

VETTA_{AIR}



vettawindows.com/air

416-234-1033

inquiry@vettawindows.com

HVI-Certified Performance Reports for Heat Recovery Ventilation

PremAIR
MinistAIR
SlimAIR





HVI-Certified Performance Report

For Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs)



Model number: HRU-PremAIR-450

Brand name: Alnor

Manufactured by: Alnor Systemy Wentylacji Sp. z o.o.

Zwierzyniecka 8b

Warsaw, Mazowieckie 00-719

has been tested in accordance with HVI Publication 920® (02/2020)

for the performance rating of HRVs

and, as of the date shown below,

was certified by the Home Ventilating Institute to meet the following product performance ratings:

Temp Mode	Supply Temp (C)	Supply Temp (F)	Net Airflow (L/s)	Net Airflow (cfm)	Power Consumed (watts)	SRE	ASRE	Latent Recovery /Moisture Transfer	TRE	ATRE	VLTVR Supply	VLTVR Exhaust	Very Low Temp Airflow Imbalance
HEATING	0	32	31	66	22	90	93	0.00					
HEATING	0	32	62	131	53	89	92	0.00					
HEATING	0	32	86	182	116	86	91	0.00					
HEATING	-25	-13	32	68	65	78	81	0.06			36.3	38.5	90

External Static Pressure (Pa)	External Static Pressure (in)	Net Supply Airflow (L/s)	Net Supply Airflow (cfm)	Gross Airflow Supply (L/s)	Gross Airflow Supply (cfm)	Gross Airflow Exhaust (L/s)	Gross Airflow Exhaust (cfm)
25	0.1	132	280	134	284	133	282
50	0.2	129	273	131	278	130	275
75	0.3	126	267	128	271	127	269
100	0.4	123	261	125	265	124	263
125	0.5	120	254	122	259	121	256
150	0.6	117	248	119	252	119	252
175	0.7	114	242	116	246	116	246
200	0.8	111	235	113	239	113	239
250	1.0	105	222	106	225	108	229
300	1.2	99	210	100	212	102	216
400	1.6	85	180	86	182	90	191
500	2.0	69	146	70	148	74	157
600	2.4	50	106	51	108	54	114
700	2.8	26	55	27	57	27	57

HVI Reference Number: 2505313

Certification Date: 11/17/2023*

Today's Date: 11/03/2023

Product Status: Approved

Attested by:

Jacki Donner
CEO

*This certificate is only valid while the product remains qualified. A product may be disqualified at any time. This certificate is valid only for the particular combination of ratings listed in the most recent edition of HVI Publication 911: Certified Home Ventilating Products Directory®. Visit hvicertified.org to verify that this combination is an active listing and the data listed on this certificate are accurate. Search on the HVI reference number to quickly locate this ratings combination online.

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HVI-Certified Performance Report

For Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs)



Model number: **HRU-MinistAIR-325**

Brand name: **Alnor**

Manufactured by: **Alnor Systemy Wentylacji Sp. z o.o.**

Zwierzyniecka 8b

Warsaw, Mazowieckie 00-719

has been tested in accordance with *HVI Publication 920*[®] (02/2020)

for the performance rating of **HRVs**

and, as of the date shown below,

was certified by the Home Ventilating Institute to meet the following product performance ratings:

Temp Mode	Supply Temp (C)	Supply Temp (F)	Net Airflow (L/s)	Net Airflow (cfm)	Power Consumed (watts)	SRE	ASRE	Latent Recovery /Moisture Transfer	TRE	ATRE	VLTVR Supply	VLTVR Exhaust	Very Low Temp Airflow Imbalance
HEATING	0	32	31	66	28	80	83	0.02					
HEATING	0	32	45	95	43	84	87	0.01					
HEATING	0	32	65	138	84	81	86	0.01					
HEATING	-25	-13	33	70	89	67	70	0.14			35.0	49.9	117

External Static Pressure (Pa)	External Static Pressure (in)	Net Supply Airflow (L/s)	Net Supply Airflow (cfm)	Gross Airflow Supply (L/s)	Gross Airflow Supply (cfm)	Gross Airflow Exhaust (L/s)	Gross Airflow Exhaust (cfm)
25	0.1	101	214	102	216	100	212
50	0.2	97	206	98	208	97	206
75	0.3	94	199	95	201	94	199
100	0.4	91	193	92	195	91	193
125	0.5	87	184	88	186	87	184
150	0.6	84	178	85	180	83	176
175	0.7	80	170	81	172	79	167
200	0.8	77	163	78	165	75	159
225	0.9	73	155	74	157	71	150
250	1.0	69	146	70	148	67	142
300	1.2	61	129	62	131	57	121
400	1.6	43	91	43	91	37	78
500	2.0	21	44	22	47	13	28

HVI Reference Number: 2505314

Certification Date: 12/1/2023*

Today's Date: 11/30/2023

Product Status: Approved

Attested by:

Jacki Donner
CEO

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HVI-Certified Performance Report

For Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs)



Model number: HRU-SlimAIR-250

Brand name: Alnor

Manufactured by: Alnor Systemy Wentylacji Sp. z o.o.

Zwierzyniecka 8b

Warsaw, Mazowieckie 00-719

has been tested in accordance with HVI Publication 920[®] (02/2020)

for the performance rating of HRVs

and, as of the date shown below,

was certified by the Home Ventilating Institute to meet the following product performance ratings:

Temp Mode	Supply Temp (C)	Supply Temp (F)	Net Airflow (L/s)	Net Airflow (cfm)	Power Consumed (watts)	SRE	ASRE	Latent Recovery /Moisture Transfer	TRE	ATRE	VLTVR Supply	VLTVR Exhaust	Very Low Temp Airflow Imbalance
HEATING	0	32	23	49	19	76	79	0.00					
HEATING	0	32	31	66	25	81	84	0.00					
HEATING	0	32	50	106	49	80	83	0.00					
HEATING	-25	-13	42	89	92	67	69	0.08			19.4	48.5	145

