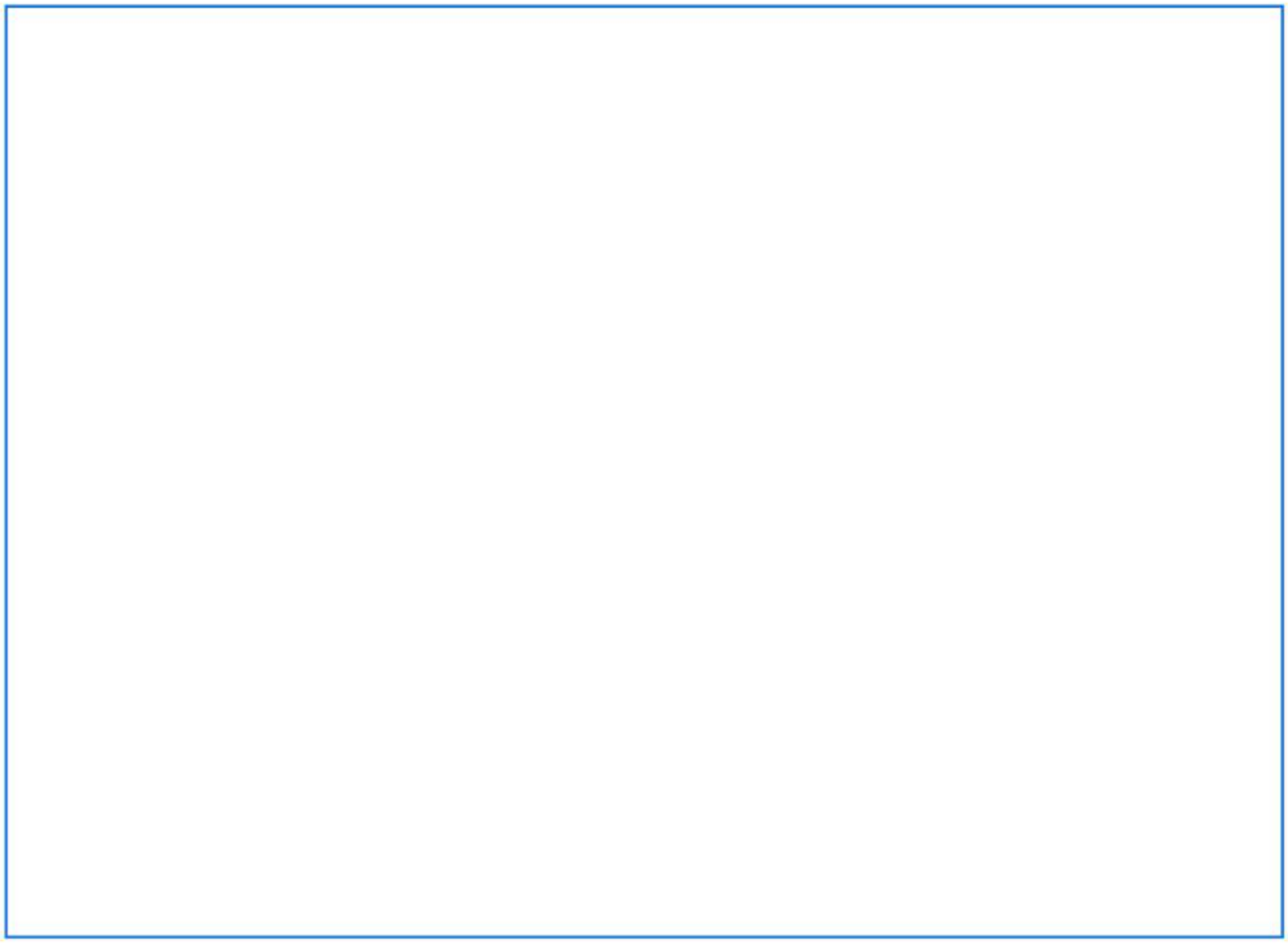
- Medium temperature application (reference water temperature 55 °C)
- Reference heating season „A" – average

	Bin	Outdoor temp. (dry bulb)	Hours	Part load ratio	Heat load	Capacity of HP	Heat load covered by heat pump	Resistive heat elbu (Tj)	Annual resistive heat	COPbin (Tj)	Annual heating demand	Annual power input including electric back up heating	Net annual heating capacity	Net annual power input without electric back up heating
	j	T_j	h_j		$P_{h(Tj)}$			$elbu_{(Tj)}$	h_j x $elbu_{(Tj)}$	COPbin (Tj)	h_j x $P_{h(Tj)}$		h_j × ($P_{h(Tj)}$ - $elbu_{(Tj)}$)	
	[–]	[°C]	[h]	[%]	[kW]	[kW]	[kW]	[kW]	[kWh]	[–]	[kWh]	[kWh]	[kWh]	[kWh]
TOL(E)	**21**	**-10**	**1**	**100.00**	**11.00**	**7.01**	**7.01**	**3.99**	**3.99**	**1.84**	**11**	**8**	**7**	**4**
	22	-9	25	96.15	10.58	7.80	7.80	2.78	69.41	1.96	264	169	195	100
	23	-8	23	92.31	10.15	8.59	8.59	1.56	35.89	2.08	234	131	198	95
A	**24**	**-7**	**24**	**88.46**	**9.73**	**9.39**	**9.39**	**0.34**	**8.28**	**2.20**	**234**	**111**	**225**	**102**
	25	-6	27	84.62	9.31	9.29	9.29	0.02	0.49	2.31	251	109	251	108
Tbiv(F)	**26**	**-5**	**68**	**80.77**	**8.88**	**9.19**	**8.88**	**0.00**	**0.00**	**2.42**	**604**	**249**	**604**	**249**
	27	-4	91	76.92	8.46	8.79	8.46	0.00	0.00	2.59	770	298	770	298
	28	-3	89	73.08	8.04	8.39	8.04	0.00	0.00	2.75	715	260	715	260
	29	-2	165	69.23	7.62	7.98	7.62	0.00	0.00	2.91	1257	431	1257	431
	30	-1	173	65.38	7.19	7.58	7.19	0.00	0.00	3.08	1244	404	1244	404
	31	0	240	61.54	6.77	7.18	6.77	0.00	0.00	3.24	1625	501	1625	501
	32	1	280	57.69	6.35	6.77	6.35	0.00	0.00	3.40	1777	522	1777	522
B	**33**	**2**	**320**	**53.85**	**5.92**	**6.37**	**5.92**	**0.00**	**0.00**	**3.57**	**1895**	**531**	**1895**	**531**
	34	3	357	50.00	5.50	5.99	5.50	0.00	0.00	3.89	1964	504	1964	504
	35	4	356	46.15	5.08	5.62	5.08	0.00	0.00	4.22	1807	428	1807	428
	36	5	303	42.31	4.65	5.25	4.65	0.00	0.00	4.55	1410	310	1410	310
	37	6	330	38.46	4.23	4.87	4.23	0.00	0.00	4.87	1396	287	1396	287
C	**38**	**7**	**326**	**34.62**	**3.81**	**4.50**	**3.81**	**0.00**	**0.00**	**5.20**	**1241**	**239**	**1241**	**239**
	39	8	348	30.77	3.38	4.67	3.38	0.00	0.00	5.38	1178	219	1178	219
	40	9	335	26.92	2.96	4.85	2.96	0.00	0.00	5.55	992	179	992	179
	41	10	315	23.08	2.54	5.02	2.54	0.00	0.00	5.73	800	139	800	139
	42	11	215	19.23	2.12	5.19	2.12	0.00	0.00	5.91	455	77	455	77
D	**43**	**12**	**169**	**15.38**	**1.69**	**5.37**	**1.69**	**0.00**	**0.00**	**6.09**	**286**	**47**	**286**	**47**
	44	13	151	11.54	1.27	5.54	1.27	0.00	0.00	6.27	192	31	192	31
	45	14	105	7.69	0.85	5.72	0.85	0.00	0.00	6.45	89	14	89	14
	46	15	74	3.85	0.42	5.89	0.42	0.00	0.00	6.63	31	5	31	5
		Σ	4910							Σ	22722	6202	22604	6084

SCOPon	3.66	SCOPnet	3.72
		SCOP	**3.66**

Power diagram (Heat pump **ERLA14DAW1 + EBVX16S18D6V**)

- Medium temperature application (reference water temperature 55 °C)
- Reference heating season „A“ – average

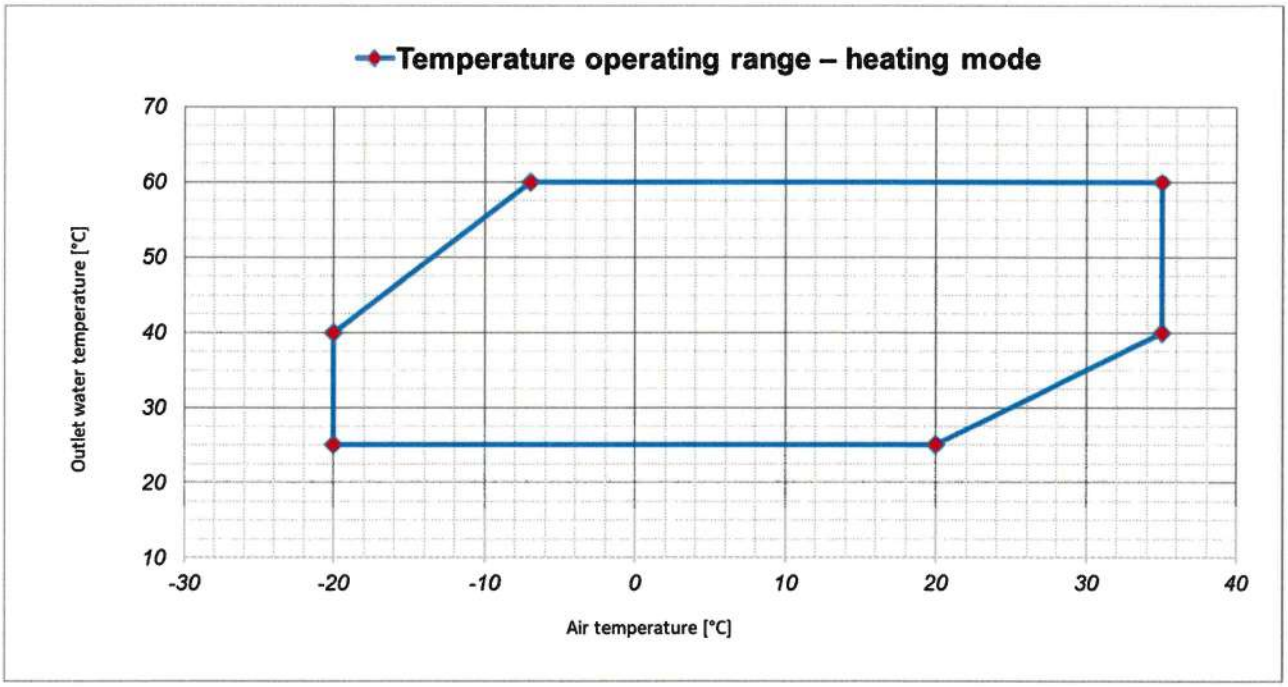


Accredited test number:	**T 037***	Test title:	**Tests of leakage, pressure resistance, thermal and technical parameters, combustion efficiency, safety functions**

Testing method	ČSN EN 14511-2:2019, ČSN EN 14511-3:2019, ČSN EN 14511-4:2019
Sample tested	Heat pump **ERLA14DAW1 + EBVX16S18D6V**
Measuring equipment used	See chapter II.

Place of testing:	at the Engineering Test Institute	☒	at the Manufacturer´s premises	☐	at the Customer´s premises	☐	*other:*

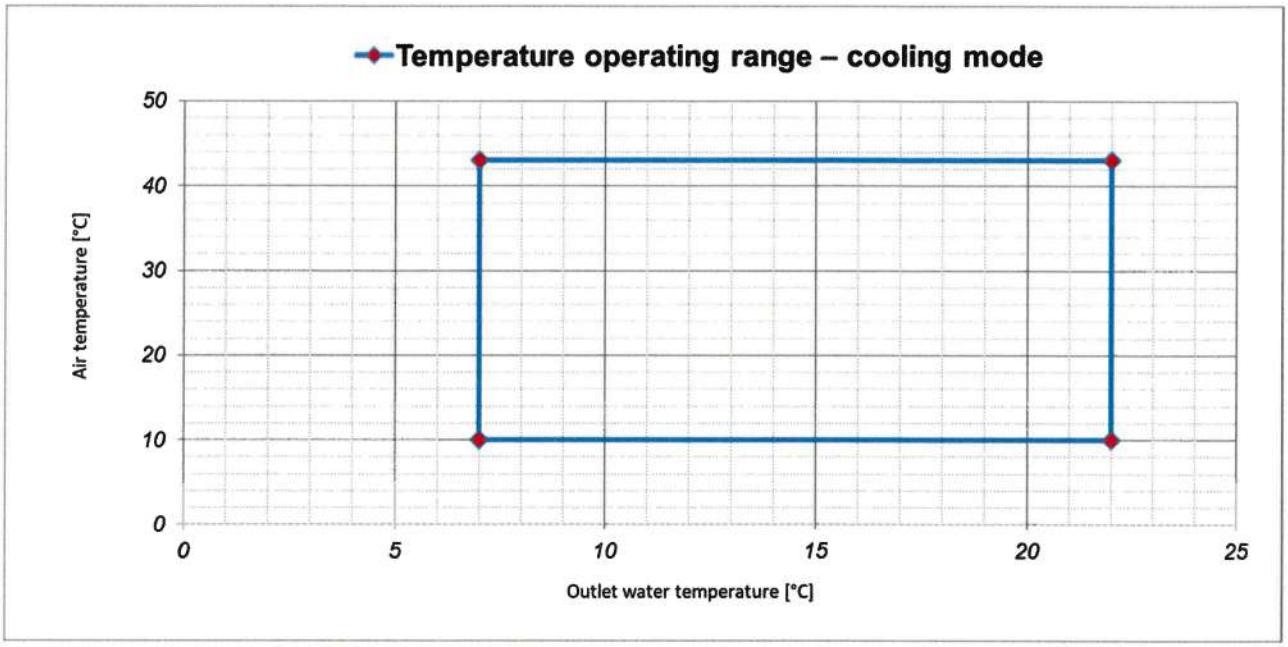
1) Temperature operating range – heating mode



Test point	Inlet air dry bulb temperature [°C]		Outlet heating water temperature [°C]		Water flow rate in condenser [m³/h]	Note
1.	A	-20	W	25	Minimum	Minimum water flow rate: **0.6476 m³·h⁻¹**
2.	A	-20	W	40	Minimum	Maximum water flow rate: **2.3747 m³·h⁻¹**

Heat pump **ERLA14DAW1 + EBVX16S18D6V** is fully operational in the temperature operating range.

2) Temperature operating range – cooling mode



Test point	Inlet air dry bulb temperature [°C]		Outlet heating water temperature [°C]		Water flow rate in condenser [m³/h]	Note
1.	A	10	W	7	Minimum	Minimum water flow rate: **0.900 m³·h⁻¹**
2.	A	43	W	22	Maximum	Maximum water flow rate: **2.400 m³·h⁻¹**

Heat pump **ERLA14DAW1 + EBVX16S18D6V** is fully operational in the temperature operating range.

Starting and operating tests (heating mode)

Test according to Article 4.2.1.2 of ČSN EN 14511-4:2019

Operational requirements conditions for air-to-water units					
Test point	**Inlet temperature at outdoor heat exchanger (°C)**	**Inlet temperature at indoor heat exchanger (°C)**	**Water flow rate at indoor heat exchanger**	**Voltage (V)**	**Test result**
1 (starting)	Lower limit of use	Lower limit of use	minimum	Rated voltage	+
2 (operating)	Lower limit of use	Upper limit of use	minimum	Rated voltage	+

Evaluation:

+...	For a starting test, the unit shall start and operate during 15 min, for an operating test, the unit shall be able to operate during 1 h, without tripping of the motor overload protective devices.
–...	The unit did not fulfill test requirements.
0...	The requirement does not apply to the product concerned.
x...	Test was not required.

Starting and operating tests (cooling mode)

Test according to Article 4.2.1.3 of ČSN EN 14511-4:2019

Operational requirements conditions for air-to-water units					
Test point	**Inlet temperature at outdoor heat exchanger (°C)**	**Inlet temperature at indoor heat exchanger (°C)**	**Water flow rate at indoor heat exchanger**	**Voltage (V)**	**Test result**
1 (starting)	Lower limit of use	Lower limit of use	minimum	Rated voltage	+
2 (starting)	Upper limit of use	Upper limit of use	maximum	Rated voltage	+

Evaluation:
+... For a starting test, the unit shall start and operate during 15 min, without tripping of the motor overload protective devices.
–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

3) Outside the operating range

Requirements for outside the operating range	Requirement specification	Test result	Note
If operating outside the temperature range can cause damage to the unit, it shall be provided with safety devices which ensure that the unit suffers no damage when the operating limits of use indicated by the manufacturer are exceeded and remains capable of operating when coming back within these limits. A safety device that does not automatically reset may trip provided that a warning device is fitted. The manufacturer shall indicate any safety devices provided and their operating conditions according to 7.2.3.	ČSN EN 14511-4:2019 Art. 4.3	x	–

Evaluation:
+... The unit fulfills test requirements.
–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

4) Freeze-up test in cooling mode

Air-to-air and water(brine)-to-air units

Required operating conditions	Test result	Note
Test according to Article 4.4 of ČSN EN 14511-4:2019	0	–

Evaluation:
+... After the unit has operated for 6 hours or after the last freeze up cycle has been completed after these 6 h, the following requirements shall be fulfilled:
- no ice shall have accumulated on the evaporator;
- no ice shall drip from the unit;
- no water shall drip or be blown off the unit into the room.

–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

5) Shutting off the heat transfer medium flows

Required operating conditions	Test result	Note
Test for section a) Art. 4.5 ČSN EN 14511-4:2019 – heating	+	Unit kept operating with lower heating capacity
Test for section a) Art. 4.5 ČSN EN 14511-4:2019 – cooling	+	Unit turned off, then back on after 5 minutes and working with lower cooling capacity
Test for section b) Art. 4.5 ČSN EN 14511-4:2019 – heating	+	Flow sensor malfunction, water problem
Test for section b) Art. 4.5 ČSN EN 14511-4:2019 – cooling	+	7H-06 Water flow problem during cooling/defrost
Test for section c) Art. 4.5 ČSN EN 14511-4:2019	0	–

Evaluation:
+... The unit shall remain capable of operating after restoration of the flow rates for 30 min once the compressor has restarted.
–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

6) Complete power supply failure

Required operating conditions	Test result	Note
Test according to Article 4.6 of ČSN EN 14511-4:2019	+	–

Evaluation:
+... The unit has to restart automatically within 30 min. When manufacturer states that the unit does not automatically restart, fault detection is necessary. The unit is checked for any damage sustained during the test and if any safety devices have operated during the test.
–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

7) Condensate draining and enclosure sweat test

Air-to-air and water(brine)-to-air units

Required operating conditions	Test result	Note
Test according to Article 4.7 of ČSN EN 14511-4:2019	0	–

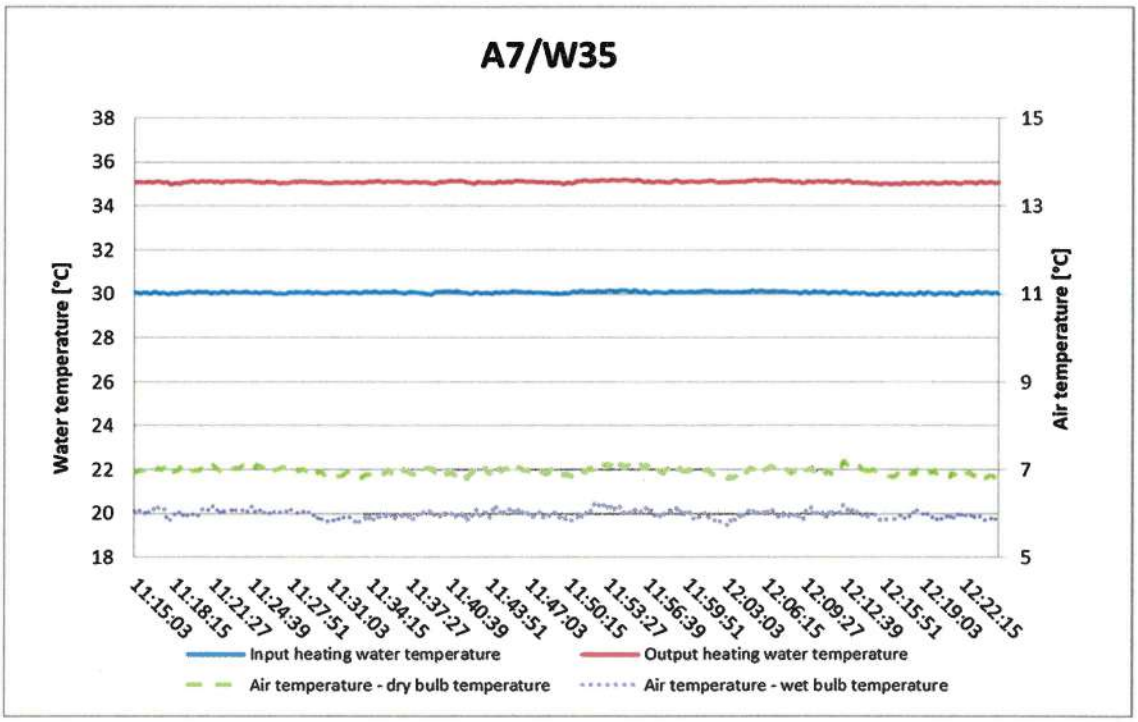
Evaluation:
+... During the test of 4 hours no condensed water shall drip, run or blow off the unit except through the drain. For indoor units, drain holes shall be provided with suitable pipe connection, the minimum diameter of which shall be 12 mm.
–... The unit did not fulfill test requirements.
0... The requirement does not apply to the product concerned.
x... Test was not required.