External Static Pressure (Pa)	External Static Pressure (in)	Net Supply Airflow (L/s)	Net Supply Airflow (cfm)	Gross Airflow Supply (L/s)	Gross Airflow Supply (cfm)	Gross Airflow Exhaust (L/s)	Gross Airflow Exhaust (cfm)
25	0.1	85	180	86	182	82	174
50	0.2	81	172	81	172	79	167
75	0.3	76	161	76	161	75	159
100	0.4	72	153	72	153	71	150
125	0.5	67	142	67	142	67	142
150	0.6	63	133	63	133	63	133
175	0.7	58	123	58	123	59	125
200	0.8	53	112	53	112	54	114
225	0.9	47	100	47	100	50	106
250	1.0	41	87	41	87	46	97
300	1.2	26	55	26	55	38	81

HVI Reference Number: 2505315

Certification Date: 12/1/2023*

Today's Date: 11/30/2023

Product Status: Approved

Attested by:

Jacki Donner
CEO

* This certificate is only valid while the product remains qualified. A product may be disqualified at any time. This certificate is valid only for the particular combination of ratings listed in the most recent edition of HVI Publication 911: Certified Home Ventilating Products Directory[®]. Visit hvicertified.org to verify that this combination is an **active listing** and the data listed on this certificate are accurate. Search on the HVI reference number to quickly locate this ratings combination online.
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CSA Group Bayern GmbH,
Straubinger Straße 100,
94447 Plattling,
Germany

Customer ID	0006013272	Account	ALNOR Systemy Wentylacji Sp. Z o.o.
Contact	Kajetan Bobryk	Address	10 Aleja Krakowska 05-552 Wola Mrokowska Masovian Poland
Project Number	80168904		

Special Inspection Report

Work Order	00031118	Usage Decision	Product labeled
Work Order Line Item Number	00000001	Label Applied	Yes
		Start Date	11/01/2024 8:30 AM
Product	Heat recovery Ventilation Unit with counterflow core.	Report Generation Date	17/01/2024 4:37 PM
Model	HRU-PremAIR-NA-450		
Manufacturer's Name	Alnor Ventilation system		

Inspection Address

10 Aleja Krakowska
Wola Mrokowska
05-552 Poland

Labels Applied

Material	Label Serial Number	Quantity	Unit Serial Number
1002210	C2965813	1.00	231154533/1
1002210	C2965814	1.00	231154533/2
1002210	C2965815	1.00	231154533/3
1002210	C2965816	1.00	231154533/4
1002210	C2965817	1.00	231154533/5
1002210	C2965818	1.00	231154533/6
1002210	C2965819	1.00	231154533/7
1002210	C2965820	1.00	231154533/8
1002210	C2965821	1.00	231154533/9
1002210	C2965822	1.00	231154533/10
1002210	C2965823	1.00	231154533/11

1002210	C2965824	1.00	231154533/12
1002210	C2965825	1.00	231154533/13
1002210	C2965826	1.00	231154533/14
1002210	C2965827	1.00	231154533/15
1002210	C2965828	1.00	231154533/16
1002210	C2965829	1.00	231154533/17
1002210	C2965830	1.00	231154533/18
1002210	C2965831	1.00	231154533/19
1002210	C2965832	1.00	231154533/20
1002210	C2965833	1.00	231154533/21
1002210	C2965834	1.00	231154533/22
1002210	C2965835	1.00	231154533/23
1002210	C2965836	1.00	231154533/24
1002210	C2965837	1.00	231154533/25
1002210	C2965838	1.00	231154533/26
1002210	C2965839	1.00	231154533/27
1002210	C2965840	1.00	231154533/28
1002210	C2965841	1.00	231154533/29
1002210	C2965842	1.00	231154533/30
1002210	C2965843	1.00	231154533/31
1002210	C2965844	1.00	231154533/32
1002210	C2965845	1.00	231154533/33
1002210	C2965846	1.00	231154533/34
1002210	C2965847	1.00	231154533/35
1002210	C2965848	1.00	231154533/36
1002210	C2965849	1.00	231154533/37
1002210	C2965850	1.00	231154533/38
1002210	C2965851	1.00	231154533/39
1002210	C2965852	1.00	231154533/40
1002210	C2965853	1.00	231154533/41
1002210	C2965854	1.00	231154533/42
1002210	C2965855	1.00	231154533/43
1002210	C2965856	1.00	231154533/44

1002210	C2965857	1.00	231154533/45
1002210	C2965858	1.00	231154533/46
1002210	C2965859	1.00	231154533/47
1002210	C2965860	1.00	231154533/48
1002210	C2965861	1.00	231154533/49
1002210	C2965862	1.00	231154533/50

Inspection Method 209WI001

Test Result Summary

The equipment were subjected to the following tests with acceptable results. Full test data are below described.

Each equipment were tested in production line during the manufacturing, since these test are not witnessed, further test at sample was performed According to SPE-1000-21 Clause 6.1.2.8.2 Table 1 colon III

13 units are tested of production batch of 50 items,

#Dielectric strength test:

The dielectric tests were executed applied the test voltage between power circuits and the ground, during the test all circuit breakers are setting in close position sensitive components were insulated.

The DUT were tested in accordance to SPA-1000 Clause 6.1.2 sub clause 6.1.2.1 & 6.1.2.4

The test was conducted by SIR Maurizio Casto with his personal Dielectric Tester.

Rated voltage 120VAC:

1200VAC was applied for 1 sec. between the power cord line wires and ground wire without evidence of breakdown (0 / 13) of the batch of 50 item.

Equipment Used:

- Dielectric Strength Tester – CSA SIR Personal – Manufacturer EATON – CE MultiTester Model MEMI2094 S/N 14100178 Cal Cert. LAT 238 0034CT-23 - Calibration date: 2023-01-10 Due date 2024-01-10 – CSA Asset No. 80000012.

#Leakage Current Test:

Current Leakage Test values in mAmps

NOR. POLARITY:

- * GCNC: 0,2mA
- * GONC: 0.81mA
- * GCNO: 0,2mA

REV. POLARITY:



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Germany

- * GCNC: 0.2mA
- * GONC: 0.73mA
- * GCNO: 0.3mA

Equipment Used:

- Multimeter – CSA SIR Personal – Manufacturer Fluke model – Model 287 S/N
57620037 Cal Cert. LAT 238 0648CT-23 - Calibration date 2023-05-15 Due date 2024-05-15 – CSA Asset No. 14900841.

#Strain and release Test:

Pass

#Flame test

Waived since metal enclosure

Test equipment calibration certificate are kept on file at CSA Group database.

Electrical Ratings

Voltage Values	120VAC
Frequency	60Hz
Power Values	233W (1.94A)
No of Wires	2 wire + PE
No of phases	singlephase + PE
SCCR:	--
Connection type	Cord connected - Cord Set, 3C 14AWG SJT CSA
Enclosure Type	Suitable for indoor installation (Type 1)
Environmental Test Conditions	Regular indoor test bench conditions

Test Results

Test Type	Duration of Test	Test Value	Pass/Fail	Test Equipment	Cal Due Date	S/N or ID	Number of Units
E- Dielectric Test	1 sec.	1200VAC	Pass	CE Multitester MI2094 - 80000012	10/01/2024	14100178	13 of batch 50
E- Leakage Current	--	120VAC	Pass	Fluke 287 - CM	15/05/2024	57620037	1



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 Germany

Applicable Standards

SPE-1000:21

List of Alterations

No alteration found

#####

ENGINEERING CONSIDERATIONS-NOTES-TECHNICAL REFERENCES

Abbreviation used:

- DUT: Device Under Test
- DOL: Direct On Line Starter
- MCCB: Molded Case Circuit Breaker
- MPCB: Motor Protection Circuit Breaker
- MCB: Miniaturized Circuit Breaker
- OCP: Overcurrent Protection
- OLP: Overload Protection
- OLTC: On Load Tap Charger
- PSU: Power Supply Unit

DESCRIPTION OF THE PRODUCT:

The product investigate is heat recovery ventilation unit for residential application, the unit is composed of control main board PCB enclosed on metal enclosure and two ventilation centrifugal fans for low energy consumption EC motors. The unit is powered by Cord set Type B70 55/64 in with Nema plug grounded

List of Safety Critical Components

Enclosure Components	Metal enclosure not accessible without use of tools
Ground/Bonding Components	Provided see contraction details
Disconnect Components	N/A
Main Overcurrent Protection Components	Provided by glass fuse Mft. SIBA model FF 10A, @600VAC 10A cURus listed suitable for application
Branch	N/A

Overcurrent
Protection
Components

Overload
Components

Ventilation fans motors are electronically protect motors cULus listed suitable for application

Temperature
device
Components

N/A

Safety Circuit
Components

N/A

Other
Components

- Double insulate PCB transformer Mft. Marchner model VN42.14/25303; @115VAC/15VAC 50/60Hz Class 130(B) cURus listed file E156713
 - PCB Relays model HF118F; 250VAC 10A cURus listed
 - Ventilation fan Mft. ebmpapst model R3G190-RD47-04; @100-130VAC 50/60Hz 2.25A 170W with VSD integrated cURus listed suitable for application

Equipment Description and Function

The heat recovery ventilation unit has a device with PET counterflow core with high temperature efficiency. The equipment is for residential use cord connected.

Construction Review

Components

Components were confirmed to be accurately identified on the drawings and bill of material. Critical components were marked with an acceptable approval mark from an accepted NRTL. The components were installed in accordance with the manufacturer's instructions, used for their intended application, and were used within their electrical ratings. Critical safety components that were not approved are identified in the component list of the report.

Mechanical
Assembly

The mechanical assembly was reviewed and found to be smooth and free of sharp edges and burrs. The equipment provided with adequate guarding and the structure was mechanically stable and structurally sound. Adequate guarding of dangerous moving parts.

Disconnecting
Means

N/A Cord connected equipment

Bonding

The equipment was provided with an adequately sized bonding terminal and found to be suitable for bonding the equipment to ground in accordance with the requirements of the Canadian Electrical Code, Part I. All exposed non-current-carrying metal parts that could become energized were properly bonded. There was a sufficient number of bonding terminals provided for each incoming and each outgoing circuit.

Enclosure	The enclosure was found to be constructed and assembled to provide the strength and rigidity necessary to resist the abuses to which it will be subjected in the environment in which the equipment is intended to be used without resulting in a fire or shock hazard. The enclosure was made of suitable material to prevent corrosion. Doors and covers were adequately fastened such that live parts were not accessible without the use of a tool. Openings were reviewed and found sized to prevent the test probe from contacting bare live parts of hazard voltages.
Terminals	Conductors were found to be secured in a manner as to obtain good permanent contact. Conductors were firmly gripped in a manner that stray strands cannot cause short-circuits or grounds. Terminals were adequately sized with an ampacity not less than required for application in the device.
Wiring	Internal conductors were found to be suitable for the service intended with respect to voltage, temperature and grouping. The conductors were supported so that there was no undue mechanical strain on the conductors or their terminals. There were no apparent rough edges, burrs or sharp edges that would likely damage the insulation. The conductors were evaluated for the load ampacity.
Overcurrent Protection	Overcurrent and overload devices were found to be suitable for the application, approved for the intended use, and adequately sized for the circuit they are protecting.
Supplementary Protectors	N/A
Motors	Each motor nameplate was reviewed and confirmed to have proper protection sized in accordance with Canadian Electrical Code, Part 1. Cable connections were tight and of the correct size and suitable for the intended environment.
Motor Controllers	Each Motor controller was reviewed to determine it was properly rated for the intended application and sized for the load that it is controlling. Overloads range are within the motors FLA.
Receptacles	N/A
Lighting	N/A
Drives	Drives were reviewed and confirmed to have electronic overload and overcurrent protection. There was adequate space for ventilation, branch circuit overcurrent protection was suitable sized and of an acceptable type and the branch circuit wiring was verified to have the ampacity for the load.
Safety Circuits	N/A

Conditions of Acceptability

- The Equipment has been evaluated for electrical safety only (fire and electrical shock hazards), for installation and use in ordinary (non-hazardous) location in accordance with CEC Part I; other requirements may be mandated by local/provincial/federal authorities and are responsibility of the submitter.