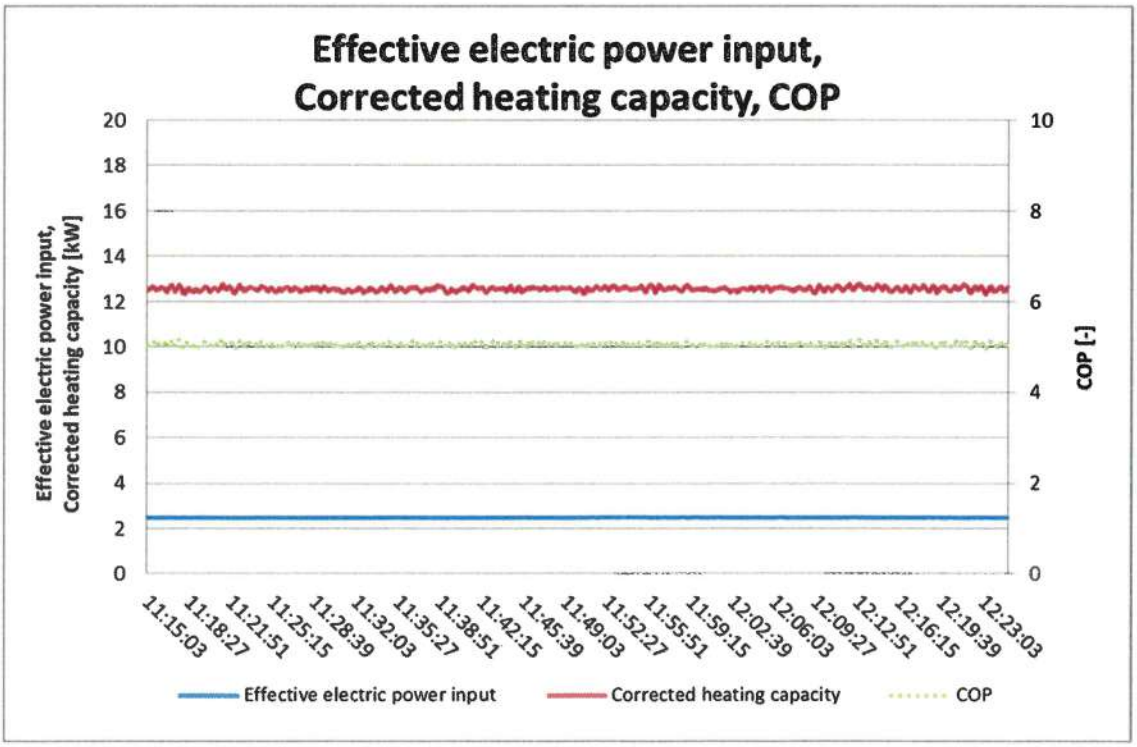
Tested by: Ing. Michal Faltýnek Date: 2021-10-22 Signed: Michal Faltýnek

Reviewed by: Ing. Mario Jankola Date: 2021-10-22 Signed: Mario Jankola

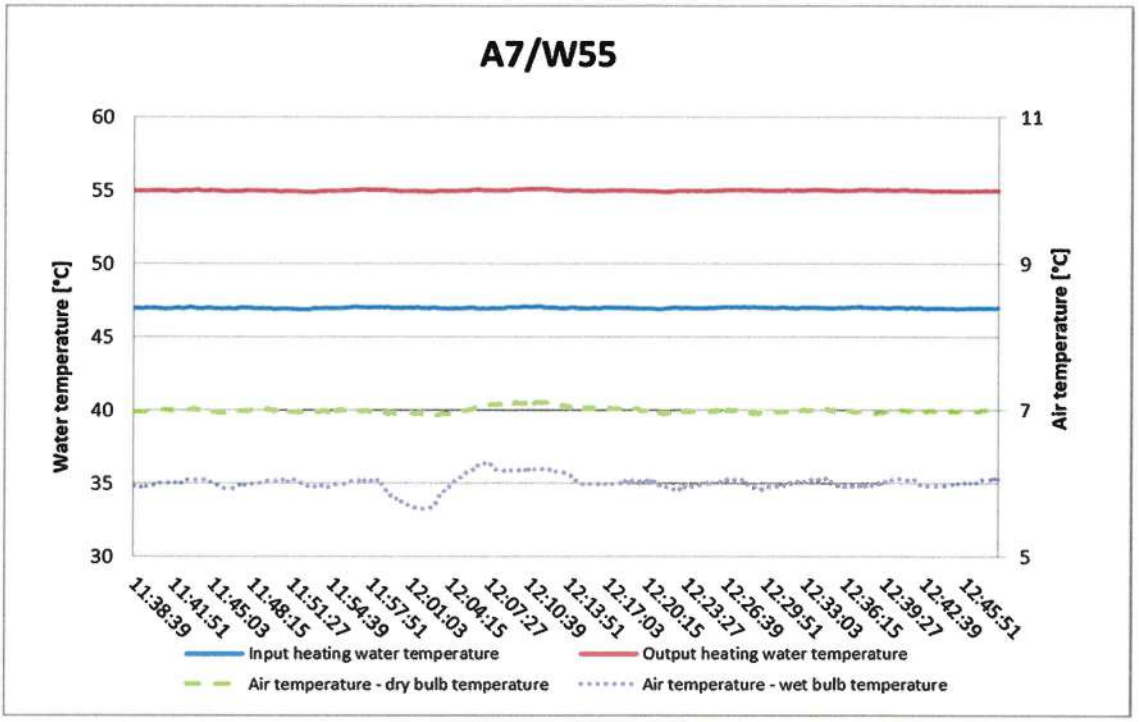
V. Graphs

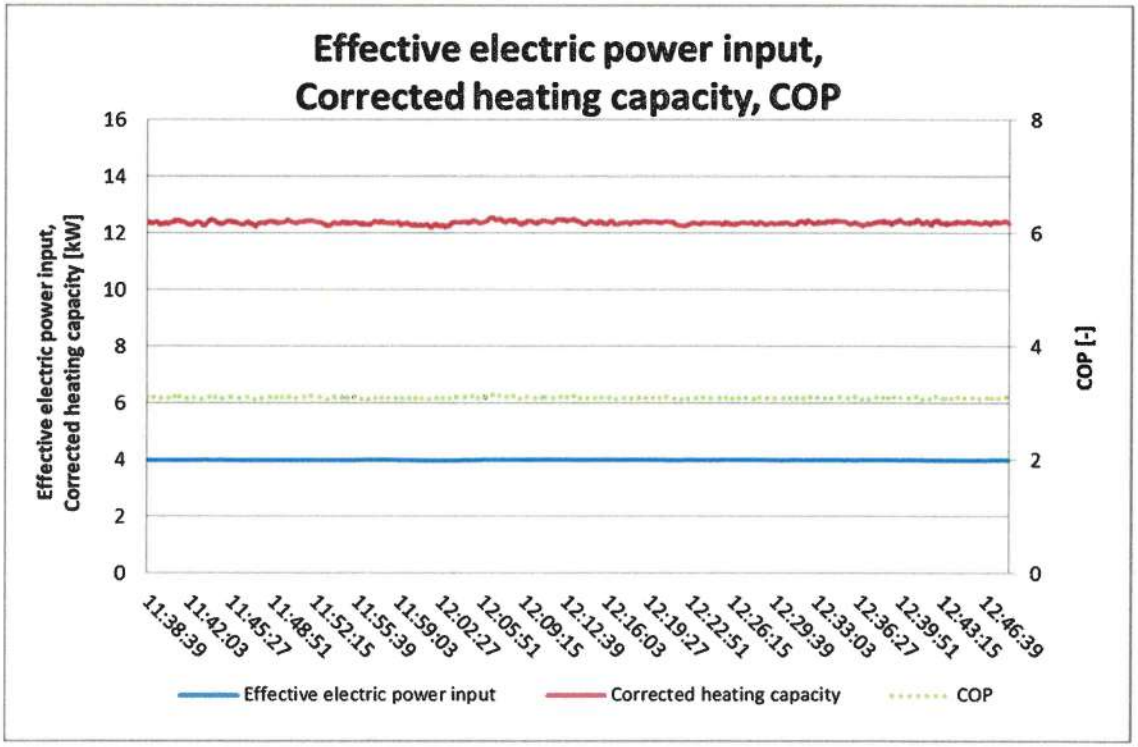
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A7/W35 (57.5 Hz)



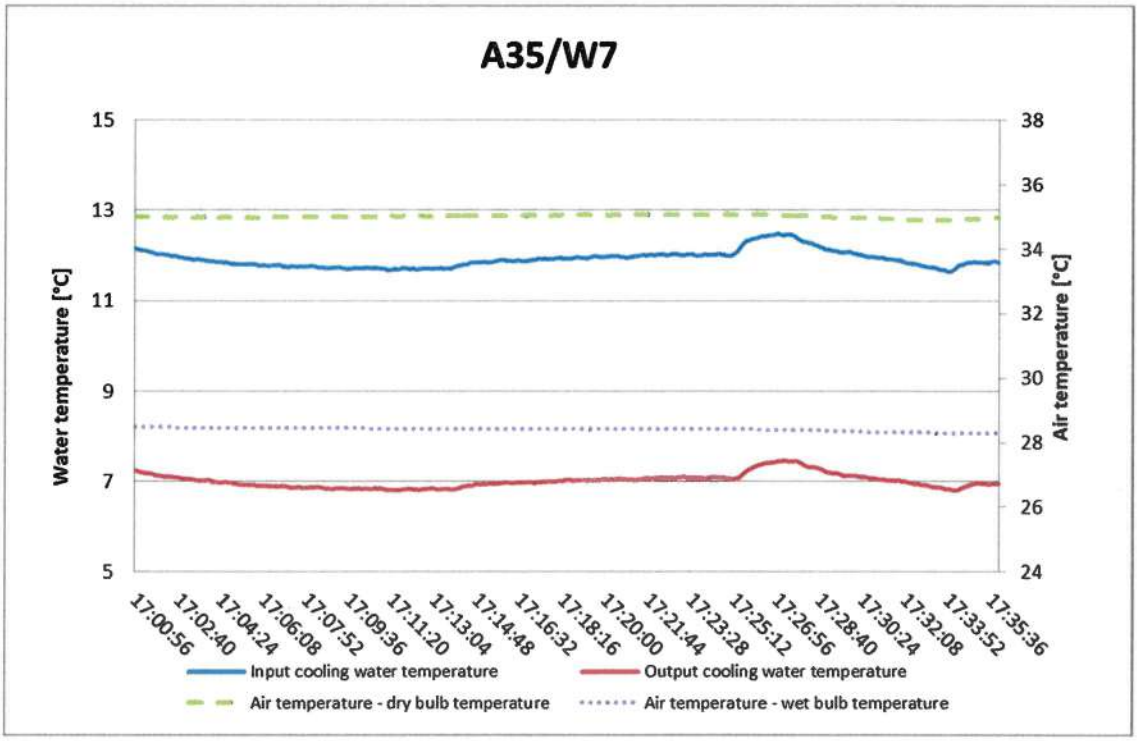


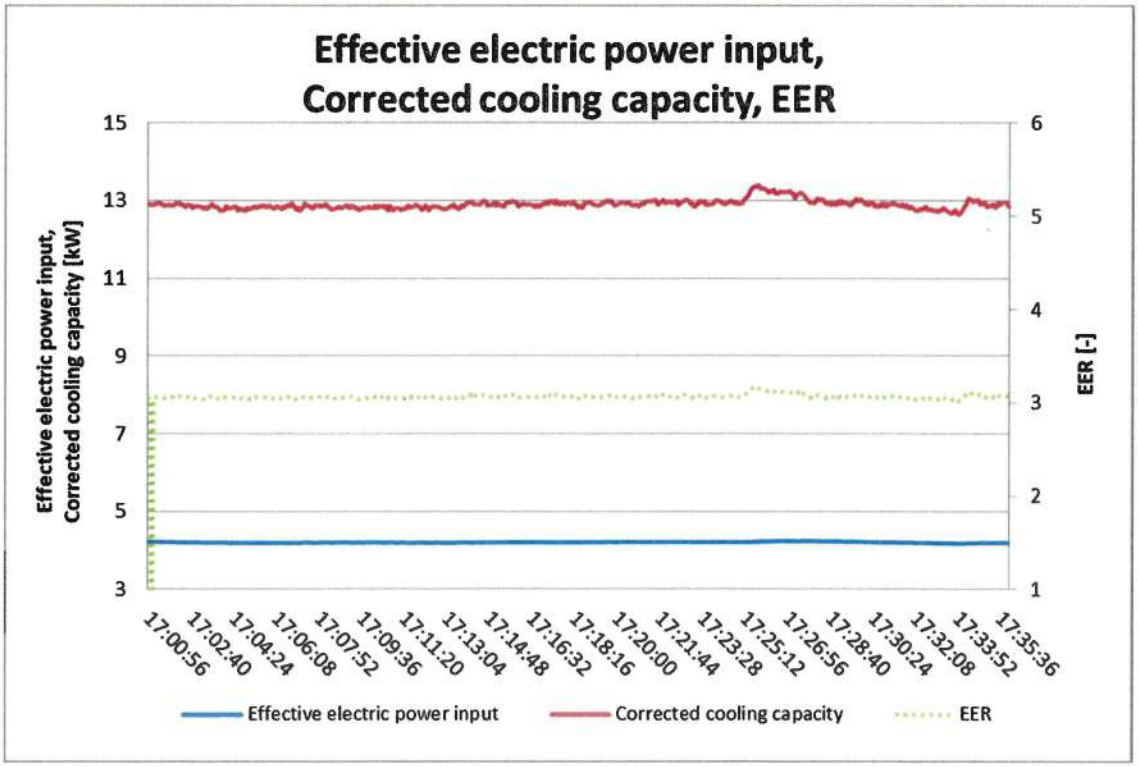
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A7/W55 (64 Hz)



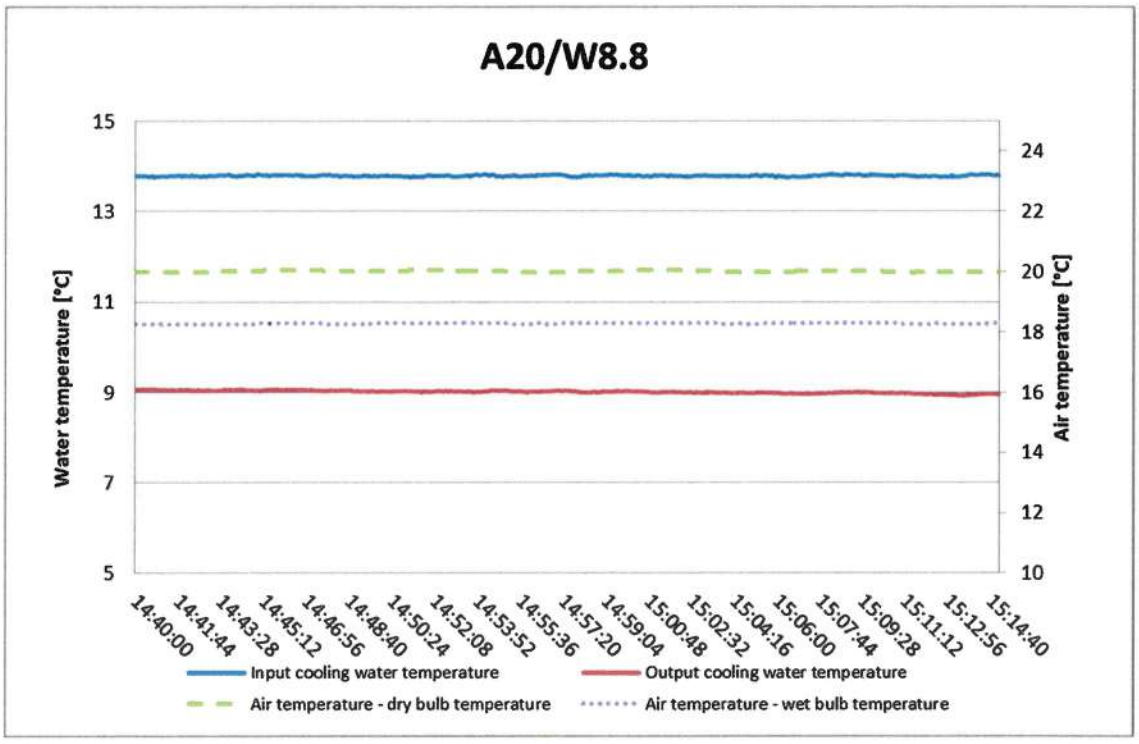


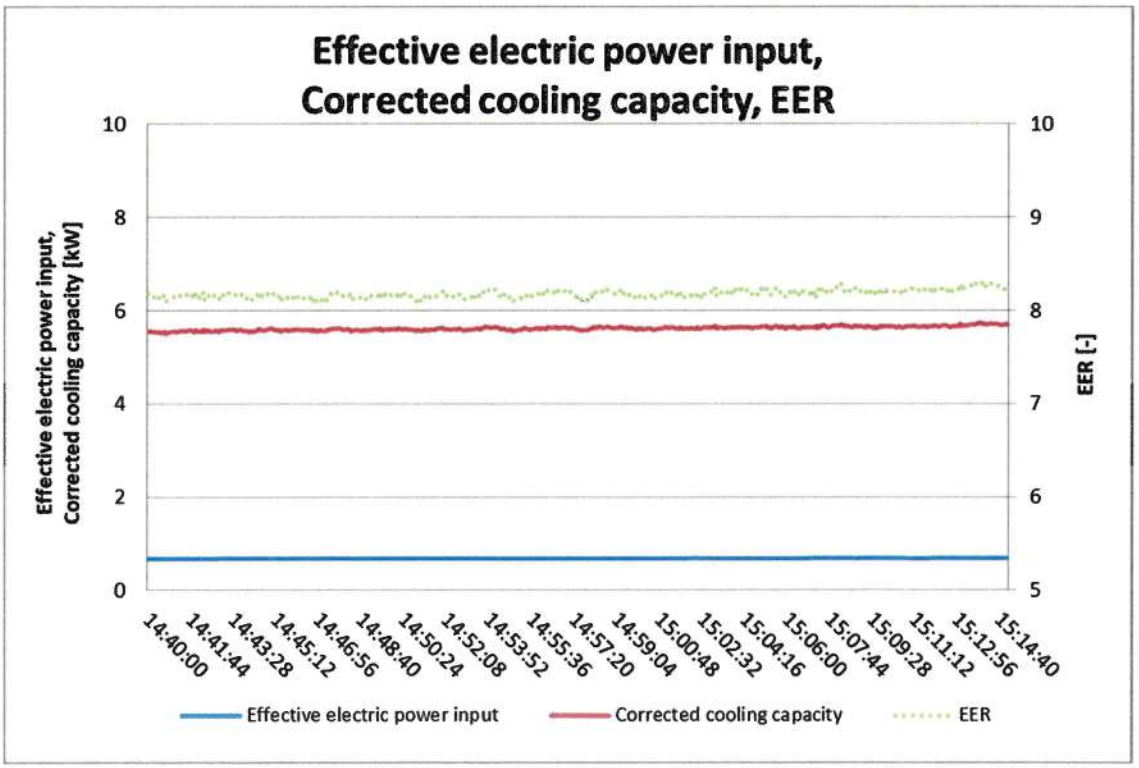
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A35/W7 (75 Hz)



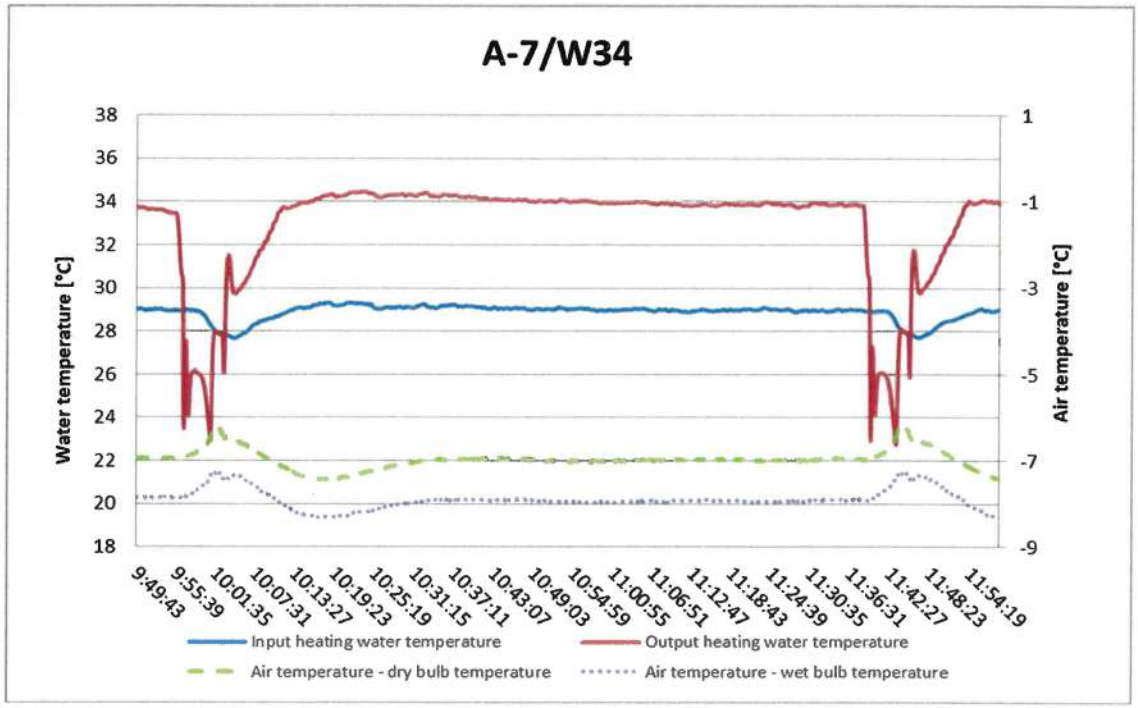


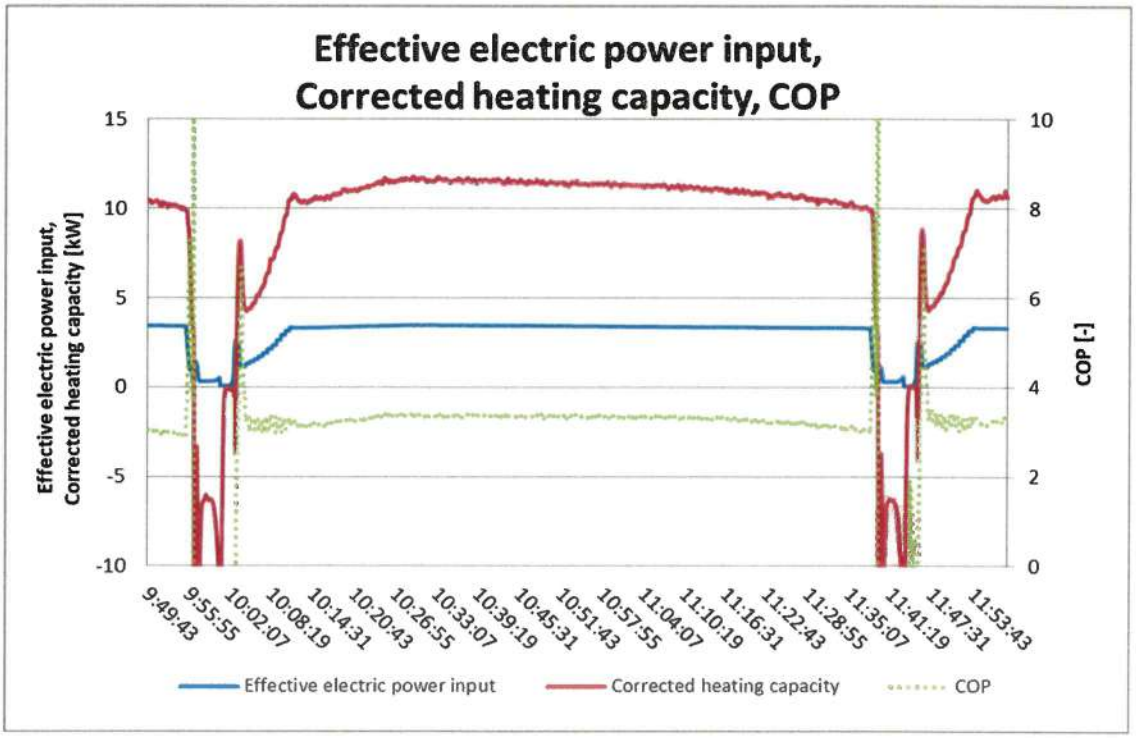
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A20/W8.8 (24 Hz)



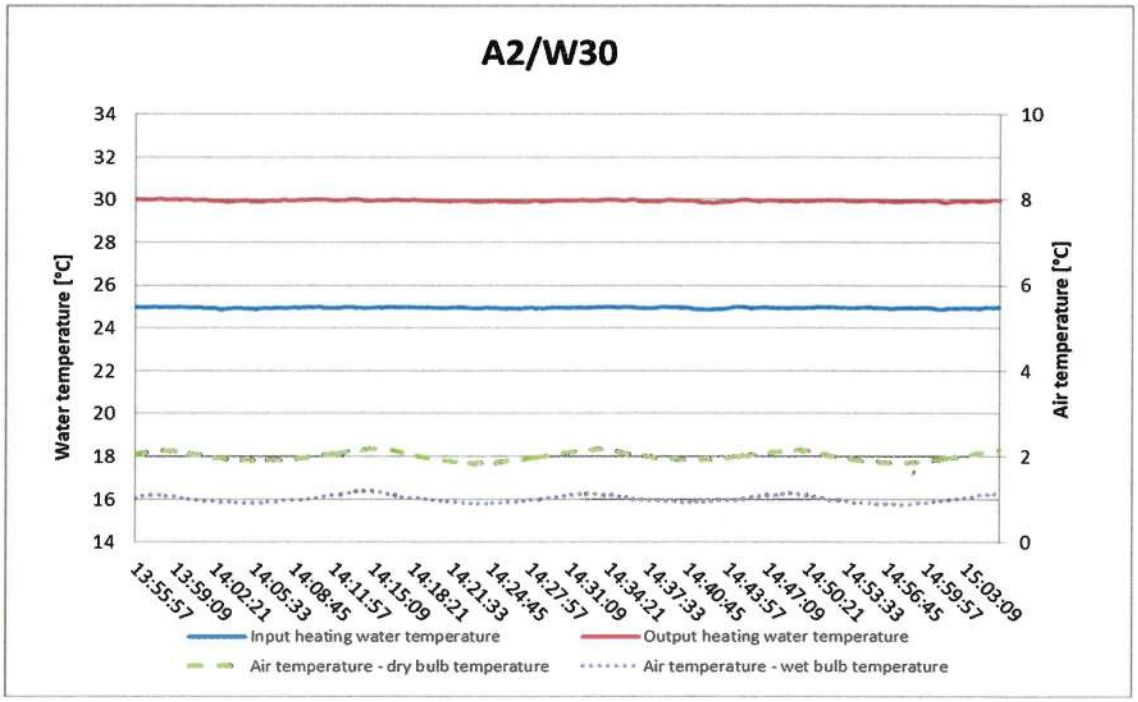


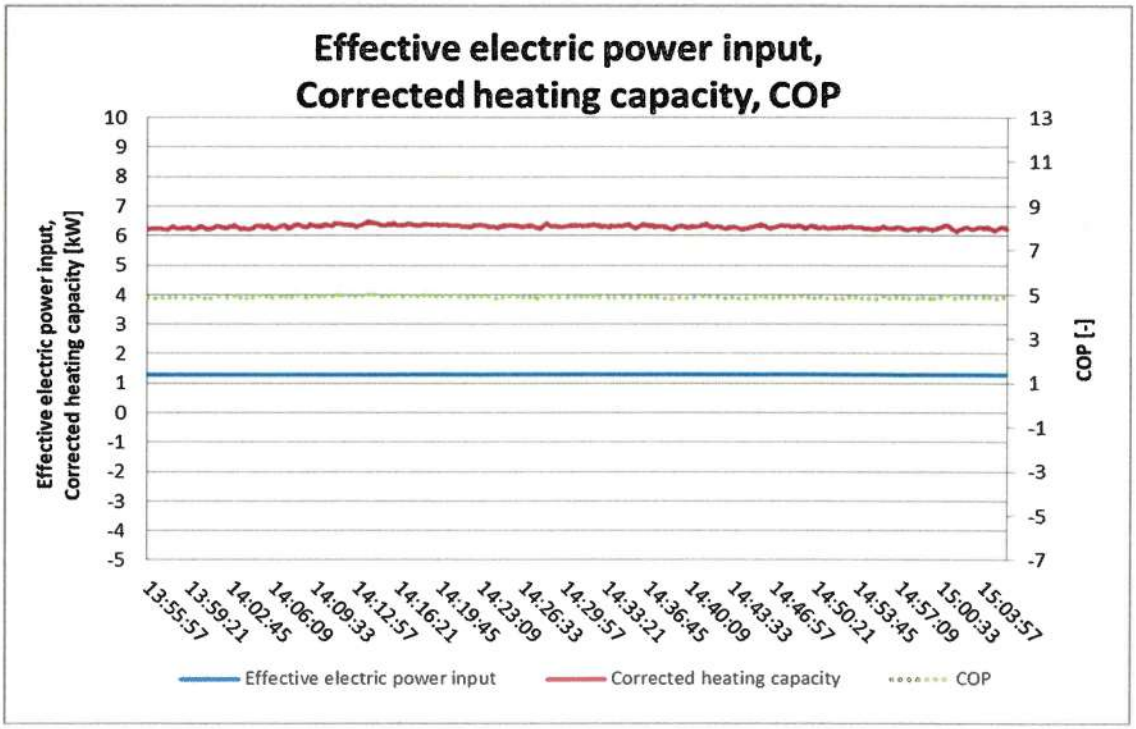
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A-7/W34 (79 Hz)



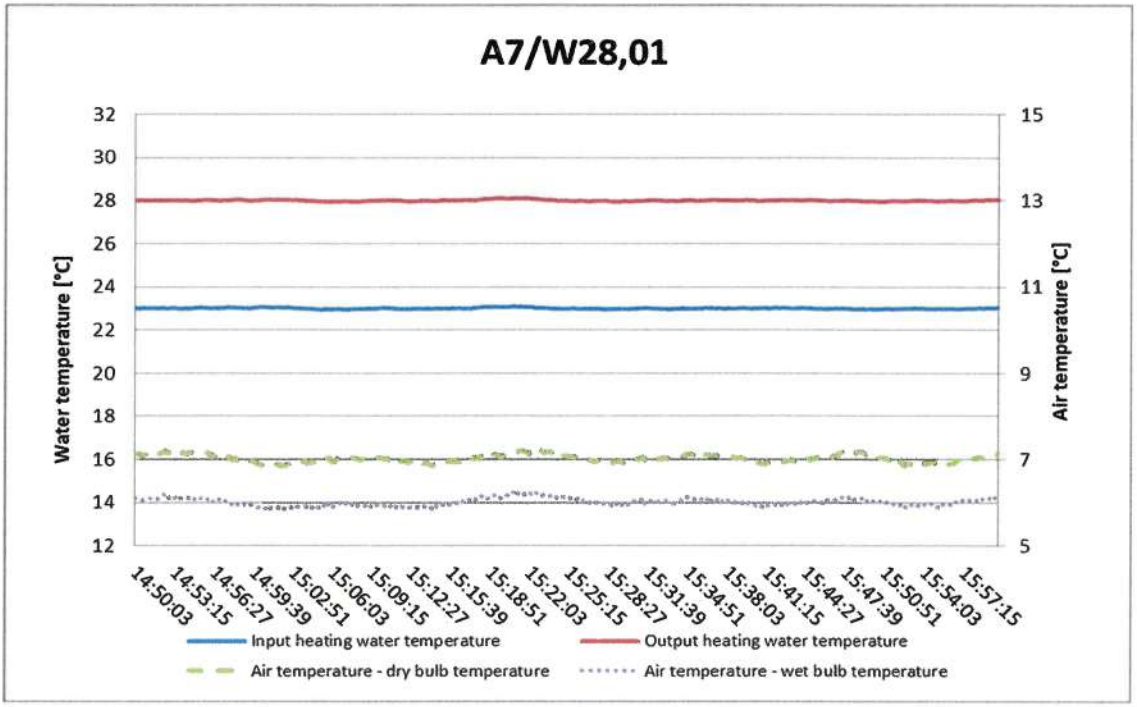


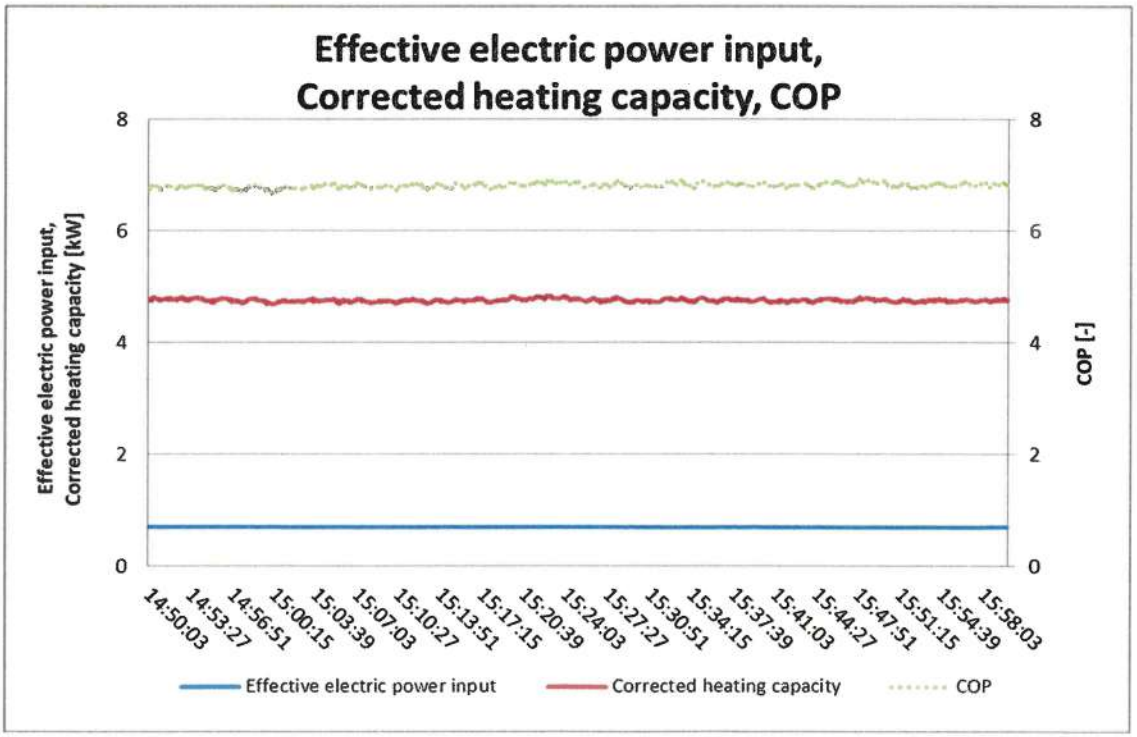
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A2/W30 (32 Hz)



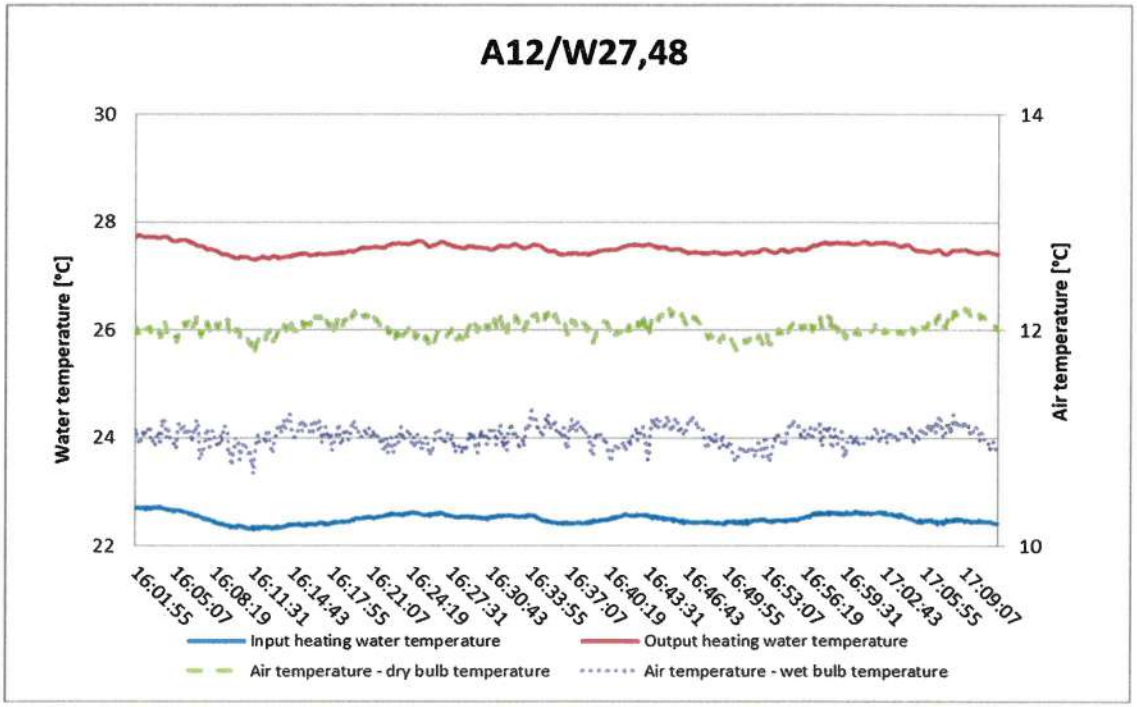


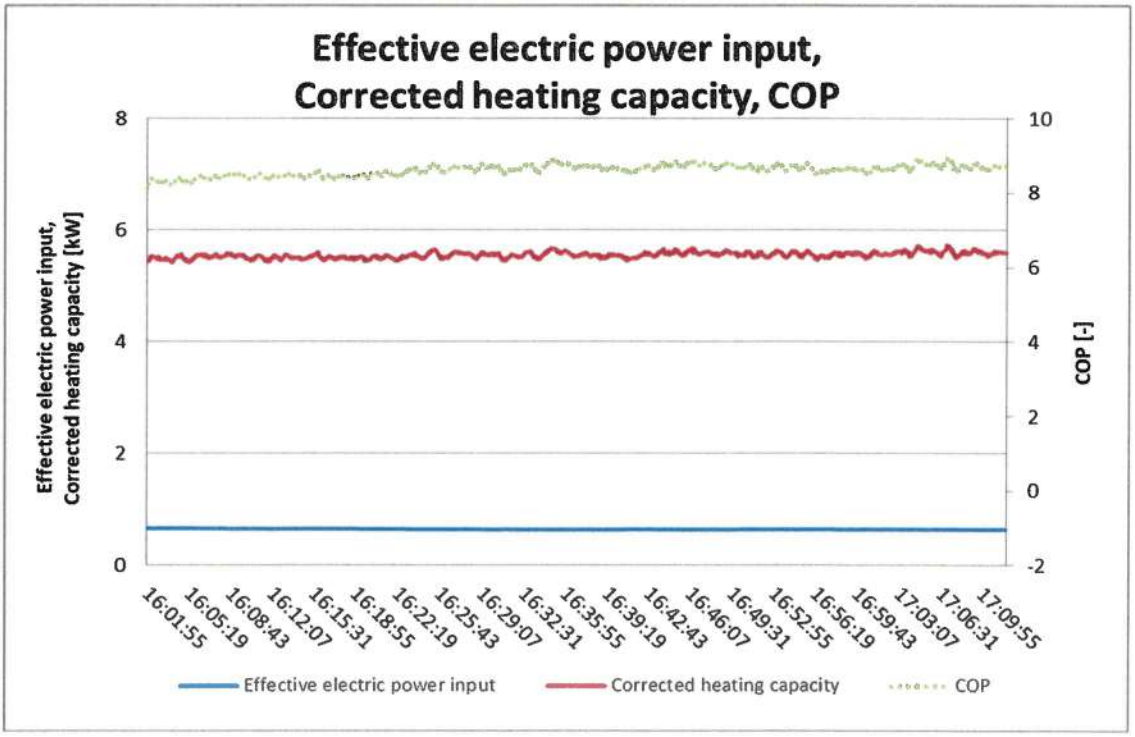
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A7/W28.01 (21.5 Hz)



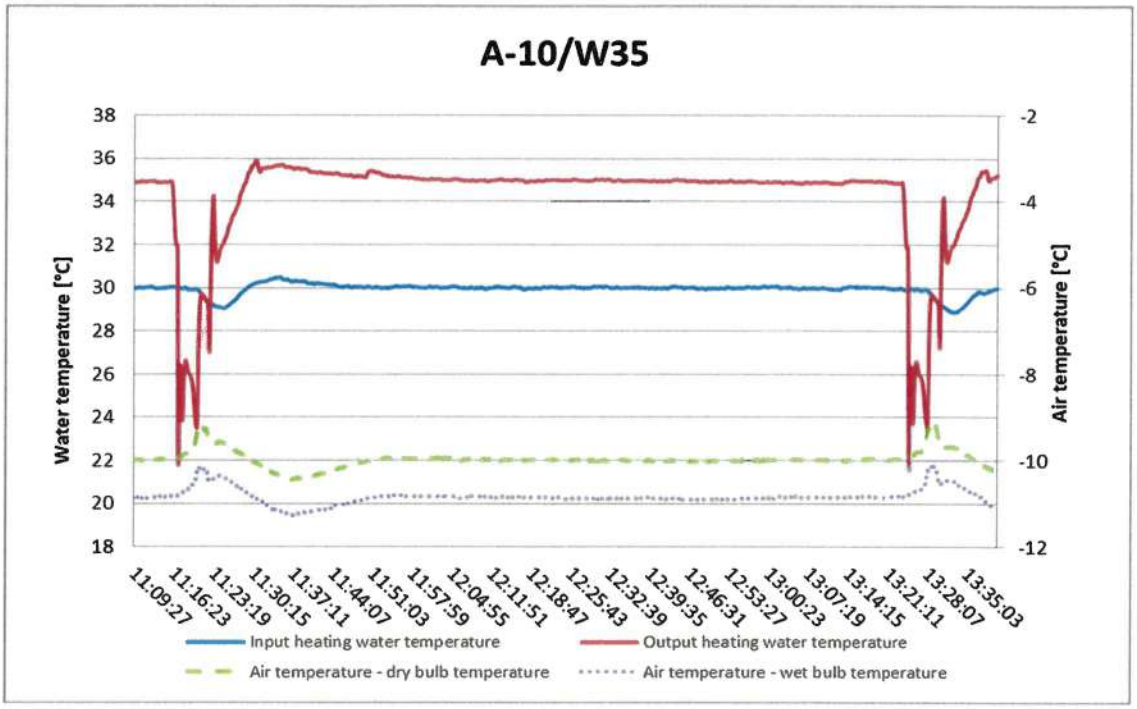


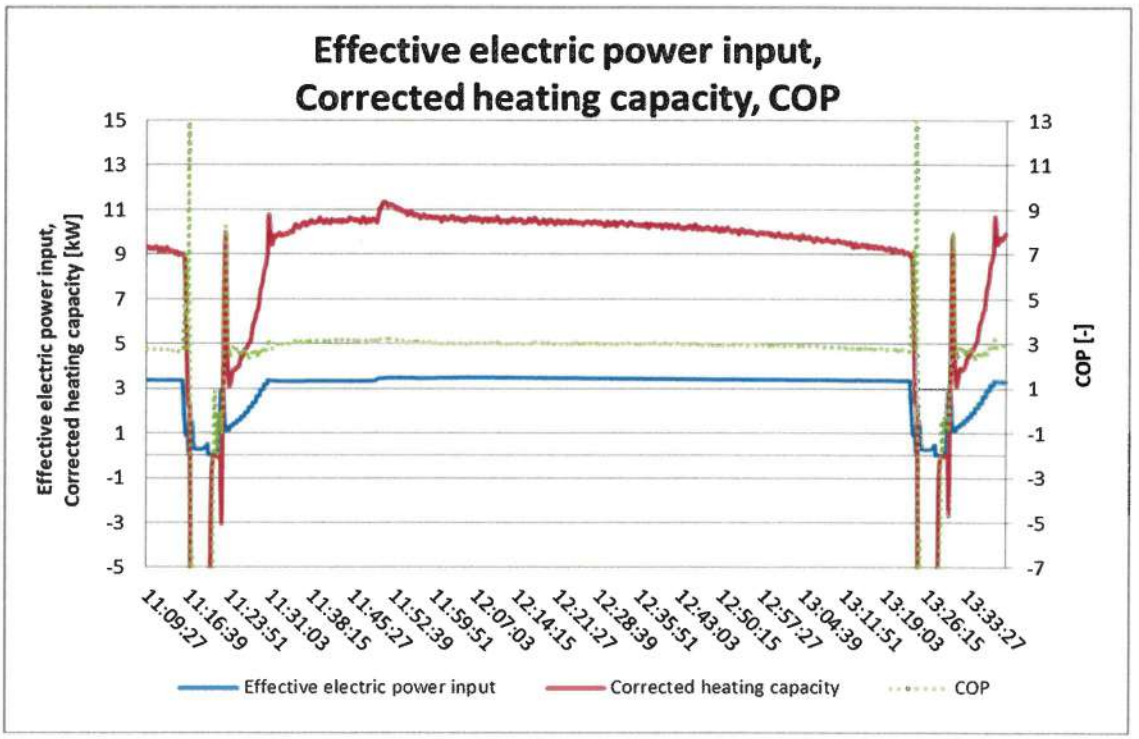
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A12/W27.48 (21.5 Hz)