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Germany

- Incoming supply wiring/wiring methods/field wiring to equipment and interconnection wiring between machinery parts – are excluded from the scope of this evaluation – (field wiring to inspection and approval by the local Authority Having Jurisdiction).
- Since the end-user location may need to comply with specific local requirements, the final installation and field wiring connections, interconnections are subject to inspection and approval by the Authority Having Jurisdiction.
- The equipment covered under this Special Inspection is as described in this report; the equipment was assembled as intended and was inspected in January 11 & 12, 2024 at ALNOR Facility in Poland at below address:

10 Aleja Krakowska
Wola Mrokowska 05-552
Poland

- Components not certified were investigated in the field and they found acceptable since inserted in operating circuits at SELV / Class 2 (CEC) or low voltage limited-energy circuits (voltage 30 Vac / 42.4 Vdc/peak max, and 100 VA or less)
- Customer have been notified and informed regarding the need of preliminary contacting the local Authority Having Jurisdiction prior to installing the equipment.
- The Equipment was evaluated for installation in an indoor, dry, normal environment only. The product was not evaluated for installation in any hazardous classified location and/or for installation in an environment subject to rainfall, water, spray, steam, or exposure to any corrosive chemicals that deteriorate the enclosure or components.
- The CSA Special Inspection Label shall not be considered as equivalent to the Listing Mark for products.
- The CSA Special Inspection Label indicates compliance with the applicable parts of the Standards referenced above, at the time the Label was applied, and considering only the final installation site. The applicable parts included in the evaluation are the construction review, markings, and those testing protocols that are non-destructive.

The final installation location:
Specialized retailer located in Canada

- Final installation is discussed with Mr. Kejetan Bonryk

Markings

Verified Bilingual	Yes
Cautions/Warning	# High Voltage
Markings	# Danger of Death while touching electrical equipment # Suitable for servicing only when de-energized # Caution replace fuse with same type and rating

Customer Signature

Signature	
Signed By	
Date	
Type	Facility Representative
Prepared By	Maurizio Casto



CSA Group Testing & Certification Inc.

CSA Group Bayern GmbH,
Straubinger Straße 100,
94447 Plattling,
Germany

The Client acknowledges that the equipment described in the related report has not been rejected due to unacceptable results of a previous evaluation conducted by a certification organization through any other existing certification service.

NOTE: EVALUATION BY SPECIAL INSPECTION SERVICE SHALL NOT BE CONSIDERED EQUIVALENT OF CSA CERTIFICATION.

The Client agrees to the Conditions of the signed/accepted Quote on file, and Alteration(s) listed on the related report. This report addresses only the product described in the report, as the product existed at the time of the inspection.



CSA Group Testing & Certification Inc.

CSA Group Bayern GmbH,
Straubinger Straße 100,
94447 Plattling,
Germany

Customer ID	0006013272	Account	ALNOR Systemy Wentylacji Sp. Z o.o.
Contact	Kajetan Bobryk	Address	10 Aleja Krakowska 05-552 Wola Mrokowska Masovian Poland
Project Number	80168904		

Special Inspection Report

Work Order	00031118	Usage Decision	Product labeled
Work Order Line Item Number	00000002	Label Applied	Yes
		Start Date	11/01/2024 8:30 AM
Product	Heat recovery Ventilation Unit with counterflow core.	Report Generation Date	17/01/2024 4:50 PM
Model	HRU-MinistAIR-NA-L-325		
Manufacturer's Name	Alnor Ventilation System		

Inspection Address

10 Aleja Krakowska
Wola Mrokowska
05-552 Poland

Labels Applied

Material	Label Serial Number	Quantity	Unit Serial Number
1002210	C2965863	1.00	231156446/1
1002210	C2965864	1.00	231156446/2
1002210	C2965865	1.00	231156446/3
1002210	C2965866	1.00	231156446/4
1002210	C2965867	1.00	231156446/5
1002210	C2965868	1.00	231156446/6
1002210	C2965869	1.00	231156446/7
1002210	C2965870	1.00	231156446/8
1002210	C2965871	1.00	231156446/9
1002210	C2965872	1.00	231156446/10
1002210	C2965873	1.00	231156446/11



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1002210	C2965874	1.00	231156446/12
1002210	C2965875	1.00	231156446/13
1002210	C2965876	1.00	231156446/14
1002210	C2965877	1.00	231156446/15
1002210	C2965878	1.00	231156446/16
1002210	C2965879	1.00	231156446/17
1002210	C2965880	1.00	231156446/18
1002210	C2965881	1.00	231156446/19
1002210	C2965882	1.00	231156446/20
1002210	C2965883	1.00	231156446/21
1002210	C2965884	1.00	231156446/22
1002210	C2965885	1.00	231156446/23
1002210	C2965886	1.00	231156446/24
1002210	C2965887	1.00	231156446/25
1002210	C2965888	1.00	231156446/26
1002210	C2965889	1.00	231156446/37
1002210	C2965890	1.00	231156446/28
1002210	C2965891	1.00	231156446/29
1002210	C2965892	1.00	231156446/30
1002210	C2965893	1.00	231156446/31
1002210	C2965894	1.00	231156446/32
1002210	C2965895	1.00	231156446/33
1002210	C2965896	1.00	231156446/34
1002210	C2965897	1.00	231156446/35
1002210	C2965898	1.00	231156446/36
1002210	C2965899	1.00	231156446/27
1002210	C2965900	1.00	231156446/38
1002210	C2965901	1.00	231156446/39
1002210	C2965902	1.00	231156446/40
1002210	C2965903	1.00	231156446/41
1002210	C2965904	1.00	231156446/42
1002210	C2965905	1.00	231156446/43
1002210	C2965906	1.00	231156446/44

1002210	C2965907	1.00	231156446/45
1002210	C2965908	1.00	231156446/46
1002210	C2965909	1.00	231156446/47
1002210	C2965910	1.00	231156446/48
1002210	C2965911	1.00	231156446/49
1002210	C2965912	1.00	231156446/50

Inspection Method 209WI001

Test Result Summary

The equipment were subjected to the following tests with acceptable results. Full test data are below described.

Each equipment were tested in production line during the manufacturing, since these test are not witnessed, further test at sample was performed According to SPE-1000-21 Clause 6.1.2.8.2 Table 1 colon III

13 units are tested of production batch of 50 items,

#Dielectric strength test:

The dielectric tests were executed applied the test voltage between power circuits and the ground, during the test all circuit breakers are setting in close position sensitive components were insulated.

The DUT were tested in accordance to SPA-1000 Clause 6.1.2 sub clause 6.1.2.1 & 6.1.2.4

The test was conducted by SIR Maurizio Casto with his personal Dielectric Tester.

Rated voltage 120VAC:

1200VAC was applied for 1 sec. between the power cord line wires and ground wire without evidence of breakdown (0 / 13) of the batch of 50 item.