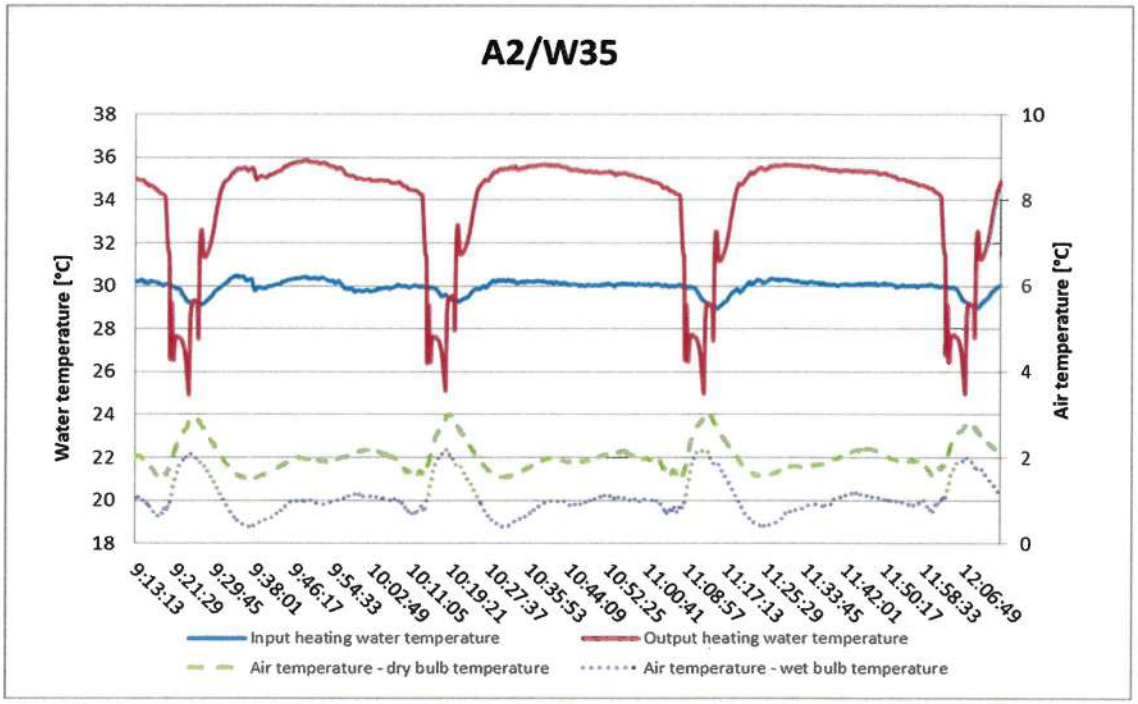


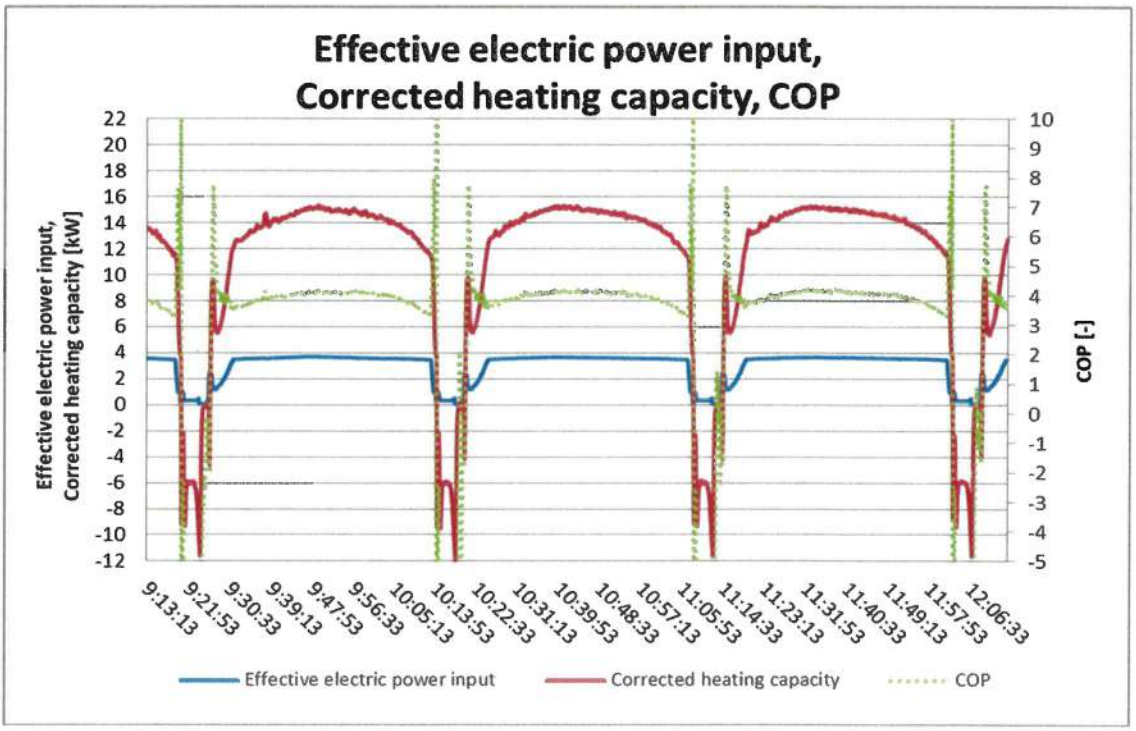
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A-10/W35 (79 Hz)



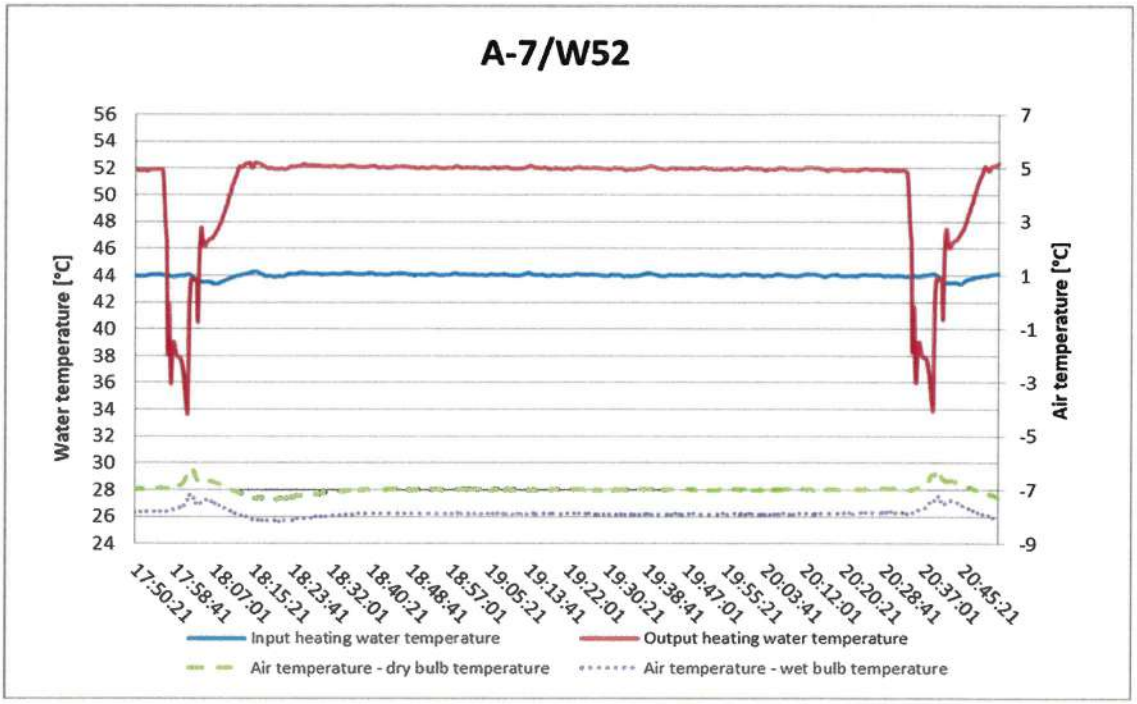


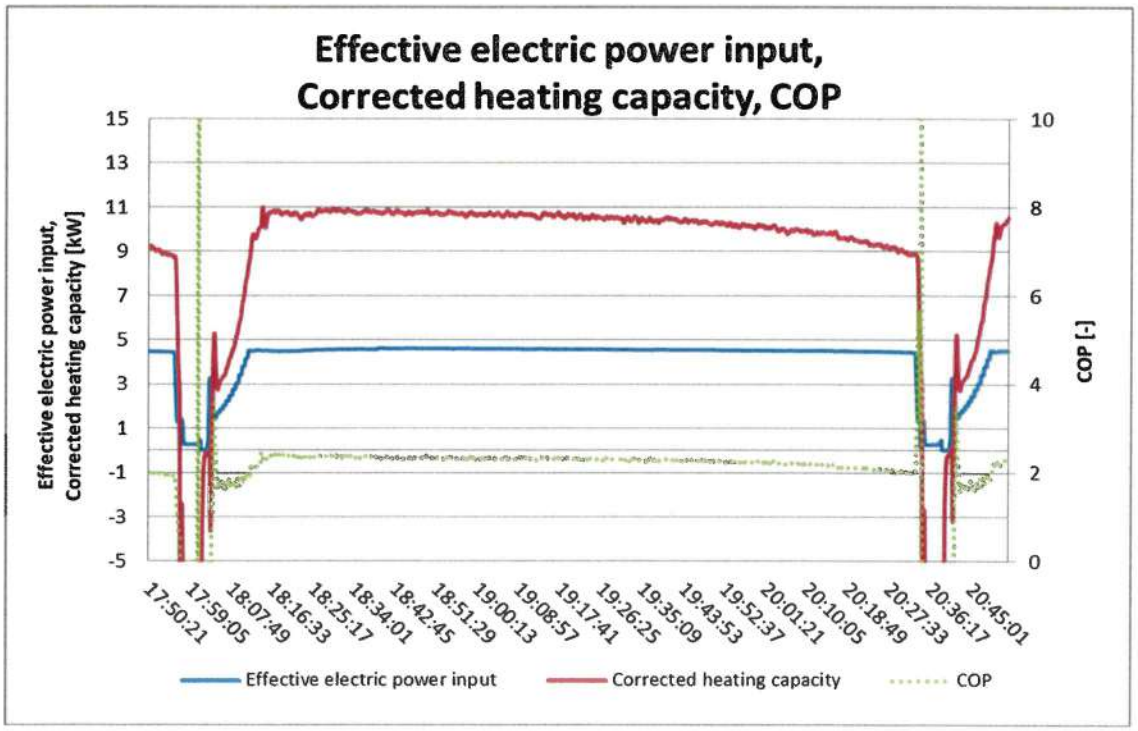
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A2/W35 (79 Hz)



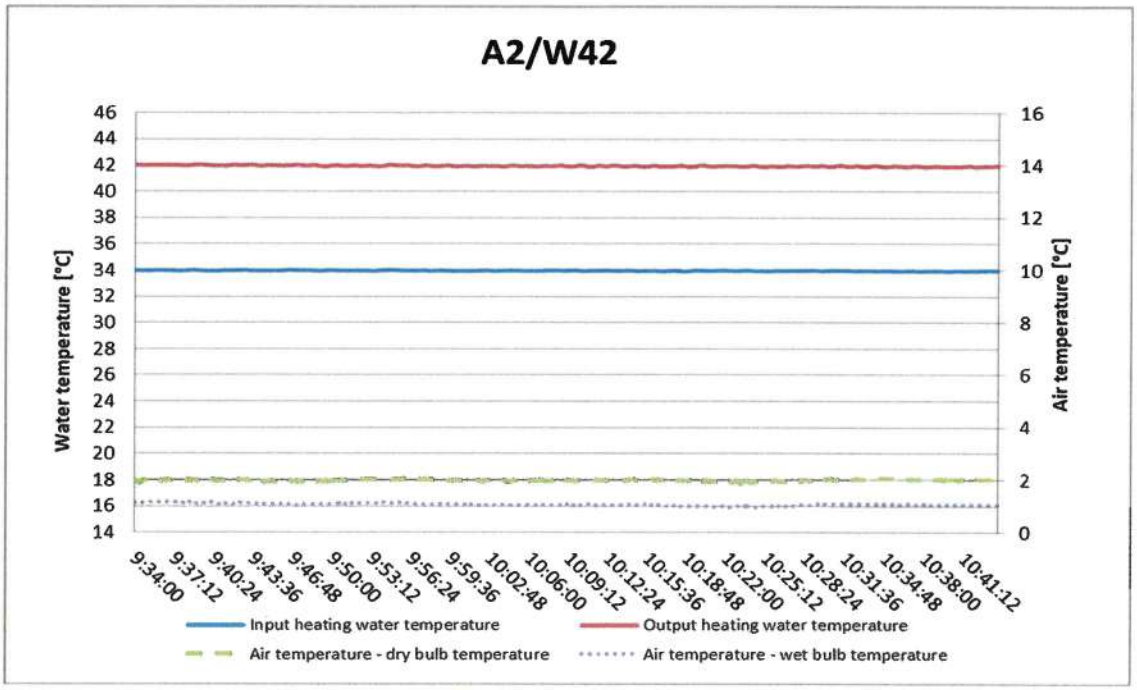


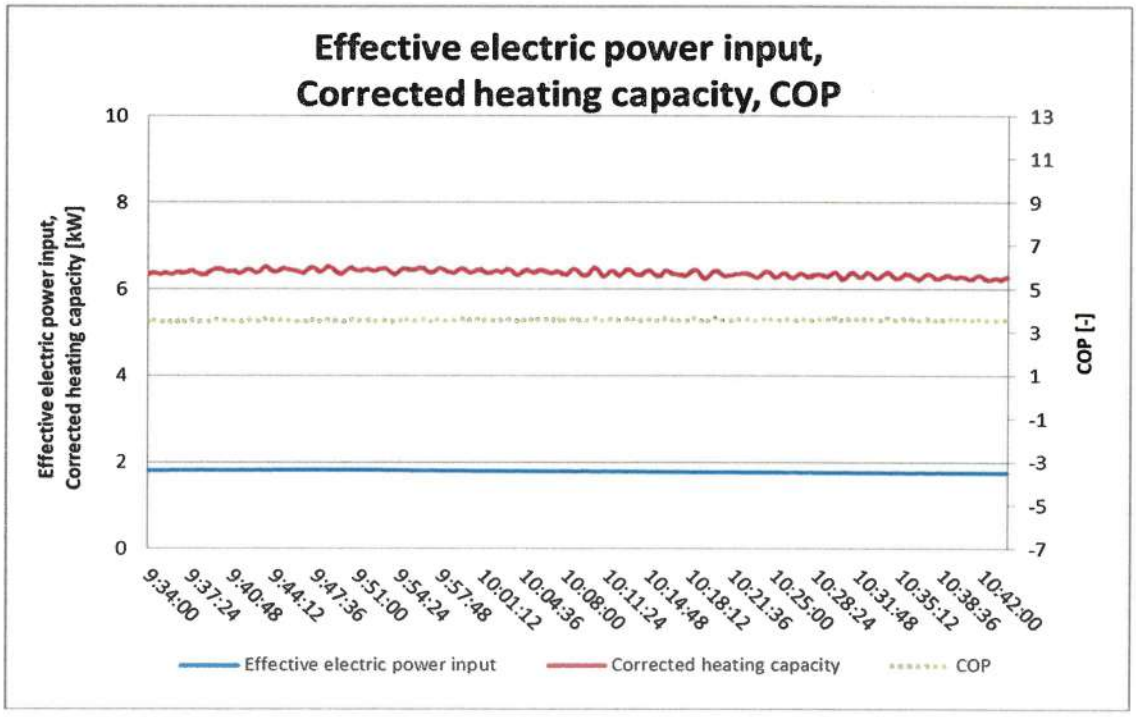
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A-7/W52 (79 Hz)



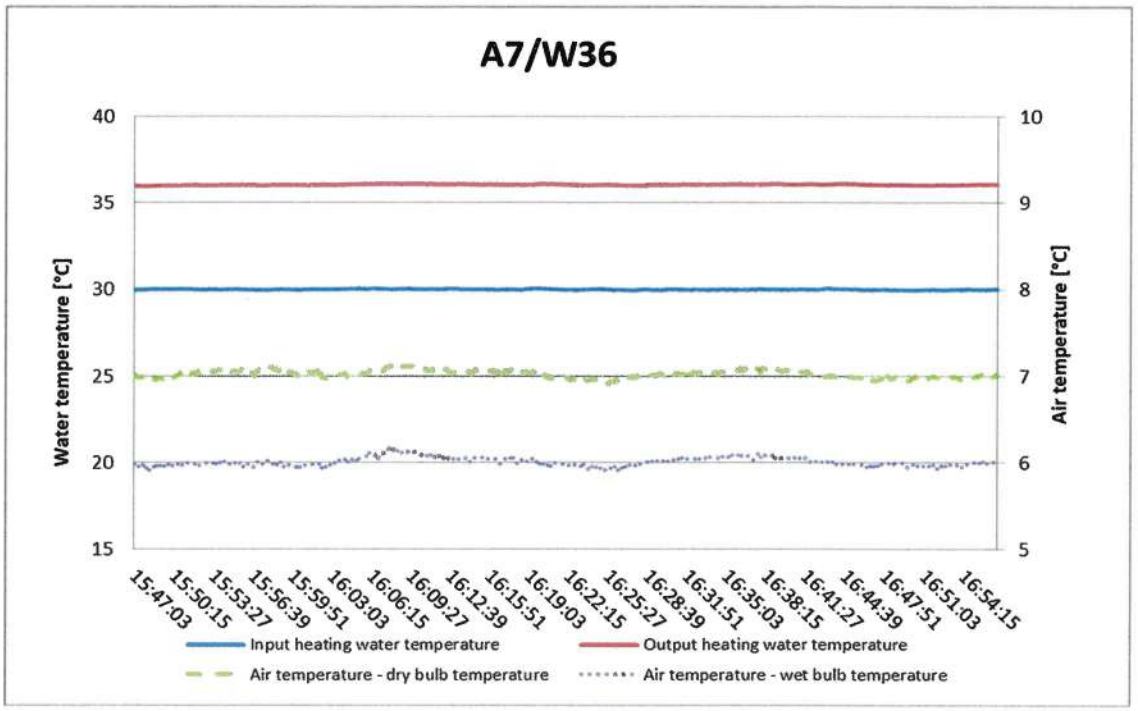


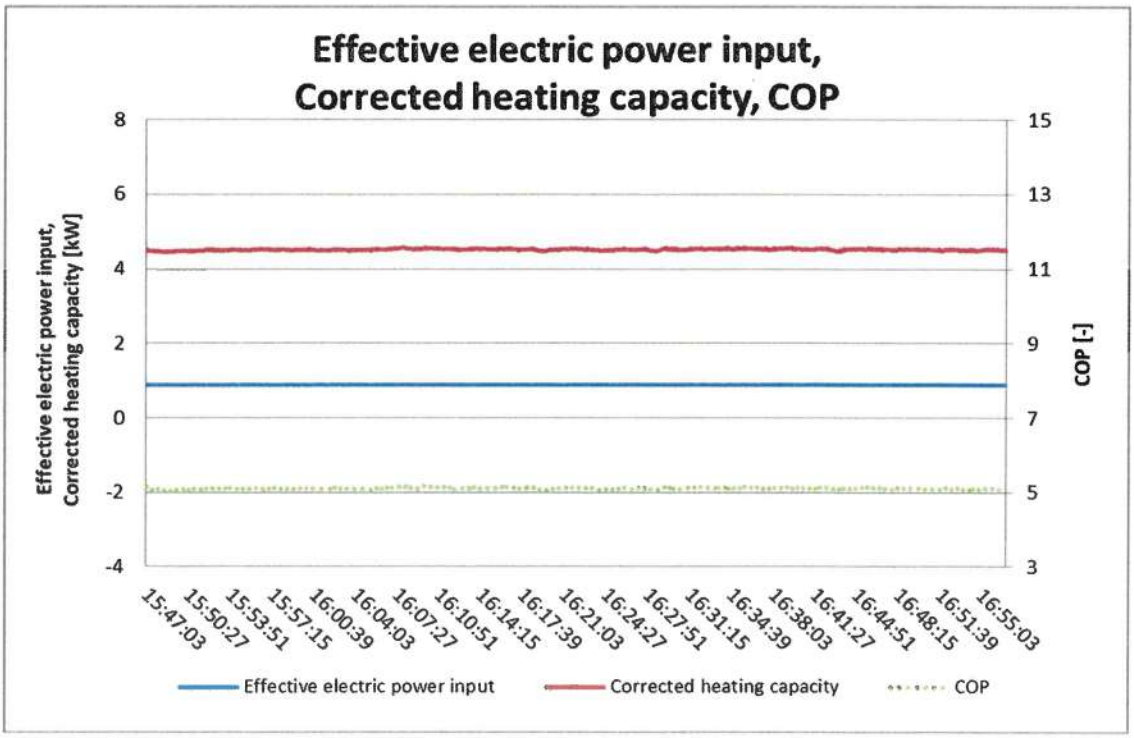
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A2/W42 (35 Hz)



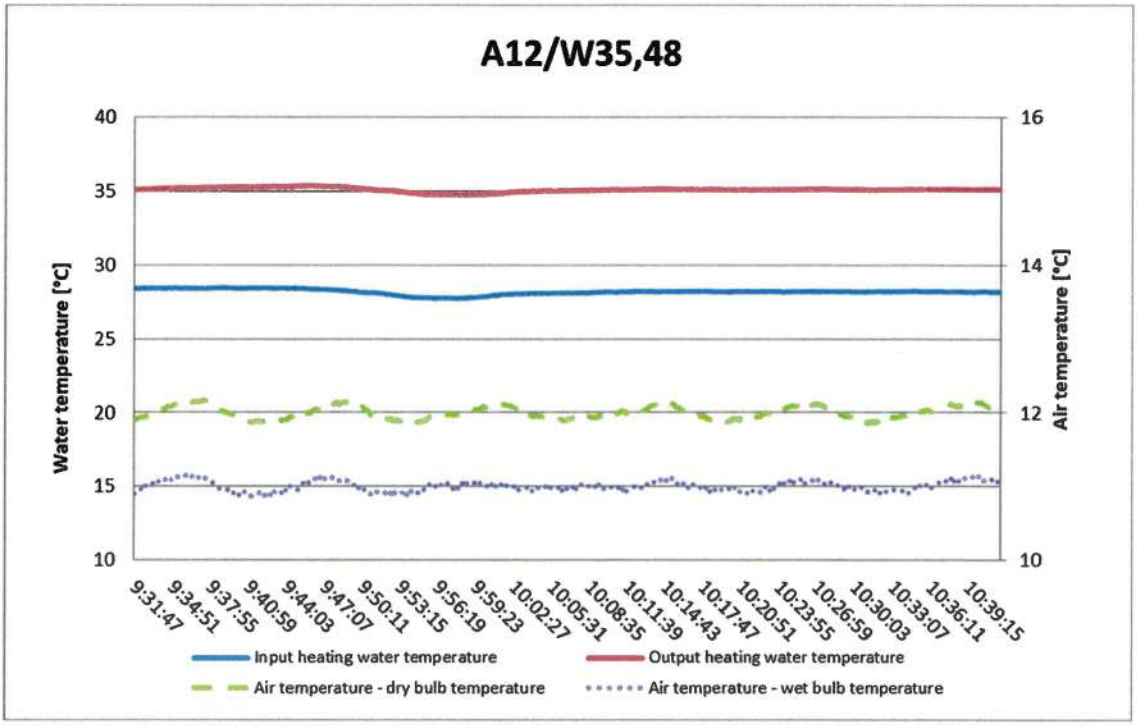


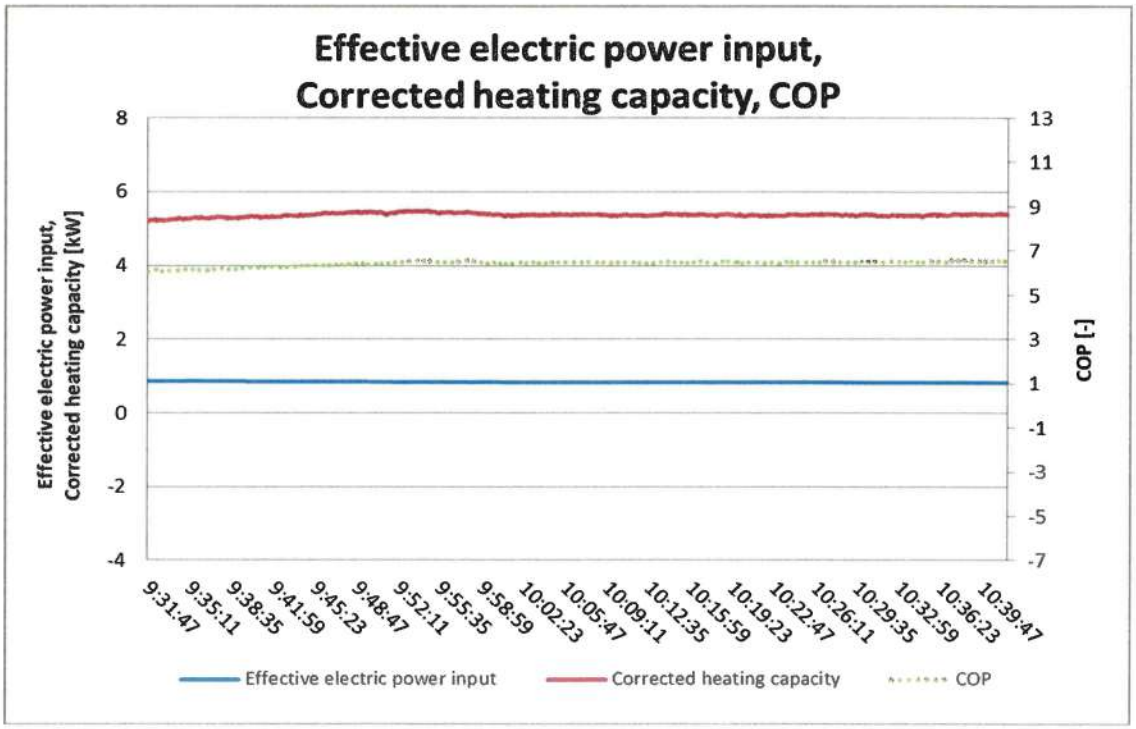
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A7/W36 (21.5 Hz)



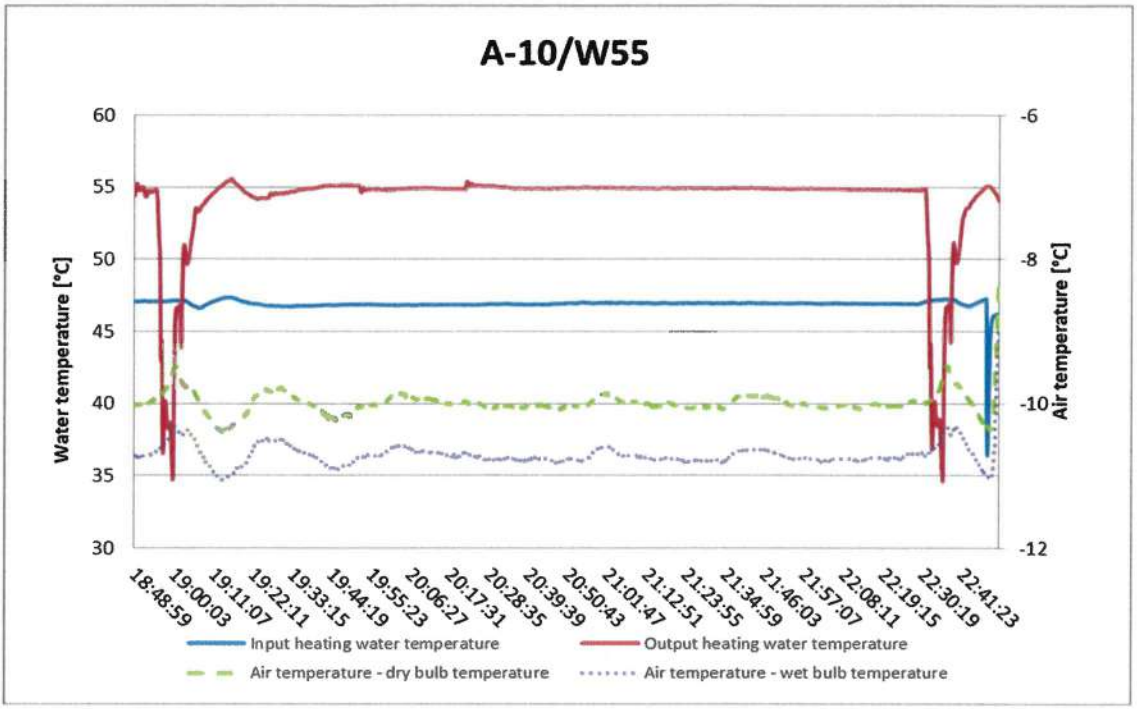


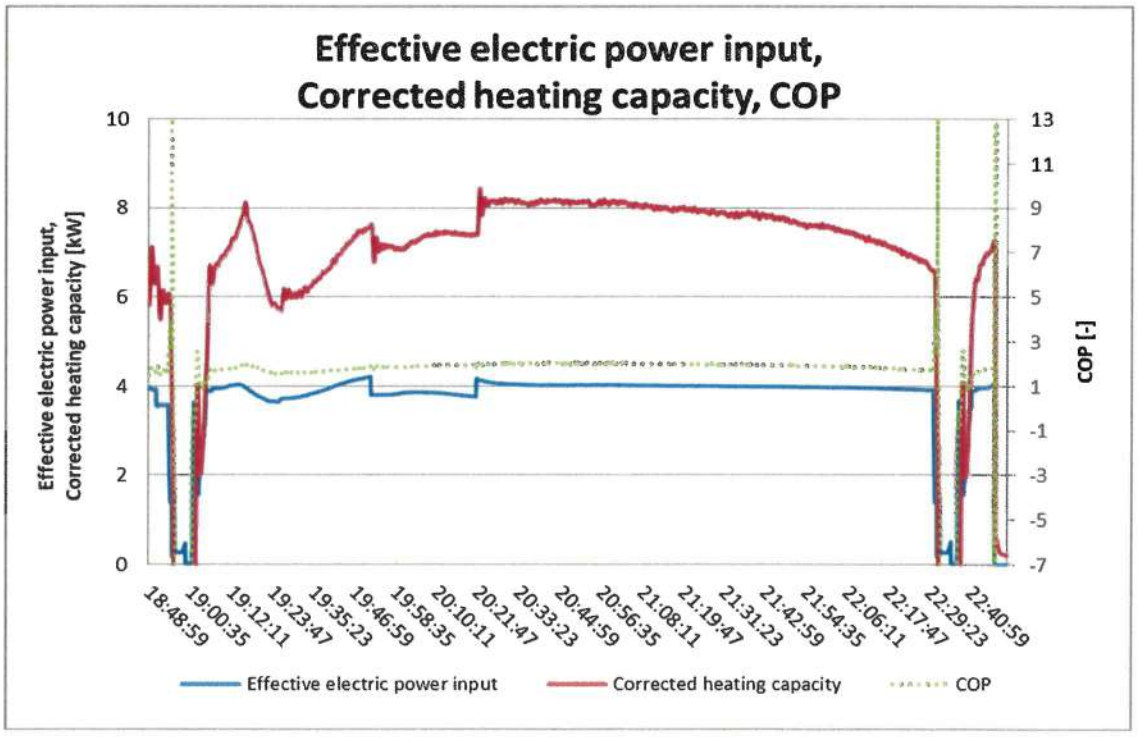
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A12/W35.482 (21.5 Hz)



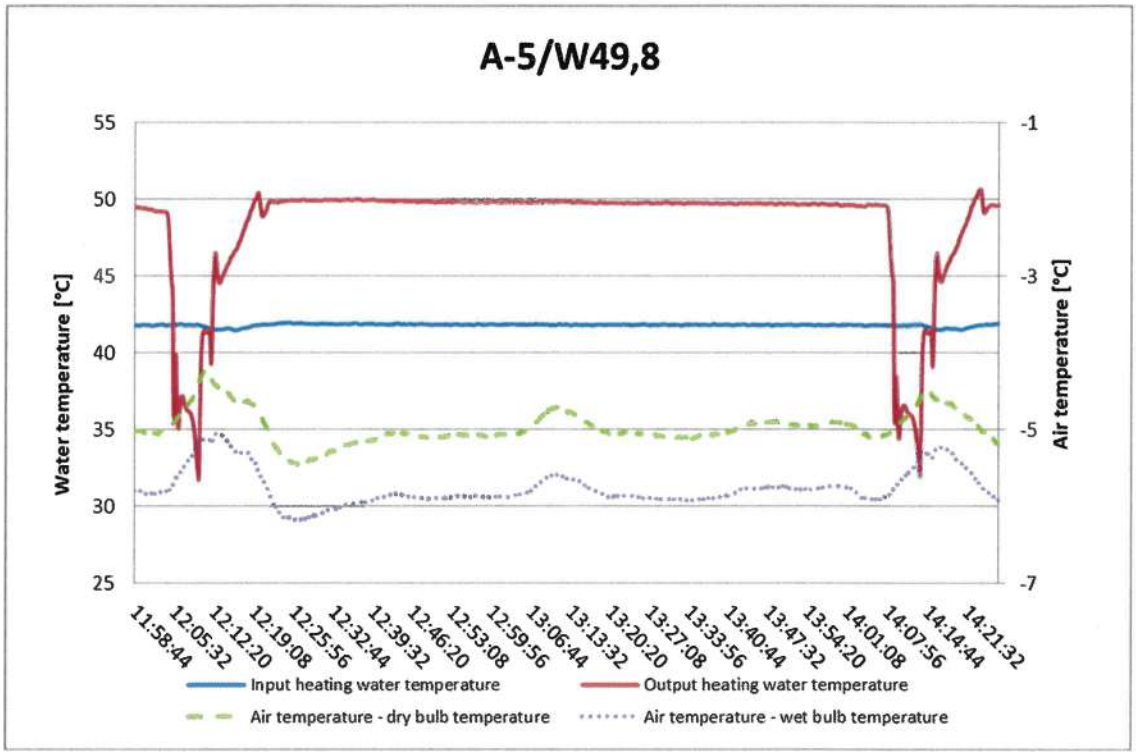


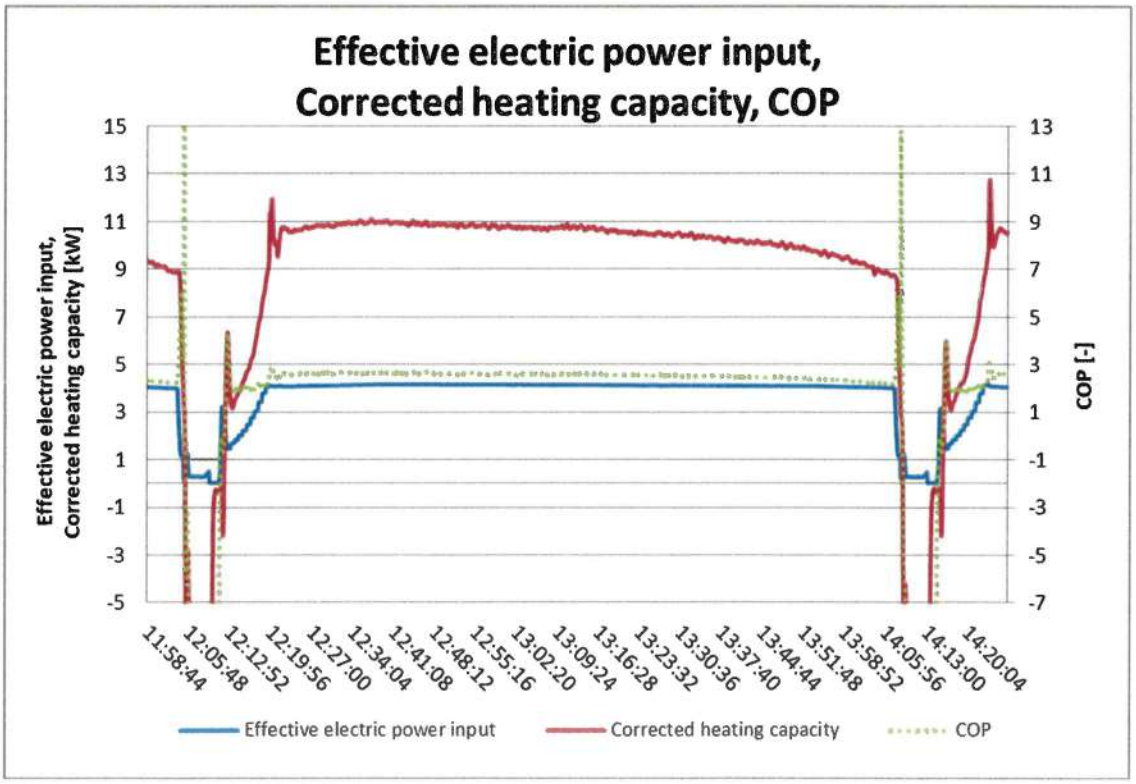
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A-10/W55 (70 Hz)



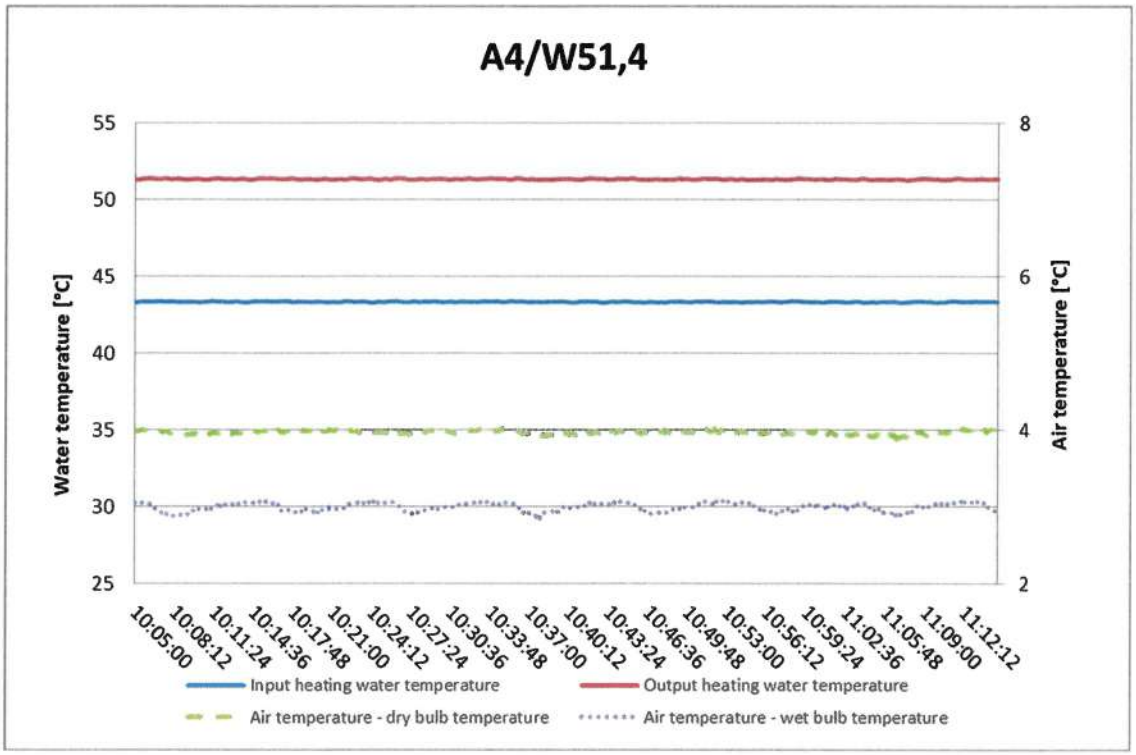


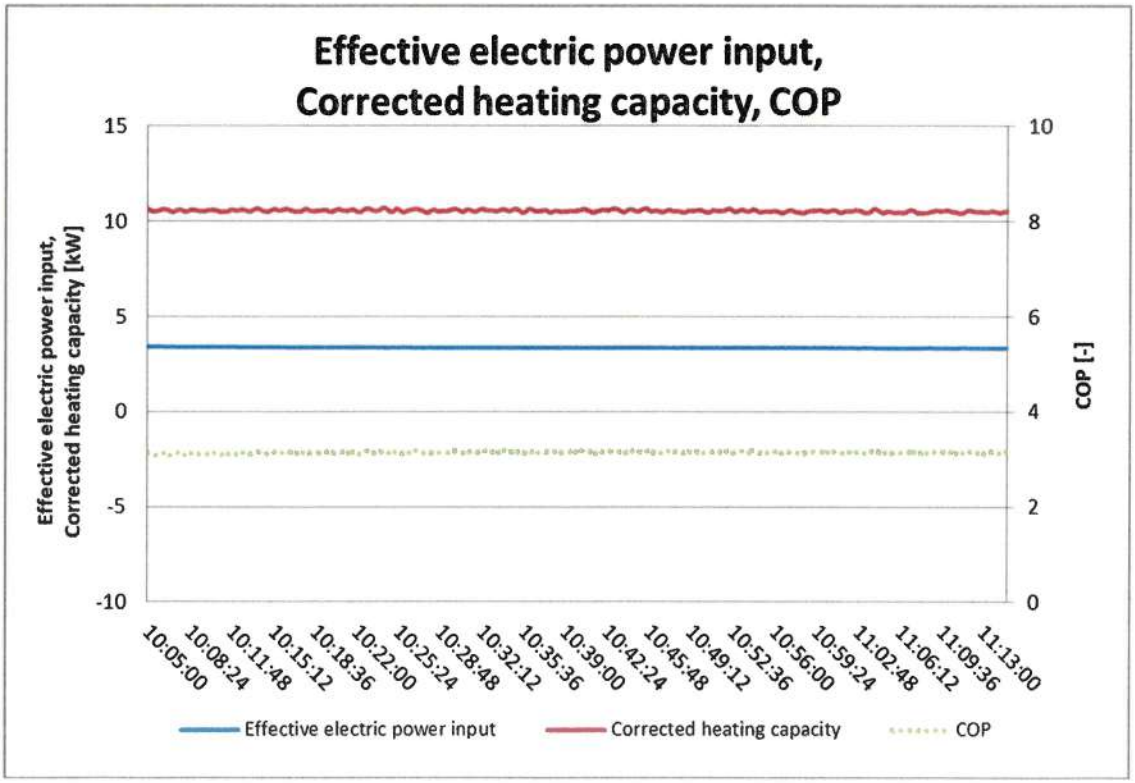
Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A-5/W49.8 (75 Hz)