Equipment Used:

- Dielectric Strength Tester – CSA SIR Personal – Manufacturer EATON – CE MultiTester Model MEMI2094 S/N 14100178 Cal Cert. LAT 238 0034CT-23 - Calibration date: 2023-01-10 Due date 2024-01-10 – CSA Asset No. 80000012.

#Leakage Current Test:

Current Leakage Test values in mAmps

NOR. POLARITY:

* GCNC: 0,31mA

* GONC: 0.91mA

* GCNO: 0,29mA

REV. POLARITY:

* GCNC: 0.29mA



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* GONC: 0.85mA
* GCNO: 0.32mA

Equipment Used:

- Multimeter – CSA SIR Personal – Manufacturer Fluke model – Model 287 S/N
57620037 Cal Cert. LAT 238 0648CT-23 - Calibration date 2023-05-15 Due date 2024-05-15 – CSA Asset No. 14900841.

#Strain and release Test:

Pass

#Flame test

Waived since metal enclosure

Test equipment calibration certificate are kept on file at CSA Group database.

Electrical Ratings

Voltage Values 120VAC

Frequency 60Hz

Power Values 162W (1.35A)

No of Wires 2 wire + PE

No of phases singlephase + PE

SCCR: --

Connection type Cord connected - Cord Set, 3C 14AWG SJT CSA

Enclosure Type Suitable for indoor installation (Type 1)

Environmental Test Conditions Regular indoor test bench conditions

Test Results

Test Type	Duration of Test	Test Value	Pass/Fail	Test Equipment	Cal Due Date	S/N or ID	Number of Units
E- Dielectric Test	1 sec.	1200VAC	Pass	CE Multitester MI2094 - 80000012	10/01/2024	14100178	13 of batch 50
E- Leakage Current	--	120VAC	Pass	Fluke 287 - CM	15/05/2024	57620037	1



CSA Group Testing & Certification Inc.
 CSA Group Bayern GmbH,
 Straubinger Straße 100,
 94447 Plattling,
 Germany

Applicable Standards

SPE-1000:21

List of Alterations

No alteration found

#####

ENGINEERING CONSIDERATIONS-NOTES-TECHNICAL REFERENCES

Abbreviation used:

- DUT: Device Under Test
- DOL: Direct On Line Starter
- MCCB: Molded Case Circuit Breaker
- MPCB: Motor Protection Circuit Breaker
- MCB: Miniaturized Circuit Breaker
- OCP: Overcurrent Protection
- OLP: Overload Protection
- OLTC: On Load Tap Charger
- PSU: Power Supply Unit

DESCRIPTION OF THE PRODUCT:

The product investigate is heat recovery ventilation unit for residential application, the unit is composed of control main board PCB enclosed on metal enclosure and two ventilation centrifugal fans for low energy consumption EC motors. The unit is powered by Cord set Type B70 55/64 in with Nema plug grounded

List of Safety Critical Components

Enclosure Components	Metal enclosure not accessible without use of tools
Ground/Bonding Components	Provided see contraction details
Disconnect Components	N/A
Main Overcurrent Protection Components	Provided by glass fuse Mft. SIBA model FF 10A, @600VAC 10A cURus listed suitable for application
Branch Overcurrent	N/A

Protection
 Components

Overload
 Components Ventilation fans motors are electronically protect motors cULus listed suitable for application

Temperature
 device
 Components N/A

Safety Circuit
 Components N/A

Other
 Components - Double insulate PCB transformer Mft. Marchner model VN42.14/25303; @115VAC/15VAC 50/60Hz Class 130(B) cURus listed file E156713
 - PCB Relays model HF118F; 250VAC 10A cURus listed
 - Ventilation fan Mft. ebmpapst model R3G190-RD47-04; @100-130VAC 50/60Hz 2.25A 170W with VSD integrated cURus listed suitable for application

Equipment Description and Function

The heat recovery ventilation unit has a device with PET counterflow core with high temperature efficiency. The equipment is for residential use cord connected.

Construction Review

Components Components were confirmed to be accurately identified on the drawings and bill of material. Critical components were marked with an acceptable approval mark from an accepted NRTL. The components were installed in accordance with the manufacturer's instructions, used for their intended application, and were used within their electrical ratings. Critical safety components that were not approved are identified in the component list of the report.

Mechanical
 Assembly The mechanical assembly was reviewed and found to be smooth and free of sharp edges and burrs. The equipment provided with adequate guarding and the structure was mechanically stable and structurally sound. Adequate guarding of dangerous moving parts.

Disconnecting
 Means N/A Cord connected equipment

Bonding The equipment was provided with an adequately sized bonding terminal and found to be suitable for bonding the equipment to ground in accordance with the requirements of the Canadian Electrical Code, Part I. All exposed non-current-carrying metal parts that could become energized were properly bonded. There was a sufficient number of bonding terminals provided for each incoming and each outgoing circuit.

Enclosure	The enclosure was found to be constructed and assembled to provide the strength and rigidity necessary to resist the abuses to which it will be subjected in the environment in which the equipment is intended to be used without resulting in a fire or shock hazard. The enclosure was made of suitable material to prevent corrosion. Doors and covers were adequately fastened such that live parts were not accessible without the use of a tool. Openings were reviewed and found sized to prevent the test probe from contacting bare live parts of hazard voltages.
Terminals	Conductors were found to be secured in a manner as to obtain good permanent contact. Conductors were firmly gripped in a manner that stray strands cannot cause short-circuits or grounds. Terminals were adequately sized with an ampacity not less than required for application in the device.
Wiring	Internal conductors were found to be suitable for the service intended with respect to voltage, temperature and grouping. The conductors were supported so that there was no undue mechanical strain on the conductors or their terminals. There were no apparent rough edges, burrs or sharp edges that would likely damage the insulation. The conductors were evaluated for the load ampacity.
Overcurrent Protection	Overcurrent and overload devices were found to be suitable for the application, approved for the intended use, and adequately sized for the circuit they are protecting.
Supplementary Protectors	N/A
Motors	Each motor nameplate was reviewed and confirmed to have proper protection sized in accordance with Canadian Electrical Code, Part 1. Cable connections were tight and of the correct size and suitable for the intended environment.
Motor Controllers	Each Motor controller was reviewed to determine it was properly rated for the intended application and sized for the load that it is controlling. Overloads range are within the motors FLA.
Receptacles	N/A
Lighting	N/A
Drives	Drives were reviewed and confirmed to have electronic overload and overcurrent protection. There was adequate space for ventilation, branch circuit overcurrent protection was suitable sized and of an acceptable type and the branch circuit wiring was verified to have the ampacity for the load.
Safety Circuits	N/A

Conditions of Acceptability

- The Equipment has been evaluated for electrical safety only (fire and electrical shock hazards), for installation and use in ordinary (non-hazardous) location in accordance with CEC Part I; other requirements may be mandated by local/provincial/federal authorities and are responsibility of the submitter.