Heat Pump **ERLA14DAW1 + EBVX16S18D6V:** A4/W51.4 (57.5 Hz)





VI. A list of other referenced documents

- PO number 4531983344/54199 of 2021-07-16 (Order reg. no. B-73750 delivered on 2021-07-20)
- ČSN EN 14511-2:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 2: Test conditions
- ČSN EN 14511-3:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling a process chillers with electrically driven compressors - Part 3: Test methods
- ČSN EN 14511-4:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 4: Requirements
- ČSN EN 14825:2020 - Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling - Testing and rating at part load conditions and calculation of seasonal performance
- Background of the task 39-15801
- Record measurement file: 39-15801 Daikin (HPK Combination).zip

Test Report compiled by: Ing. Michal Faltýnek – Test engineer

Test Report approved by:

Milan Holomek
Head of Heat and Environment-Friendly Equipment
Test Station

Accredited Testing Laboratory No. 1045.1 * STROJÍRENSKÝ ZKUŠEBNÍ ÚSTAV, s.p. * 1

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L 1045.1

TEST REPORT
39-15801/H

Product:	Outdoor Air/Water Heat Pump – split
Type designation	**ERLA14DAW1 + EBVX16S18D6V**
Customer:	Daikin Europe N.V. Zandvoordestraat 300 8400 Oostende BELGIUM
Manufacturer:	Daikin Europe N.V. Zandvoordestraat 300 8400 Oostende BELGIUM
Employee responsible:	Ing. Antonín Kolbábek, Ph.D.
Report issue date:	2021-10-22
Distribution list:	1 copy to the Engineering Test Institute (SZU)

The tests were performed based on these documents:

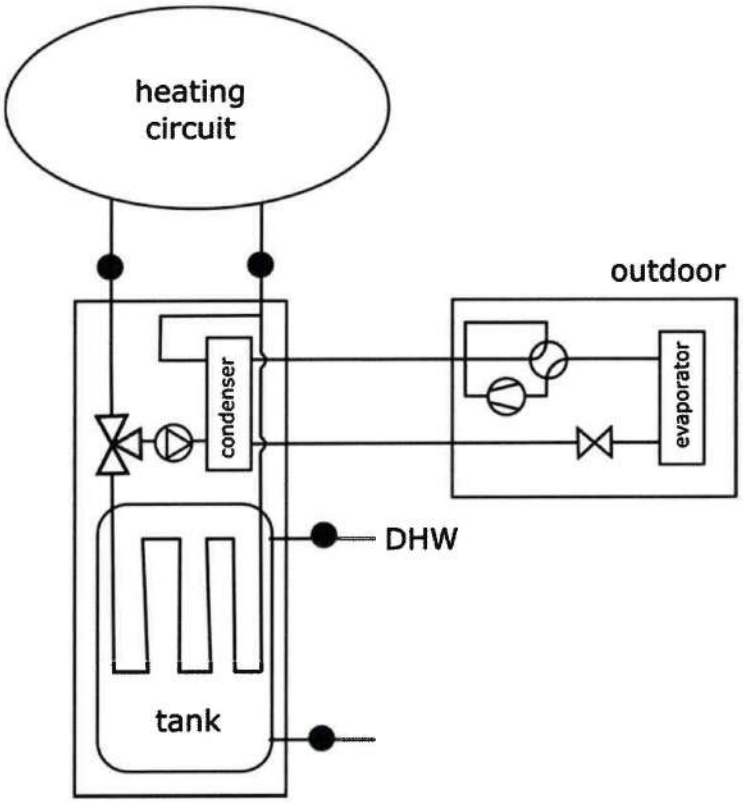
- PO number 4531983344/54199 of 2021-07-16 (Order reg. no. B-73750 delivered on 2021-07-20)

I. Description of product tested

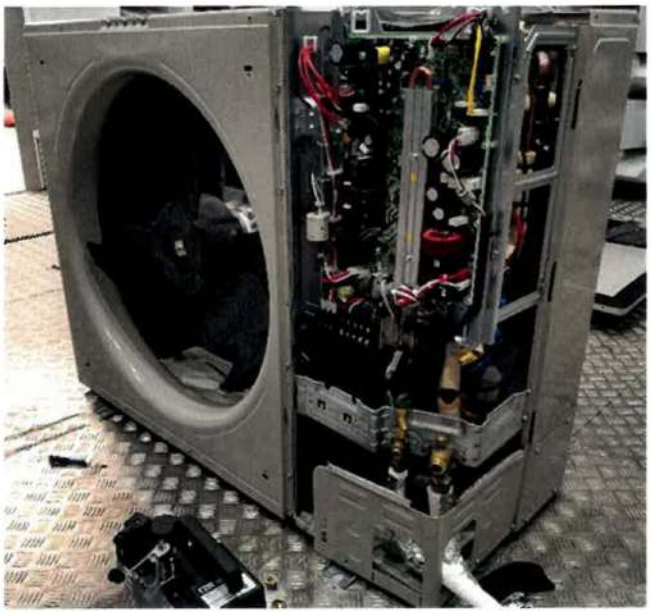
The heat pump **ERLA14DAW1 + EBVX16S18D6V**, supplied by the company **Daikin Europe N.V.**, is structurally adapted to operate in air/water system. Device is designed as a split unit, divided to the outdoor unit **ERLA14DAW1** – most often placed outside on a pedestal – and an indoor unit **EBVX16S18D6V** – for example placed in a technical room.

Outdoor and indoor units are connected by refrigerant pipes and electrical wires. Refrigerant R32 is used with charge 3.80 kg. Power supply is a three-phase. Heat pump is able to work in heating and cooling mode.

Scheme:

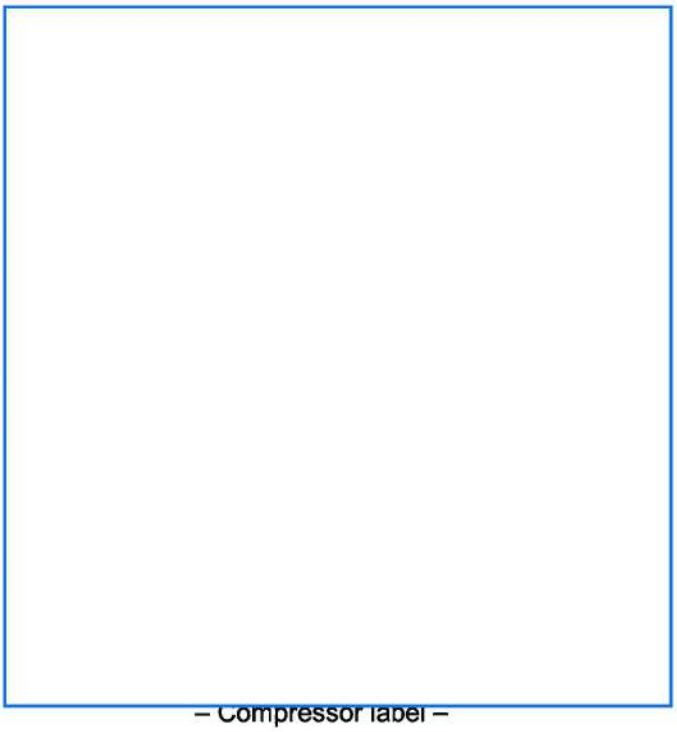


Photos:

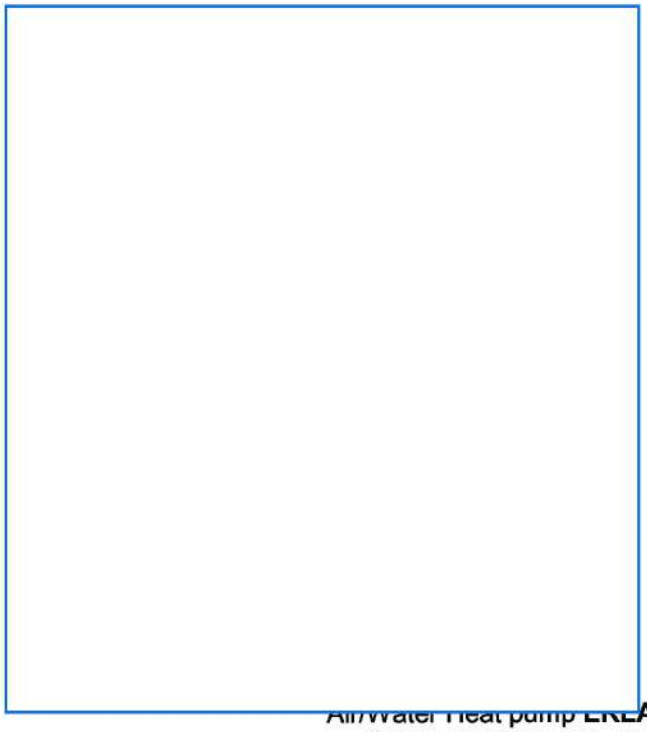


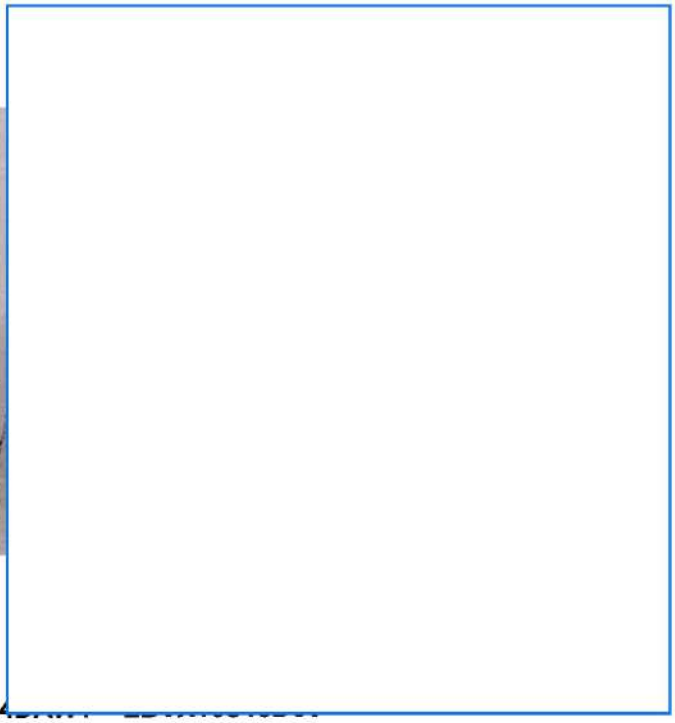
Outdoor unit **ERLA14DAW1**
– Back view with cover */on left/*, Back view without cover */on right/* –

Outdoor unit **ERLA14DAW1**
– Front view with cover –



– Compressor label –





– Outdoor unit label */on left/*, Indoor unit label */on right/* –

Indoor unit **EBVX16S18D6V**
– Front view with cover */on left/*, Front view without cover */on right/* –

II. Sample tested

Reg. No. SZÚ	Product	Date of submission
0213.21.35130.001-002	Air/Water Heat Pump **ERLA14DAW1 + EBVX16S18D6V**	2021-08-06

The visual inspection, tests and verification were carried out by Ing. Antonín Kolbábek, Ph.D. – Test engineer at the test station of SZU.

III. Measuring and testing equipment

The tests were carried out with the use of validly calibrated measuring and test equipment.

No.	Name:	Inventory number:	Calibration valid until:	Accuracy see Calibration Sheet number:
1.	Electrical energy meter	E1.1	05/2031	0003/21
2.	Digital watt meter	1.2.1 ENERGIE ANALYZATOR_1	05/2023	K21050743
3.	Flow meter Krohne Optiflux	8.1.1 TECH_K1_V_DN15	04/2025	6015-KL-P0354-21
4.	Barometer	2.4 MAR18_PB	06/2023	4952/2021
5.	Differential pressure gauge	2.2 1_dP	06/2023	KL-P-0060-21
6.	Temperature-humidity meter HF532	2.1.1. K1 _VLHKOST_1	04/2026	6036-KL-V0122-21
7.	Temperature-humidity meter HF532	2.1.3 K1 _VLHKOST_2	04/2026	6036-KL-V0120-21
8.	Thermometers	2.4 T_K1	05/2022	KL-T-0057-21
9.	Tape measure	ME 475	10/2022	8799/2017
10.	Thermo-hydro meter 608-H1	117043	02/2023	1088F-18
11.	Multi-analyser SINUS SoundBook MK2	000-000-000-875/1	12/2022	6035-OK-Z0084-20
12.	Calibrator G.R.A.S. 42AG	000-000-000-875/3	01/2023	8012-KL-10035-21
13.	Microphone pair G.R.A.S. 40 AK, wind deflector	000-000-000-875/2	11/2022	6035-OL-M0078-20 6035-OL-M0079-20

IV. Test results

Accredited test number:	**M 006***

Test title:	Measurement of noise characteristics
Testing method:	ČSN EN 12102-1:2018; ČSN ISO 9614-2:1997
Sample tested:	Air/Water Heat Pump **ERLA14DAW1 + EBVX16S18D6V**
Measuring equipment used:	see table above
Place of testing:	Engineering Test Institute, Hudcova 424/56b, 621 00 Brno, CZ
Test engineer responsible:	Ing. Antonín Kolbábek, Ph.D.

Uncertainties of measurement for indicated values:

Measured quantity	**Unit**	**Uncertainty of measurement**	**Evaluation**
Liquid			
- temperature difference (dT)	[K]	± 0.15 K	fulfilled
- temperature inlet/outlet	[°C]	± 0.15 K	fulfilled
- volume flow	[m^3/s]	± 1 %	fulfilled
- static pressure difference	[kPa]	± 1 kPa (Δp ≤ 20 kPa) or ± 5 % (Δp > 20 kPa)	fulfilled
Air			
- dry bulb temperature	[°C]	± 0.2 K	fulfilled
- wet bulb temperature	[°C]	± 0.4 K	fulfilled
- volume flow	[m^3/s]	± 5 %	not applied
- static pressure difference	[Pa]	± 5 Pa (Δp ≤ 100 Pa) or ± 5 % (Δp > 100 Pa)	not applied
Refrigerant			
- pressure at compressor outlet	[kPa]	± 1 %	not applied
- temperature	[°C]	± 0.5 K	not applied
Concentration (in volume)			
- heat transfer medium	[%]	± 2	not applied
Electrical quantities			
- electric power	[W]	± 1 %	fulfilled
- voltage	[V]	± 0.5 %	fulfilled
- current	[A]	± 0.5 %	fulfilled
- electric energy	[kWh]	± 1 %	not applied
Compressor rotational speed	[min^{-1}]	± 0.5 %	not applied
The heating or cooling capacities measured on the liquid side shall be determined within a maximum uncertainty of 5 % independent of the individual uncertainties of measurement including the uncertainties on the properties of fluids.			fulfilled

The following expanded measurement uncertainties have been calculated as the coefficient of measurement uncertainty and the expanded coefficient k = 2, which corresponds to a coverage probability of 95% for normal distribution.

If a statement of conformity is given, the decisions rule pursuant to ILAC-G8: 09/2019 Art. 4.2.1 – binary statement for the simple acceptance rule shall be used.

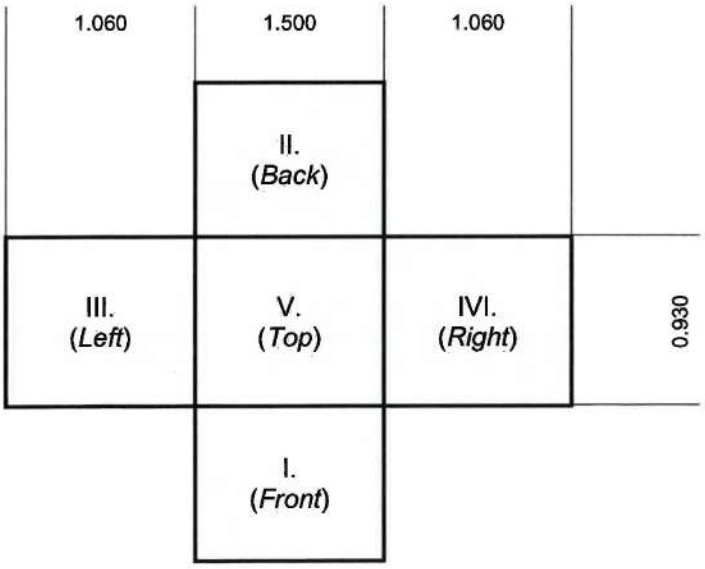
a) Measurement surface

Tested samples were surrounded by a cuboid-shape measuring surface set in distance d [m].

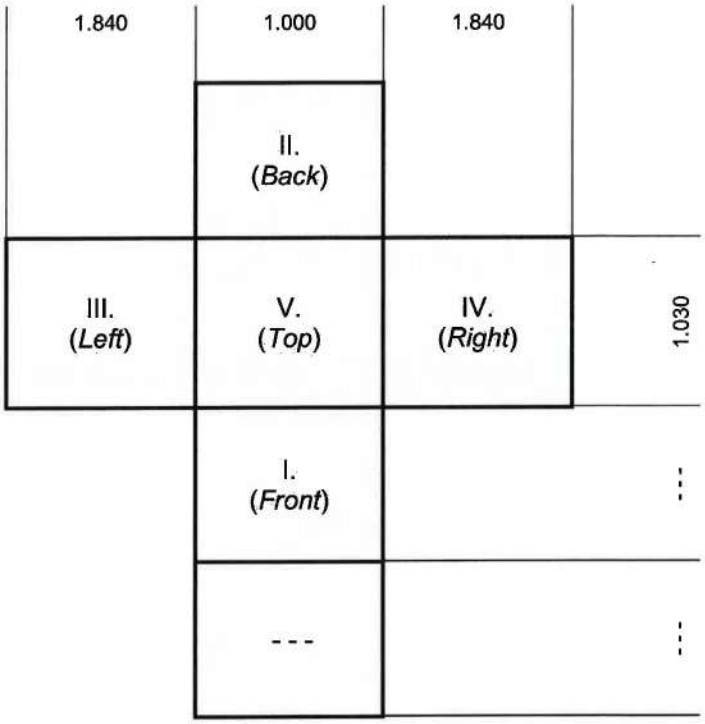
Test sample			**For outdoor unit**	**For indoor unit**
Distance from the test sample	*d*	*[m]*	0.200	0.200
Height of measurement surface	*h*	*[m]*	1.060	1.840
Width of measurement surface	*w*	*[m]*	1.500	1.000
Depth of measurement surface	*l*	*[m]*	0.930	1.030
Total measurement surface area	*S*	*[m^2]*	6.5466	8.4254
Minimal measuring time	t_M	*[s]*	5× 40	5× 40

Sketch of measurement surface (not in scale):

Air/Water Heat Pump **ERLA14DAW1 + EBVX16S18D6V**
– Outdoor unit –



Air/Water Heat Pump **ERLA14DAW1 + EBVX16S18D6V**
– Indoor unit –



Segment V. *(Top)* was reduced into 0.9550 m^2 because of refrigerant and water pipe connections.

b) Acoustic environment

The testing samples were placed inside climatic-chambers (with dimensions see below); on walls and ceiling of the chambers were mounted sound absorption panels. Both samples were placed in the middle of the chamber, at a sufficient distance from the surrounding walls, and were rotated by about 5÷10 °.

Climatic-acoustic chamber *(corresponds to free-field over a reflecting plane)*			**For outdoor unit**	**For indoor unit**
Width of testing chamber	l_1	*[m]*	5.600	3.750
Length of testing chamber	l_2	*[m]*	4.500	4.500
Height of testing chamber	l_3	*[m]*	4.250	4.250

c) Measured and calculated data – General overview:

The measured values are in accordance with ČSN EN 12102-1:2018			YES	
The measured values are in accordance with ČSN ISO 9614-2:1997			YES	
Operation mode			Heating	
Specification of the assessment condition			A7/W55*)	
Type of HP capacity regulation			Inverter	
Control settings of heat pump / compressor			29.5 rps	
Fan speed settings			AUTO	
Water pump settings – secondary circuit			Minimum	
Test sample			Air/Water Heat pump **ERLA14DAW1 + EBVX16S18D6V**	
			– Outdoor unit –	– Indoor unit –
Date of testing			2021-08-30	2021-08-30
Reference air temperature	t_{amb}	*[°C]*	6.9	20.2
Relative humidity of air	*RH*	*[%]*	84.8	57.1
Ambient pressure	p_{amb}	*[hPa]*	981.70	982.50
Overall sound power level (linear)	L_W	*[dB]*	69.0 ± 1.5	47.4 ± 1.5
Overall A-weighted sound power level	L_{WA}	***[dB]***	**59.5 ± 1.5**	**40.5 ± 1.5**
Accuracy class			**Engineering** (grade 2)	**Engineering** (grade 2)

*) *Comment to abbreviated marking: i.e. A7/W55*
A (air), 7 (input air, dry-bulb temperature in °C) / W (water), 55 (outlet heating water temperature in °C)

1A) **Measurement results** – octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Oudoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**

f_m	Criterion 1			Criterion 2		Criterion 3	All criteria passed?	L_W	L_{WA}	U	Evaluation
[Hz]	L_d	F_{pl}	$L_d > F_{pl}$	$F_{+/-}$	$F_{+/-} \leq 3$	$L_{W(1)}-L_{W(2)} \leq 5$		[dB]	[dB(A)]	[dB]	
125	19.8	2.3	YES	0.0	YES	YES	YES	66.7	50.5	± 3.0	passed
250	**21.0**	**1.9**	**YES**	**0.0**	**YES**	**YES**	**YES**	**64.2**	**55.4**	**± 2.0**	**passed**
500	21.7	1.9	YES	0.0	YES	YES	YES	55.8	52.2	± 1.5	passed
1000	21.9	2.0	YES	0.0	YES	YES	YES	52.6	52.5	± 1.5	passed
2000	21.1	3.2	YES	0.0	YES	YES	YES	47.8	48.8	± 1.5	c
4000	20.6	2.4	YES	0.0	YES	YES	YES	41.4	42.4	± 1.5	c
8000**)	20.6	3.4	YES	0.0	YES	YES	YES	36.2	36.1	± 2.5	c
Total								**69.0**	**59.5**	**± 1.5**	

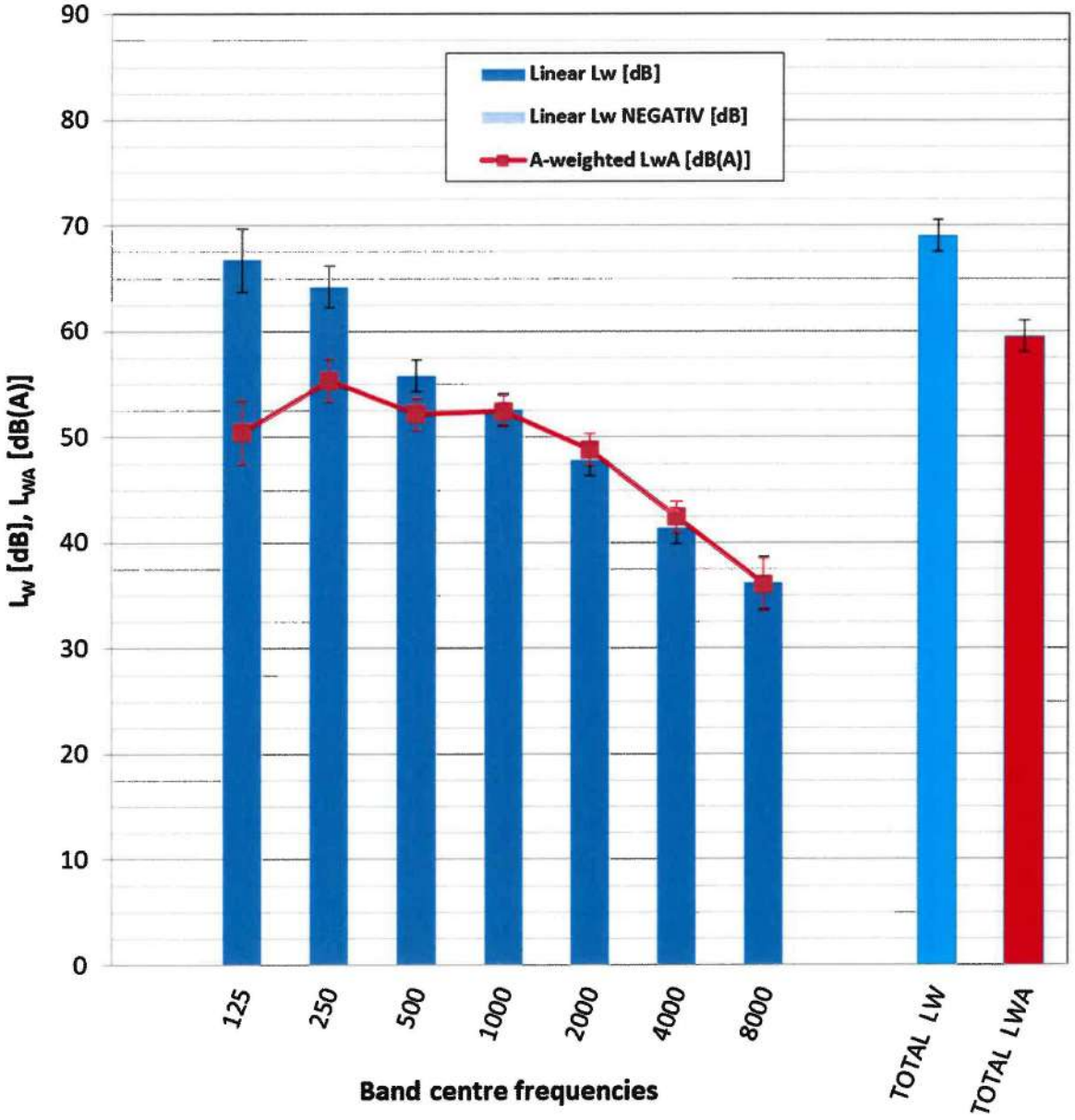
**) *Due to the sound intensity method, the frequency of 6300 Hz was measured only.*

Legend:

passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class is fulfilled in this band.*
not passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class isn't fulfilled in this band.*
c	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. These bands are evaluated in calculating of L_{WA}.*
nc	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. This bands aren't evaluated in calculating of L_{WA}.*

Spectrum of Sound power level L_W – octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Oudoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**



1B) **Measurement results** – one-third octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Oudoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**

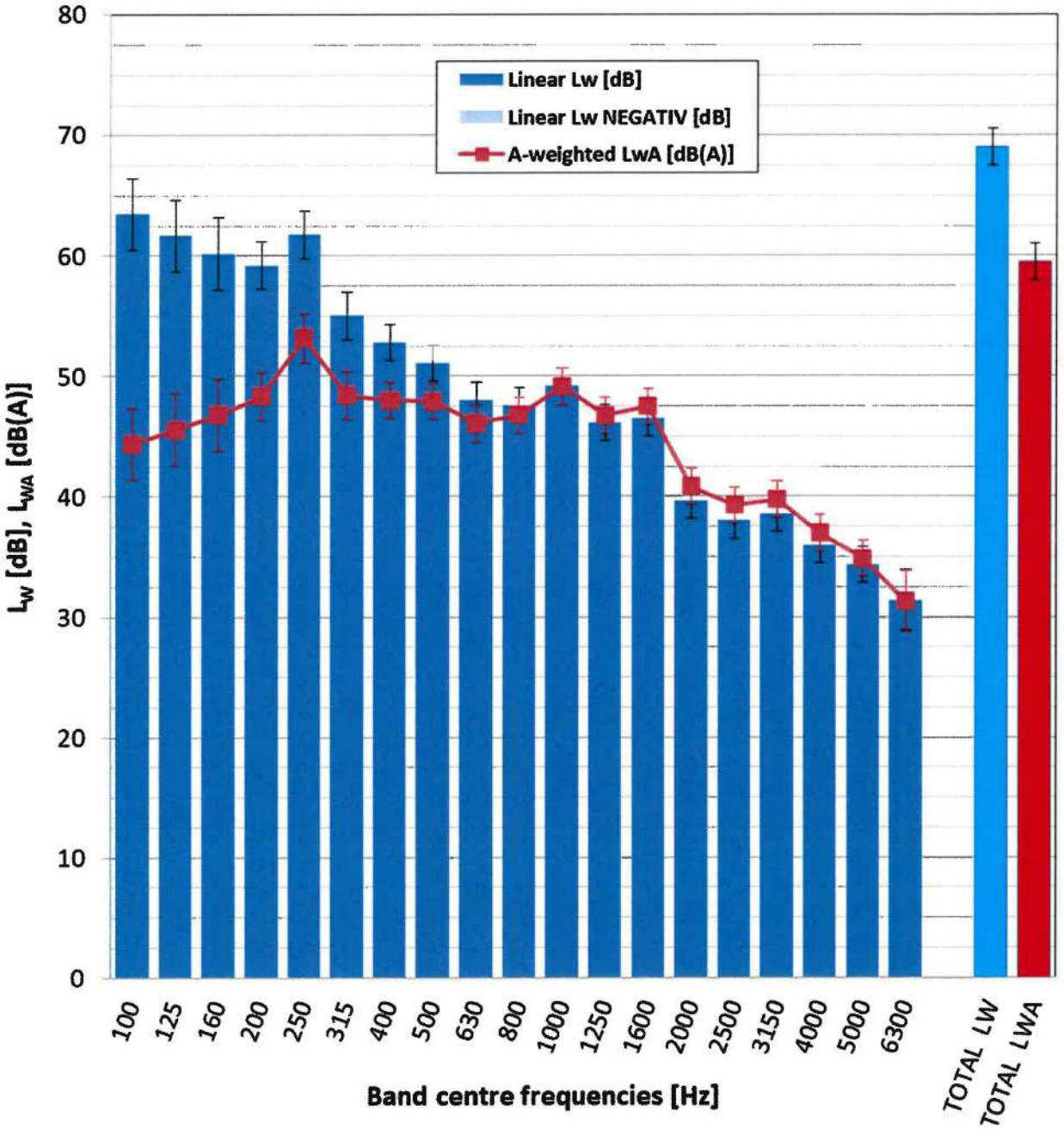
f_m	Criterion 1			Criterion 2		Criterion 3	All criteria passed?	L_W	L_{WA}	U	Evaluation
[Hz]	L_d	F_{pl}	$L_d > F_{pl}$	$F_{+/-}$	$F_{+/-} \leq 3$	$L_{W(1)}-L_{W(2)} \leq s$		[dB]	[dB(A)]	[dB]	
100	20.7	1.7	YES	0.0	YES	YES	YES	63.5	44.4	± 3.0	passed
125	19.8	2.3	YES	0.0	YES	YES	YES	61.7	45.6	± 3.0	passed
160	20.2	1.4	YES	0.0	YES	YES	YES	60.2	46.8	± 3.0	passed
200	20.5	1.1	YES	0.0	YES	YES	YES	59.2	48.3	± 2.0	passed
250	**21.0**	**1.9**	**YES**	**0.0**	**YES**	**YES**	**YES**	**61.8**	**53.2**	**± 2.0**	**passed**
315	21.4	1.5	YES	0.0	YES	YES	YES	55.0	48.4	± 2.0	passed
400	21.5	1.8	YES	0.0	YES	YES	YES	52.8	48.0	± 1.5	passed
500	21.7	1.9	YES	0.0	YES	YES	YES	51.1	47.9	± 1.5	passed
630	21.8	1.8	YES	0.0	YES	YES	YES	48.0	46.1	± 1.5	passed
800	21.8	2.1	YES	0.0	YES	YES	YES	47.6	46.8	± 1.5	passed
1000	21.9	2.0	YES	0.0	YES	YES	YES	49.1	49.1	± 1.5	passed
1250	22.1	2.1	YES	0.0	YES	YES	YES	46.1	46.7	± 1.5	passed
1600	21.5	1.8	YES	0.0	YES	YES	YES	46.5	47.5	± 1.5	passed
2000	21.1	3.2	YES	0.0	YES	YES	YES	39.6	40.8	± 1.5	c
2500	20.8	2.3	YES	0.0	YES	YES	YES	38.0	39.3	± 1.5	c
3150	20.8	2.2	YES	0.0	YES	YES	YES	38.6	39.8	± 1.5	c
4000	20.6	2.4	YES	0.0	YES	YES	YES	36.0	37.0	± 1.5	c
5000	20.4	2.4	YES	0.0	YES	YES	YES	34.3	34.8	± 1.5	c
6300	20.6	3.4	YES	0.0	YES	YES	YES	31.4	31.3	± 2.5	c
Total								**69.0**	**59.5**	**± 1.5**	

Legend:

passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class is fulfilled in this band.*
not passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class isn't fulfilled in this band.*
c	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. These bands are evaluated in calculating of L_{WA}.*
nc	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. This bands aren't evaluated in calculating of L_{WA}.*

Spectrum of Sound power level L_W – one-third octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Oudoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**



2A) **Measurement results** – octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Indoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**

f_m	Criterion 1			Criterion 2		Criterion 3	All criteria passed?	L_W	L_{WA}	U	Evaluation
[Hz]	L_d	F_{pl}	$L_d > F_{pl}$	$F_{+/-}$	$F_{+/-} \leq 3$	$L_{W(1)}-L_{W(2)} \leq s$		[dB]	[dB(A)]	[dB]	
125	20.8	2.1	YES	0.0	YES	YES	YES	42.6	27.1	± 3.0	c
250	**21.1**	**3.0**	**YES**	**0.0**	**YES**	**YES**	**YES**	**44.9**	**38.0**	**± 2.0**	**passed**
500	21.9	5.3	YES	0.4	YES	YES	YES	34.1	29.8	± 1.5	passed
1000	21.7	4.8	YES	0.0	YES	YES	YES	32.8	32.9	± 1.5	passed
2000	20.7	5.6	YES	0.0	YES	YES	YES	29.2	30.3	± 1.5	passed
4000	20.5	8.0	YES	0.0	YES	YES	YES	24.6	25.7	± 1.5	c
8000**)	20.5	13.7	YES	2.6	YES	YES	YES	19.7	19.6	± 2.5	c
Total								**47.4**	**40.5**	**± 1.5**	

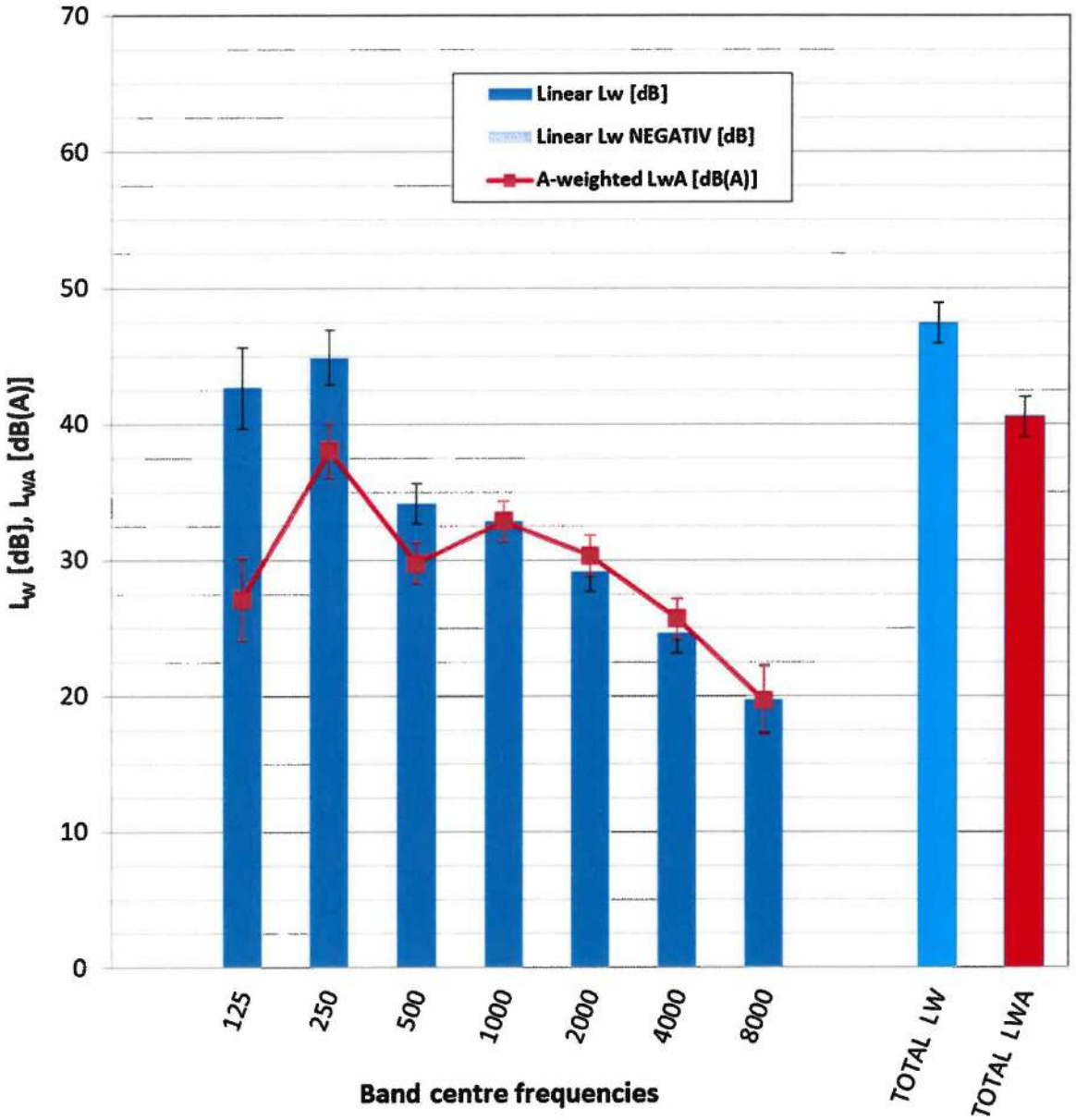
**) *Due to the sound intensity method, the frequency of 6300 Hz was measured only.*

Legend:

passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class is fulfilled in this band.*
not passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class isn't fulfilled in this band.*
c	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. These bands are evaluated in calculating of L_{WA}.*
nc	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. This bands aren't evaluated in calculating of L_{WA}.*

Spectrum of Sound power level L_W – octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Indoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**



2B) **Measurement results** – one-third octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Indoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**

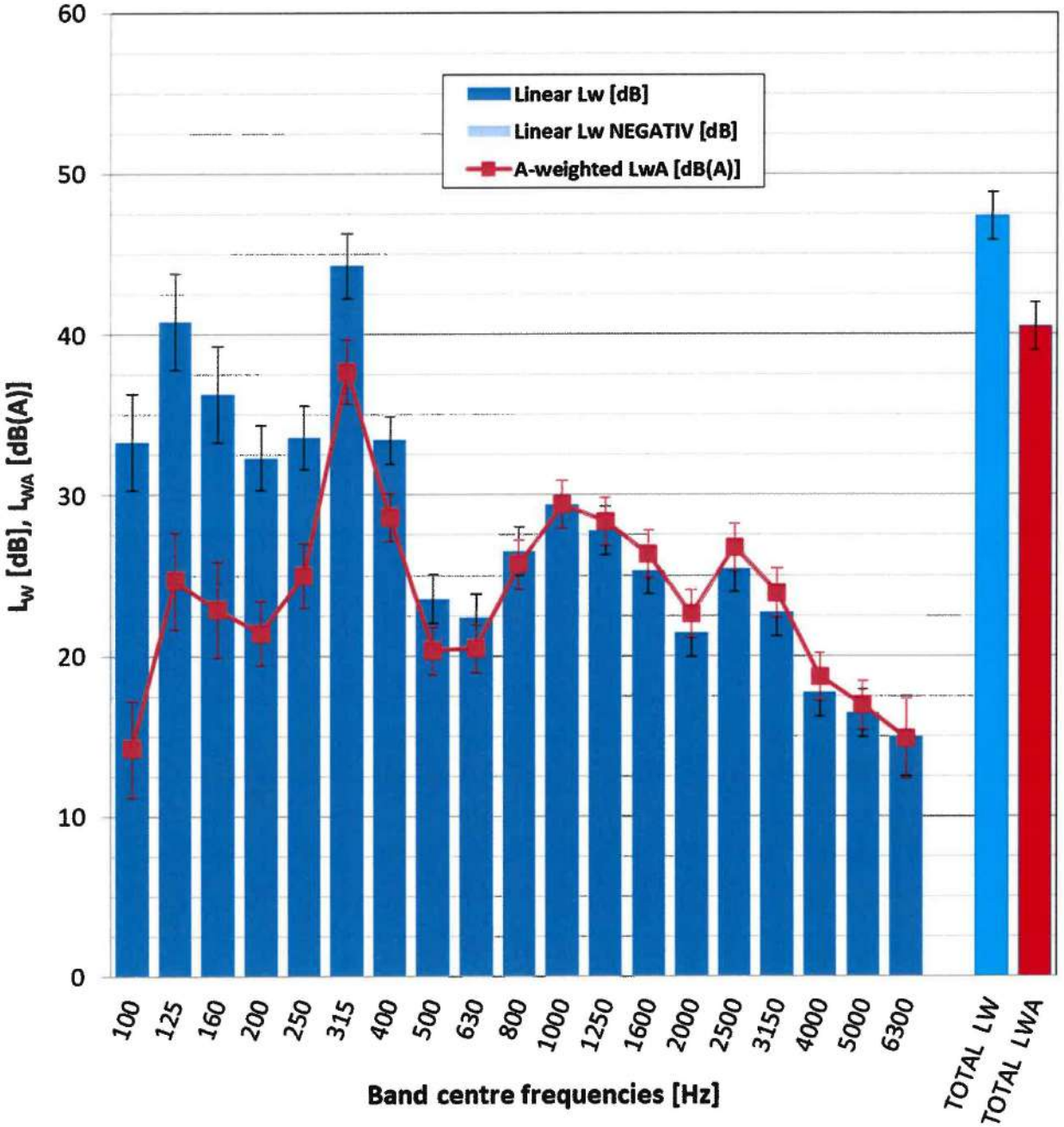
f_m	Criterion 1			Criterion 2		Criterion 3	All criteria passed?	L_W	L_{WA}	U	Evaluation
[Hz]	L_d	F_{pl}	$L_d > F_{pl}$	$F_{+/-}$	$F_{+/-} \leq 3$	$L_{W(1)}-L_{W(2)} \leq s$		[dB]	[dB(A)]	[dB]	
100	20.6	13.5	YES	2.2	YES	YES	YES	33.3	14.2	± 3.0	c
125	20.8	2.1	YES	0.0	YES	YES	YES	40.8	24.7	± 3.0	c
160	20.7	2.4	YES	0.0	YES	YES	YES	36.3	22.9	± 3.0	c
200	20.7	2.4	YES	0.0	YES	YES	YES	32.3	21.4	± 2.0	c
250	21.1	3.0	YES	0.0	YES	YES	YES	33.6	25.0	± 2.0	c
315	**21.2**	**0.7**	**YES**	**0.0**	**YES**	**YES**	**YES**	**44.3**	**37.7**	**± 2.0**	**passed**
400	21.6	1.4	YES	0.1	YES	YES	YES	33.4	28.6	± 1.5	passed
500	21.9	5.3	YES	0.4	YES	YES	YES	23.5	20.3	± 1.5	c
630	22.3	4.8	YES	1.1	YES	YES	YES	22.3	20.4	± 1.5	c
800	21.9	1.3	YES	0.0	YES	YES	YES	26.5	25.7	± 1.5	c
1000	21.7	4.8	YES	0.0	YES	YES	YES	29.4	29.4	± 1.5	passed
1250	22.3	6.2	YES	0.0	YES	YES	YES	27.8	28.4	± 1.5	passed
1600	21.8	5.7	YES	0.0	YES	YES	YES	25.3	26.3	± 1.5	c
2000	20.7	5.6	YES	0.0	YES	YES	YES	21.4	22.6	± 1.5	c
2500	20.8	4.0	YES	0.0	YES	YES	YES	25.4	26.7	± 1.5	c
3150	20.8	4.1	YES	0.0	YES	YES	YES	22.7	23.9	± 1.5	c
4000	20.5	8.0	YES	0.0	YES	YES	YES	17.7	18.7	± 1.5	c
5000	20.3	8.6	YES	0.0	YES	YES	YES	16.4	16.9	± 1.5	c
6300	20.5	13.7	YES	2.6	YES	YES	YES	15.0	14.9	± 2.5	c
Total								**47.4**	**40.5**	**± 1.5**	