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Germany

- Incoming supply wiring/wiring methods/field wiring to equipment and interconnection wiring between machinery parts – are excluded from the scope of this evaluation – (field wiring to inspection and approval by the local Authority Having Jurisdiction).
- Since the end-user location may need to comply with specific local requirements, the final installation and field wiring connections, interconnections are subject to inspection and approval by the Authority Having Jurisdiction.
- The equipment covered under this Special Inspection is as described in this report; the equipment was assembled as intended and was inspected in January 11 & 12, 2024 at ALNOR Facility in Poland at below address:

10 Aleja Krakowska
Wola Mrokowska 05-552
Poland

- Components not certified were investigated in the field and they found acceptable since inserted in operating circuits at SELV / Class 2 (CEC) or low voltage limited-energy circuits (voltage 30 Vac / 42.4 Vdc/peak max, and 100 VA or less)
- Customer have been notified and informed regarding the need of preliminary contacting the local Authority Having Jurisdiction prior to installing the equipment.
- The Equipment was evaluated for installation in an indoor, dry, normal environment only. The product was not evaluated for installation in any hazardous classified location and/or for installation in an environment subject to rainfall, water, spray, steam, or exposure to any corrosive chemicals that deteriorate the enclosure or components.
- The CSA Special Inspection Label shall not be considered as equivalent to the Listing Mark for products.
- The CSA Special Inspection Label indicates compliance with the applicable parts of the Standards referenced above, at the time the Label was applied, and considering only the final installation site. The applicable parts included in the evaluation are the construction review, markings, and those testing protocols that are non-destructive.

The final installation location:
Specialized retailer located in Canada

- Final installation is discussed with Mr. Kejetan Bonryk

Markings

Verified Bilingual	Yes
Cautions/Warning	# High Voltage
Markings	# Danger of Death while touching electrical equipment # Suitable for servicing only when de-energized # Caution replace fuse with same type and rating

Customer Signature

Signature	
Signed By	
Date	
Type	Facility Representative
Prepared By	Maurizio Casto



CSA Group Testing & Certification Inc.

CSA Group Bayern GmbH,
Straubinger Straße 100,
94447 Plattling,
Germany

The Client acknowledges that the equipment described in the related report has not been rejected due to unacceptable results of a previous evaluation conducted by a certification organization through any other existing certification service.

NOTE: EVALUATION BY SPECIAL INSPECTION SERVICE SHALL NOT BE CONSIDERED EQUIVALENT OF CSA CERTIFICATION.

The Client agrees to the Conditions of the signed/accepted Quote on file, and Alteration(s) listed on the related report. This report addresses only the product described in the report, as the product existed at the time of the inspection.



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Customer ID	0006013272	Account	ALNOR Systemy Wentylacji Sp. Z o.o.
Contact	Kajetan Bobryk	Address	10 Aleja Krakowska 05-552 Wola Mrokowska Masovian Poland
Project Number	80168904		

Special Inspection Report

Work Order	00031118	Usage Decision	Product labeled
Work Order Line Item Number	00000003	Label Applied	Yes
		Start Date	11/01/2024 8:30 AM
Product	Heat recovery Ventilation Unit with counterflow core.	Report Generation Date	20/02/2024 9:10 AM
Model	HRU-SlimAIR-NA-250		
Manufacturer's Name	Alnor Ventilation System		

Inspection Address

10 Aleja Krakowska
Wola Mrokowska
05-552 Poland

Labels Applied

Material	Label Serial Number	Quantity	Unit Serial Number
1002210	C2965916	1.00	241000971/2
1002210	C2965917	1.00	241000971/3
1002210	C2965918	1.00	241000971/4
1002210	C2965919	1.00	241000971/5
1002210	C2965920	1.00	241000971/6
1002210	C2965921	1.00	241000971/7
1002210	C2965922	1.00	241000971/8
1002210	C2965923	1.00	241000971/9
1002210	C2965924	1.00	241000971/10
1002210	C2965925	1.00	241000971/11
1002210	C2965926	1.00	241000971/12

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1002210	C2965927	1.00	241000971/13
1002210	C2965928	1.00	241000971/14
1002210	C2965929	1.00	241000971/15
1002210	C2965930	1.00	241000971/16
1002210	C2965931	1.00	241000971/17
1002210	C2965932	1.00	241000971/18
1002210	C2965933	1.00	241000971/19
1002210	C2965934	1.00	241000971/20
1002210	C2965935	1.00	241000971/21
1002210	C2965936	1.00	241000971/22
1002210	C2965937	1.00	241000971/23
1002210	C2965938	1.00	241000971/24
1002210	C2965939	1.00	241000971/25
1002210	C2965940	1.00	241000971/27
1002210	C2965941	1.00	241000971/27
1002210	C2965942	1.00	241000971/28
1002210	C2965943	1.00	241000971/29
1002210	C2965944	1.00	241000971/30
1002210	C2965945	1.00	241000971/31
1002210	C2965946	1.00	241000971/32
1002210	C2965947	1.00	241000971/33
1002210	C2965948	1.00	241000971/34
1002210	C2965949	1.00	241000971/35
1002210	C2965950	1.00	241000971/36
1002210	C2965951	1.00	241000971/37
1002210	C2965952	1.00	241000971/38
1002210	C2965953	1.00	241000971/39
1002210	C2965954	1.00	241000971/40
1002210	C2965955	1.00	241000971/41
1002210	C2965956	1.00	241000971/42
1002210	C2965957	1.00	241000971/43
1002210	C2965958	1.00	241000971/44
1002210	C2965959	1.00	241000971/45

1002210	C2965960	1.00	241000971/46
1002210	C2965961	1.00	241000971/47
1002210	C2965962	1.00	241000971/49
1002210	C2965963	1.00	241000971/48
1002210	C2965964	1.00	241000971/50
1002210	C2965913	1.00	241000971/1

Inspection Method 209WI001

Electrical Ratings

Voltage Values	120VAC
Frequency	60Hz
Power Values	105W (0.87A)
No of Wires	2 wire + PE
No of phases	singlephase + PE
SCCR:	--
Connection type	Cord connected - Cord Set, 3C 14AWG SJT CSA
Enclosure Type	Suitable for indoor installation (Type 1)
Environmental Test Conditions	Regular indoor test bench conditions

Test Results

Test Type	Duration of Test	Test Value	Pass/Fail	Test Equipment	Cal Due Date	S/N or ID	Number of Units
E- Dielectric Test	1 sec.	1200VAC	Pass	Multitester MI2094 Z00003969	23/11/2024	14100166	13 of batch 50
E- Leakage Current	--	120VAC	Pass	Fluke 287 - CM	15/05/2024	57620037	1

Test Result Summary

The equipment were subjected to the following tests with acceptable results. Full test data are below described.

Each equipment were tested in production line during the manufacturing, since these test are not witnessed, further test at sample was performed According to SPE-1000-21 Clause 6.1.2.8.2 Table 1 colon III

13 units are tested of production batch of 50 items,

#Dielectric strength test:

The dielectric tests were executed applied the test voltage between power circuits and the ground, during the test all circuit breakers are setting in close position sensitive components were insulated.

The DUT were tested in accordance to SPA-1000 Clause 6.1.2 sub clause 6.1.2.1 & 6.1.2.4

The test was conducted by SIR Maurizio Casto with his personal Dielectric Tester.

Rated voltage 120VAC:

1200VAC was applied for 1 sec. between the power cord line wires and ground wire without evidence of breakdown (0 / 13) of the batch of 50 item.

Equipment Used:

- Dielectric Strength Tester – CSA SIR Personal – Manufacturer EATON – CE MultiTester Model MEMI2094 S/N 14100166 Cal Cert. LAT 238 1581CT-23 - Calibration date: 2023-11-22 Due date 2024-11-22 – CSA Asset No. Z00003969.

#Leakage Current Test:

Current Leakage Test values in mAmps

NOR. POLARITY:

* GCNC: 0,29mA

* GONC: 0.98mA

* GCNO: 0,28mA

REV. POLARITY:

* GCNC: 0.30mA

* GONC: 0.88mA

* GCNO: 0.36mA

Equipment Used:

- Multimeter – CSA SIR Personal – Manufacturer Fluke model – Model 287 S/N 57620037 Cal Cert. LAT 238 0648CT-23 - Calibration date 2023-05-15 Due date 2024-05-15 – CSA Asset No. 14900841.

#Strain and release Test:

Pass

#Flame test

Waived since metal enclosure

Test equipment calibration certificate are kept on file at CSA Group database.



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 94447 Plattling,
 Germany

Applicable Standards

SPE-1000:21

List of Alterations

No alteration found

#####

ENGINEERING CONSIDERATIONS-NOTES-TECHNICAL REFERENCES

- Abbreviation used:
 DUT: Device Under Test
 DOL: Direct On Line Starter
 MCCB: Molded Case Circuit Breaker
 MPCB: Motor Protection Circuit Breaker
 MCB: Miniaturized Circuit Breaker
 OCP: Overcurrent Protection
 OLP: Overload Protection
 OLTC: On Load Tap Charger
 PSU: Power Supply Unit

DESCRIPTION OF THE PRODUCT:

The product investigate is heat recovery ventilation unit for residential application, the unit is composed of control main board PCB enclosed on metal enclosure and two ventilation centrifugal fans for low energy consumption EC motors. The unit is powered by Cord set Type B70 55/64 in with Nema plug grounded

List of Safety Critical Components

Enclosure Components	Metal enclosure not accessible without use of tools
Ground/Bonding Components	Provided see contraction details
Disconnect Components	N/A
Main Overcurrent Protection Components	Provided by glass fuse Mft. SIBA model FF 10A, @600VAC 10A cURus listed suitable for application
Branch Overcurrent	N/A

Protection
 Components

Overload
 Components Ventilation fans motors are electronically protect motors cULus listed suitable for application

Temperature
 device
 Components N/A

Safety Circuit
 Components N/A

Other
 Components - Double insulate PCB transformer Mft. Marchner model VN42.14/25303; @115VAC/15VAC 50/60Hz Class 130(B) cURus listed file E156713
 - PCB Relays model HF118F; 250VAC 10A cURus listed
 - Ventilation fan Mft. Ziehl-Abegg model MK055-4IP.04.RK; @100-130VAC 50/60Hz 3.4A 120W with VSD integrated cURus listed suitable for application

Equipment Description and Function

The heat recovery ventilation unit has a device with PET counterflow core with high temperature efficiency. The equipment is for residential use cord connected.

Construction Review

Components Components were confirmed to be accurately identified on the drawings and bill of material. Critical components were marked with an acceptable approval mark from an accepted NRTL. The components were installed in accordance with the manufacturer's instructions, used for their intended application, and were used within their electrical ratings. Critical safety components that were not approved are identified in the component list of the report.

Mechanical
 Assembly The mechanical assembly was reviewed and found to be smooth and free of sharp edges and burrs. The equipment provided with adequate guarding and the structure was mechanically stable and structurally sound. Adequate guarding of dangerous moving parts.

Disconnecting
 Means N/A Cord connected equipment

Bonding The equipment was provided with an adequately sized bonding terminal and found to be suitable for bonding the equipment to ground in accordance with the requirements of the Canadian Electrical Code, Part I. All exposed non-current-carrying metal parts that could become energized were properly bonded. There was a sufficient number of bonding terminals provided for each incoming and each outgoing circuit.