Legend:

passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class is fulfilled in this band.*
not passed	*Third frequency bands with this description are significant for calculation of A-weighted total sound power level L_{WA}. Required accuracy class isn't fulfilled in this band.*
c	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. These bands are evaluated in calculating of L_{WA}.*
nc	*Third frequency bands with this description are not significant for calculating of A-weighted total sound power level L_{WA}. This bands aren't evaluated in calculating of L_{WA}.*

Spectrum of Sound power level L_W – one-third octave bands

Heat Pump **ERLA14DAW1 + EBVX16S18D6V** – Indoor unit at A7/W55 */ Compressor: 29.5 rps, Fan: AUTO, Water pump: Minimum /*	**Engineering (grade 2)**



Tested and reviewed by: Ing. Antonín Kolbábek, Ph.D. Date: 2021-10-20 Signed:

V. A list of other referenced documents

- PO number 4531983344/54199 of 2021-07-16 (Order reg. no. B-73750 delivered on 2021-07-20)

- ČSN EN 14511-2:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 2: Test conditions
- ČSN EN 14511-3:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling a process chillers with electrically driven compressors - Part 3: Test methods
- ČSN EN 14511-4:2019 - Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 4: Requirements
- ČSN EN 14825:2020 - Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling - Testing and rating at part load conditions and calculation of seasonal performance

- ČSN EN 12102-1:2018 - Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors - Determination of the sound power level - Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers
- ČSN ISO 9614-2:1997 - Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning

- Background of the SZÚ task No. 39-15801

- Record measurement file: 39-15801 Daikin (HPK Combination).zip

Test Report compiled by:
Ing. Antonín Kolbábek, Ph.D. – Head of Acoustics and Ventilation systems department / Test engineer

Test Report approved by:

Milan Holomek
Head of Heat and Environment-Friendly
Equipment Test Station

-End of text-

b) Sezonowe testy wydajności i obliczenia SCOP - zastosowanie niskotemperaturowe w referencyjnych sezonach grzewczych:

„A" = umiarkowany (referencyjna temperatura wody 35°C, referencyjne warunki projektowe dla ogrzewania Tdesignh = -10 °C)
„W" = ciepły (referencyjna temperatura wody 35°C, referencyjne warunki projektowe dla ogrzewania Tdesignh = +2 °C)
„C" = chłodny (referencyjna temperatura wody 35°C, referencyjne warunki projektowe dla ogrzewania Tdesignh = -22 °C)

Model	**Pompa ciepła ERLA14DW1 + EBVXS18D6V**
Konstrukcja	Split powietrze/woda

Specyfikacja warunków zgodnie z ČSN EN 14825:2020	Temperatura zastosowania	**Niska** (referencyjna temperatura wody 35°C)
	Referencyjny sezon grzewczy	**A, W,C**
	Temp. wody na wylocie – wymiennik ciepła jednostki wewn.	Zmienna
	Sterowanie prędkością sprężarki	Zmienna
	Natężenie przepływu wody – obieg pierwotny	–
	Natężenie przepływu wody – obieg wtórny	Zmienna

Sezonowa efektywność energetyczna ogrzewania pomieszczeń	Ogrzewanie	Umiarkowany	η_s / A	**198,7**	%
		Ciepły	η_s / W	–	%
		Chłodny	η_s / C	–	%
Efektywność sezonowa zgodnie z ČSN EN 14825:2020	Ogrzewanie	Umiarkowany	**SCOP/A**	**5,04**	–
		Ciepły	SCOP/W	–	–
		Chłodny	SCOP/c	–	–

Funkcja	Chłodzenie			Tak	
	Ogrzewanie	Tak	Referencyjny sezon grzewczy: Umiarkowany	Tak	
			Ciepły (jeśli wyznaczono)	Tak	
			Chłodny (jeśli wyznaczono)	Tak	

Pełne obciążenie grzewcze	Chłodzenie		$P_{designc}$	–		kW
	Ogrzewanie	Umiarkowany	$P_{designh}$	**11,00**	(dekl.)	kW
		Ciepły	$P_{designh}$	**11,00**	(dekl.)	kW
		Chłodny	$P_{designh}$	–		kW
Punkty biwalentne	Ogrzewanie	Umiarkowany	$T_{bivalent}$	-7		°C
		Ciepły	$T_{bivalent}$	2		°C
		Chłodny	$T_{bivalent}$	-		°C
Graniczne temperatury pracy	Ogrzewanie	Umiarkowany	TOL	-10		°C
		Ciepły	TOL	2		°C
		Chłodny	TOL	–		°C
Sezonowy pobór mocy zgodnie z ČSN EN 14825:2020	Chłodzenie		Q_{CE}	–		kWh
	Ogrzewanie	Umiarkowany	Q_{HE}/A	4506		kWh
		Ciepły	Q_{HE}/W	–		kWh
		Chłodny	Q_{HE}/C	–		kWh

Tryby inne niż „tryb aktywny"	Tryb wyłączony	P_{OFF}	21,0	W
	Tryb wyłączenia termostatu	P_{TO}	20,7	W
	Tryb gotowości	P_{SB}	21,0	W
	Tryb grzałki karteru	P_{CK}	0,0	W

(dekl.): Dane techniczne zostały zadeklarowane przez Producenta.

Dane do obliczenia SCOP (pompa ciepła **ERLA14DAW1 + EBVX16S18D6V**)
- Zastosowanie w niskich temperaturach (referencyjna temperatura wody 35°C)
- Referencyjny sezon grzewczy „A" - umiarkowany

	Zewnętrzny wymiennik ciepła	Wewnętrzny wymiennik ciepła	Współczynnik obciążenia częściowego	Obciążenie częściowe	DC Deklarowana wydajność	COPd przy deklarowanej wydajności	Współczynnik strat Cdh	CR	COPbin (Tj)	Efekt. pobór mocy w stanie wyłączenia sprężarki
	Wlot powietrza zewnętrznego	Temperatura wody na wylocie								
	[°C]	[°C]	[%]	[kW]	[kW]	[-]	H	H	H	[kW]
A	-7	34,00	88,46	9,73	9,695	3,155	0,900	1,00	3,155	–
B	2	30,00	53,85	5,92	6,302	4,886	0,900	1,00	4,886	–
C	7	28,00	34,62	3,81	4,758	6,817	0,970	0,80	6,767	0,0207
D	12	27,48	15,38	1,69	5,552	8,613	0,968	0,31	8,025	0,0207
TOL (E)	-10	35,00	100,00	11,00	9,183	2,889	0,900	1,00	2,889	–
Tbiv (F)	-7	34,00	88,46	9,73	9,685	3,167	0,900	1,00	3,167	–

Dostosowanie temperatury wody - zgodnie z ČSN EN 14825:2020, załącznik F
- Zastosowanie w niskich temperaturach (referencyjna temperatura wody 35°C)
- Referencyjny sezon „A" - umiarkowany
- Warunek D
- Zmienny przepływ wody – obieg wtórny

Ogólne wzory i wyprowadzenie:

$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (t_{outlet,\ capacity\ test} - t_{inlet,\ capacity\ test}) \cdot CR$ [°C]

$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (\Delta t) \cdot CR$ [°C]

$t_{outlet,\ average} = t_{outlet,\ capacity\ test} - \Delta t + \Delta t \cdot CR$ [°C]

$t_{outlet,\ capacity\ test} = t_{outlet,\ average} + \Delta t - \Delta t \cdot CR$ [°C]

Dla przepływu zmiennego:

$\Delta t = 5$

CR Δt = Częściowe obciążenie / Deklarowana wydajność • 5

$t_{outlet,\ capacity\ test,\ variable\ flow} = t_{outlet,\ average} + 5$ - Częściowe obciążenie / Deklarowana wydajność • 5

Zmierzone dane:

$t_{outlet,\ average}$	24,00	[°C]
Deklarowana wydajność	5,552	[kW]
Deklarowana wydajność standardowy warunek znamionowy A7/W35	-	[kW]
Obciążenie częściowe	1,69	[kW]

Obliczenie temperatury wody

$t_{outlet,\ capacity\ test,\ variable\ flow} = = 24 + 5 - 1,69 / 5,552 \cdot 5 = 27,48$ [°C]

c) Sezonowe testy wydajności i obliczenia SCOP - zastosowanie średniotemperaturowe w referencyjnych sezonach grzewczych:

„A" = umiarkowany (referencyjna temperatura wody 55 °C, referencyjne warunki projektowe dla ogrzewania Tdesignh = -10 °C)
„W" = ciepły (referencyjna temperatura wody 55 °C, referencyjne warunki projektowe dla ogrzewania Tdesignh = +2 °C)
„C" = chłodny (referencyjna temperatura wody 55 °C, referencyjne warunki projektowe dla ogrzewania Tdesignh = -22 °C)

Model				**Pompa ciepła ERLA14DAW1 + EBVX16S18D6V**		
Konstrukcja				Split powietrze/woda		
Specyfikacja warunków zgodnie z ČSN EN 14825:2020	Temperatura zastosowania			**Średnia** (referencyjna temperatura wody 55°C)		
	Referencyjny sezon grzewczy			**A, W,C**		
	Temp. wody na wylocie – wymiennik ciepła jednostki wewn.			Zmienna		
	Sterowanie prędkością sprężarki			Zmienna		
	Natężenie przepływu wody – obieg pierwotny			–		
	Natężenie przepływu wody – obieg wtórny			Zmienna		
Sezonowa efektywność energetyczna ogrzewania pomieszczeń	Ogrzewanie	Umiarkowany	η_s / A	**143,4**		%
		Ciepły	η_s/W	–		%
		Chłodny	η_s / C	–		%
Efektywność sezonowa zgodnie z ČSN EN 14825:2020	Ogrzewanie	Umiarkowany	**SCOP/A**	**3,66**		-
		Ciepły	SCOP/w	–		-
		Chłodny	SCOP/c	–		-
Funkcja	Chłodzenie			Tak		
	Ogrzewanie	Tak	Referencyjny sezon grzewczy: Umiarkowany	Tak		
			Ciepły (jeśli wyznaczono)	Tak		
			Chłodny (jeśli wyznaczono)	Tak		
Pełne obciążenie grzewcze	Chłodzenie		$P_{designc}$	-		kW
	Ogrzewanie	Umiarkowany	$P_{designh}$	**11,00**	(dekl.)	kW
		Ciepły	$P_{designh}$	**12,10**	(dekl.)	kW
		Chłodny	$P_{designh}$	–		kW
Punkty biwalentne	Ogrzewanie	Umiarkowany	$T_{bivalent}$	-5		°C
		Ciepły	$T_{bivalent}$	4		°C
		Chłodny	$T_{bivalent}$	–		°C
Graniczne temperatury pracy	Ogrzewanie	Umiarkowany	TOL	-10		°C
		Ciepły	TOL	2		°C
		Chłodny	TOL	–		°C
Sezonowy pobór mocy zgodnie z ČSN EN 14825:2020	Chłodzenie		Q_{CE}	–		kWh
	Ogrzewanie	Umiarkowany	Q_{HE}/A	6207		kWh
		Ciepły	Q_{HE}/W	–		kWh
		Chłodny	Q_{HE}/C	–		kWh
Tryby inne niż „tryb aktywny"	Tryb wyłączony		P_{OFF}	21,0		W
	Tryb wyłączenia termostatu		P_{TO}	20,7		W
	Tryb gotowości		P_{SB}	21,0		W
	Tryb grzałki karteru		P_{CK}	0,0		W

(dekl.): Dane techniczne zostały zadeklarowane przez Producenta.

Dane do obliczenia SCOP (pompa ciepła **ERLA14DAW1 + EBVX16S18D6V**)
- Zastosowanie w średnich temperaturach (referencyjna temperatura wody 55°C)
- Referencyjny sezon grzewczy „A" - umiarkowany

	Zewnętrzny wymiennik ciepła	Wewnętrzny wymiennik ciepła	Współczynnik obciążenia częściowego	Obciążenie częściowe	DC Deklarowana wydajność	COPd przy deklarowanej wydajności	Współczynnik strat Cdh	CR	COPbin CO)	Efekt. pobór mocy w stanie wyłączenia sprężarki
	Wlot powietrza zewnętrznego	Temperatura wody na wylocie								
	[°C]	[°C]	[%]	[kW]	[kW]	H	[-]	H	[-]	[kW]
A	-7	52,00	88,46	9,73	9,386	2,202	0,900	1,00	2,202	–
B	2	42,00	53,85	5,92	6,368	3,568	0,900	1,00	3,568	–
C	7	37,23	34,62	3,81	4,497	5,219	0,976	0,85	5,196	0,0207
D	12	35,48	15,38	1,69	5,369	6,419	0,975	0,32	6,091	0,0207
TOL (E)	-10	55,00	100,00	11,00	7,008	1,836	0,900	1,00	1,836	–
Tbiv (F)	-5	49,78	80,77	8,88	9,193	2,424	0,900	1,00	2,424	–

Dostosowanie temperatury wody - zgodnie z ČSN EN 14825:2020, załącznik F
- Zastosowanie w średnich temperaturach (referencyjna temperatura wody 55°C)
- Referencyjny sezon „A" - umiarkowany
- Warunek D
- Zmienny przepływ wody – obieg wtórny

Ogólne wzory i wyprowadzenie:

$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (t_{outlet,\ capacity\ test} - t_{inlet,\ capacity\ test}) \cdot CR$ [°C]
$t_{outlet,\ average} = t_{inlet,\ capacity\ test} + (\Delta t) \cdot CR$ [°C]
$t_{outlet,\ average} = t_{outlet,\ capacity\ test} - \Delta t + \Delta t \cdot CR$ [°C]
$t_{outlet,\ capacity\ test} = t_{outlet,\ average} + \Delta t - \Delta t \cdot CR$ [°C]

Dla przepływu zmiennego:
$\Delta t = 8$
CR Δt = Częściowe obciążenie / Deklarowana wydajność • 8
$t_{outlet,\ capacity\ test,\ variable\ flow} = t_{outlet,\ average} + 8$ - Częściowe obciążenie / Deklarowana wydajność • 8

Zmierzone dane:

$t_{outlet,\ average}$	30,00	[°C]
Deklarowana wydajność	5,369	[kW]
Deklarowana wydajność standardowa, warunek A7/W35	-	[kW]
Obciążenie częściowe	1,69	[kW]

Obliczenie temperatury wody

$t_{outlet,\ capacity\ test,\ variable\ flow} = = 30 + 8 - 1,69 / 5,369 \cdot 8 = 35,48$ [°C]

c) Dane zmierzone i obliczone - Przegląd ogólny:

Zmierzone wartości są zgodne z ČSN EN 12102-1:2018			TAK	
Zmierzone wartości są zgodne z ČSN ISO 9614-2:1997			TAK	
Tryb działania			Ogrzewanie	
Specyfikacja warunku oceny			A7/W55*)	
Rodzaj regulacji wydajności pompy ciepła			inwerter	
Ustawienia sterowania pompy ciepła/sprężarki			29,5 obr./s	
Ustawienia prędkości wentylatora			AUTO	
Ustawienia pompy wodnej – obieg wtórny			Minimum	
Próbka badana			Pompa ciepła powietrze/woda **ERLA14DAW1 + EBVX16S18D6V**	
			- Jednostka zewnętrzna -	- Jednostka wewnętrzna -
Data testu			2021-08-30	2021-08-30
Referencyjna temperatura powietrza	t_{amb}	*[°C]*	6,9	20,2
Wilgotność względna powietrza	*RH*	*[%]*	84,8	57,1
Ciśnienie otoczenia	P_{amb}	*[hPa]*	981,70	982,50
Ogólny poziom mocy akustycznej (liniowy)	L_W	*[dB]*	69,0 ± 1,5	47,4 ± 1,5
Ogólny poziom mocy akustycznej ważony A	L_{WA}	***[dB]***	**59,5 + 1,5**	**40,5 ± 1,5**
Klasa dokładności			**Inżynieria (klasa 2)**	**Inżynieria (klasa 2)**

*) *Komentarz do skróconego oznaczenia: np. A7/W55*
A (powietrze), 7 (powietrze wlotowe, temperatura termometru suchego w °C) / W (woda), 55 (temperatura wylotowej wody grzewczej w °C)

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Ja, Maciej Stanisław Krajewski, tłumacz przysięgły języka angielskiego wpisany na listę tłumaczy przysięgłych Ministra Sprawiedliwości RP pod numerem TP/2193/05, poświadczam zgodność powyższego tłumaczenia z dokumentem elektronicznym sporządzonym w języku angielskim.

Warszawa, 10 czerwca 2024 roku. Nr Rep. 220/24.

Niniejszy dokument został podpisany kwalifikowanym podpisem elektronicznym zgodnym z rozporządzeniem UE nr 910/2014 (rozporządzenie eIDAS).

Maciej Stanisław Krajewski
Elektronicznie podpisany przez Maciej Stanisław Krajewski
Data: 2024.06.10 11:54:27 +02'00'

MACIEJ KRAJEWSKI TŁUMACZ PRZYSIĘGŁY JĘZYKA ANGIELSKIEGO NR TP/2193/05

OŚWIADCZENIE

Producent Daikin Airconditioning Poland Sp. z.o.o oświadcza, iż pompy ciepła

1) EBBH11D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBBH11D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBBH11D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBBH11D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBBX11D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBBX11D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBBX11D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBBX11D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSH11P30D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1)EBSH11P30D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSH11P50D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSH11P50D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSHB11P30D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSHB11P30D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSHB11P50D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSHB11P50D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSX11P30D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSX11P50D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSX11P50D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSXB11P30D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1)EBSXB11P30D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBSXB11P50D/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBSXB11P50D/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVH11S18D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVH11S18D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVH11S18D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVH11S18D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVH11S23D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVH11S23D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVH11S23D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVH11S23D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVX11S18D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1)EBVX11S18D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVX11S18D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVX11S18D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVX11S23D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVX11S23D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVX11S23D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVZ11S18D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVZ11S18D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVZ11S23D6V/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVZ11S23D9W/ERLA11DV3

Oznaczenie/typ/identyfikator modelu

1) EBVZ16S18D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVZ16S18D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVZ16S23D6V/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

1) EBVZ16S23D9W/ERLA11DW1

Oznaczenie/typ/identyfikator modelu

2) EBBH16D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2) EBBH16D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2) EBBH16D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBBH16D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBBX16D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBBX16D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBBX16D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBBX16D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSH16P30D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSH16P50D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSH16P50D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSHB16P30D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSHB16P30D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSHB16P50D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSHB16P50D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSX16P30D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSX16P30D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSX16P50D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSX16P50D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSXB16P30D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSXB16P30D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBSXB16P50D/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBSXB16P50D/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVH16S18D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVH16S18D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVH16S18D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVH16S23D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVH16S23D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVH16S23D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVH16S23D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVX16S18D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVX16S18D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVX16S18D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVX16S18D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVX16S23D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVX16S23D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVX16S23D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVX16S23D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S18D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S18D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S18D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S23D6V/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S23D6V/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S23D9W/ERLA14DV3

Oznaczenie/typ/identyfikator modelu

2)EBVZ16S23D9W/ERLA14DW1

Oznaczenie/typ/identyfikator modelu

3)EBBH16D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBBH16D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBBH16D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBBH16D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBBX16D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBBX16D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBBX16D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBBX16D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSH16P30D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSH16P30D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSH16P50D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSHB16P30D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSHB16P30D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSHB16P50D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSHB16P50D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSX16P30D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSX16P30D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSX16P50D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSX16P50D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSXB16P30D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSXB16P30D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBSXB16P50D/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBSXB16P50D/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVH16S18D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVH16S18D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVH16S18D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVH16S23D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVX16S18D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVX16S18D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVX16S18D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVX16S18D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVX16S23D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVX16S23D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVX16S23D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVX16S23D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVZ16S18D6V/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVZ16S18D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

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3)EBVZ16S23D6V/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

3)EBVZ16S23D9W/ERLA16DV37

Oznaczenie/typ/identyfikator modelu

3)EBVZ16S23D9W/ERLA16DW17

Oznaczenie/typ/identyfikator modelu

Należą do jednego podtypu w danym typoszeregu i spełniają łącznie następujące warunki:

- identyczna konstrukcja obiegu chłodniczego, ten sam czynnik chłodniczy/roboczy;
- ten sam producent, typ i liczba sprężarek;
- ten sam typ elementu rozprężnego;
- ten sam typ skraplacza;
- ten sam typ parownika;
- ten sam typ procesu odszraniania;
- ten sam sterownik i zasada sterowania wydajnością;
- ten sam producent, typ i liczba wentylatorów parownika (w przypadku powietrznych pomp ciepła) i zasada sterowania wydajnością (stała, zmienna lub stopniowana regulacja prędkości obrotowej);
- urządzenia z i bez zaworu czterodrogowego nie mogą być zaliczone do tego samego typoszeregu.

Poznań, 20.06.2014
Miejscowość, data

Podpis osoby upoważnionej

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