Enclosure	The enclosure was found to be constructed and assembled to provide the strength and rigidity necessary to resist the abuses to which it will be subjected in the environment in which the equipment is intended to be used without resulting in a fire or shock hazard. The enclosure was made of suitable material to prevent corrosion. Doors and covers were adequately fastened such that live parts were not accessible without the use of a tool. Openings were reviewed and found sized to prevent the test probe from contacting bare live parts of hazard voltages.
Terminals	Conductors were found to be secured in a manner as to obtain good permanent contact. Conductors were firmly gripped in a manner that stray strands cannot cause short-circuits or grounds. Terminals were adequately sized with an ampacity not less than required for application in the device.
Wiring	Internal conductors were found to be suitable for the service intended with respect to voltage, temperature and grouping. The conductors were supported so that there was no undue mechanical strain on the conductors or their terminals. There were no apparent rough edges, burrs or sharp edges that would likely damage the insulation. The conductors were evaluated for the load ampacity.
Overcurrent Protection	Overcurrent and overload devices were found to be suitable for the application, approved for the intended use, and adequately sized for the circuit they are protecting.
Supplementary Protectors	N/A
Motors	Each motor nameplate was reviewed and confirmed to have proper protection sized in accordance with Canadian Electrical Code, Part 1. Cable connections were tight and of the correct size and suitable for the intended environment.
Motor Controllers	Each Motor controller was reviewed to determine it was properly rated for the intended application and sized for the load that it is controlling. Overloads range are within the motors FLA.
Receptacles	N/A
Lighting	N/A
Drives	Drives were reviewed and confirmed to have electronic overload and overcurrent protection. There was adequate space for ventilation, branch circuit overcurrent protection was suitable sized and of an acceptable type and the branch circuit wiring was verified to have the ampacity for the load.
Safety Circuits	N/A

Conditions of Acceptability

- The Equipment has been evaluated for electrical safety only (fire and electrical shock hazards), for installation and use in ordinary (non-hazardous) location in accordance with CEC Part I; other requirements may be mandated by local/provincial/federal authorities and are responsibility of the submitter.

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94447 Plattling,
Germany

- Incoming supply wiring/wiring methods/field wiring to equipment and interconnection wiring between machinery parts – are excluded from the scope of this evaluation – (field wiring to inspection and approval by the local Authority Having Jurisdiction).
- Since the end-user location may need to comply with specific local requirements, the final installation and field wiring connections, interconnections are subject to inspection and approval by the Authority Having Jurisdiction.
- The equipment covered under this Special Inspection is as described in this report; the equipment was assembled as intended and was inspected in February 13, 2024 at ALNOR Facility in Poland at below address:

10 Aleja Krakowska
Wola Mrokowska 05-552
Poland

- Components not certified were investigated in the field and they found acceptable since inserted in operating circuits at SELV / Class 2 (CEC) or low voltage limited-energy circuits (voltage 30 Vac / 42.4 Vdc/peak max, and 100 VA or less)
- Customer have been notified and informed regarding the need of preliminary contacting the local Authority Having Jurisdiction prior to installing the equipment.
- The Equipment was evaluated for installation in an indoor, dry, normal environment only. The product was not evaluated for installation in any hazardous classified location and/or for installation in an environment subject to rainfall, water, spray, steam, or exposure to any corrosive chemicals that deteriorate the enclosure or components.
- The CSA Special Inspection Label shall not be considered as equivalent to the Listing Mark for products.
- The CSA Special Inspection Label indicates compliance with the applicable parts of the Standards referenced above, at the time the Label was applied, and considering only the final installation site. The applicable parts included in the evaluation are the construction review, markings, and those testing protocols that are non-destructive.

The final installation location:
Specialized retailer located in Canada

- Final installation is discussed with Mr. Kejetan Bonryk

Markings

Verified Bilingual Yes
Cautions/Warning # High Voltage
Markings # Danger of Death while touching electrical equipment
 # Suitable for servicing only when de-energized
 # Caution replace fuse with same type and rating

Customer Signature

Signature
Signed By
Date
Type Facility Representative

Prepared By Maurizio Casto



CSA Group Testing & Certification Inc.

CSA Group Bayern GmbH,
Straubinger Straße 100,
94447 Plattling,
Germany

The Client acknowledges that the equipment described in the related report has not been rejected due to unacceptable results of a previous evaluation conducted by a certification organization through any other existing certification service.

NOTE: EVALUATION BY SPECIAL INSPECTION SERVICE SHALL NOT BE CONSIDERED EQUIVALENT OF CSA CERTIFICATION.

The Client agrees to the Conditions of the signed/accepted Quote on file, and Alteration(s) listed on the related report. This report addresses only the product described in the report, as the product existed at the time of the inspection.

- Energy
- Energy Efficiency
 - Energy efficiency for homes
 - Energy efficient products
 - Savings calculators
 - Transportation
 - Alternative Fuels
 - Energy efficiency for buildings
 - Energy efficiency for industry
 - Communities and Infrastructure
- Our Organization
 - Energy Use Statistics
 - Regulations and Standards

Energy Efficiency Ratings: Search

Ventilators, heat/energy recovery ([Select a New Product](#))

The product models that are displayed in the search results are available in Canada and are covered by [Canada's Energy Efficiency Regulations](#).

Looking for [ENERGY STAR](#)? Click to be redirected to the ENERGY STAR® models.

Models: 291

[Download all models \(CSV Format\)](#)

Model Criteria

Model Search Tips

Model number:

Brand name:

- All
- Airflow
- Aldes
- Alnor Systemy Wentylacji Sp. Z O.O.**
- Broan
- Carrier

Energy Efficiency Criteria

Sensible heat-recovery efficiency (SRE) at 0°C:

Range: 57.8 to 90

Minimum: Maximum:

Sensible heat-recovery efficiency (SRE) at -25°C:

Range: 19.5 to 78

Minimum: Maximum:

Product Specific Criteria

Model type: ▾

Search Results

Models: 3 / 291

Sensible heat-recovery efficiency (SRE) at 0°C: Lowest: 81 Highest: 90

Sensible heat-recovery efficiency (SRE) at -25°C: Lowest: 67 Highest: 78

Model number Click on a model number for details	Brand name	Sensible heat-recovery efficiency (SRE) at 0°C	Sensible heat-recovery efficiency (SRE) at -25°C	Select
HRU-PREMAIR-450	Alnor Systemy Wentylacji Sp. Z O.O.	90	78	<input type="checkbox"/>
HRU-MINISTAIR-325	Alnor Systemy Wentylacji Sp. Z O.O.	84	67	<input type="checkbox"/>
HRU-SLIMAIR-250	Alnor Systemy Wentylacji Sp. Z O.O.	81	67	<input type="checkbox"/>