AGRO-WELD

www.agro-weld.pl

COOLING MACHINE FOR POTATOES AND OTHER VEGETABLES

COMBIVENT 50

Model COMBI-VENT50 · Type D5070F4SE



A compact combined cooling and ventilation unit for potato and vegetable storage. Built for 750 tons of product at a 4 °C room temperature, with reliable electrical defrost and a choice of three operating points.

750 t
PRODUCT QUANTITY EACH UNIT

4 °C
ROOM TEMPERATURE

72.2 kW
MAX. EVAPORATOR CAPACITY

R448A
REFRIGERANT

CAPACITIES – POTATOES

PRODUCT	QTY (T)	CAP. 24H	T ROOM	EVAP. CAP.	POWER INPUT	T EVAP. / COND.	AMPS 400 V
Potatoes	750	0.5 °C	4 °C	50.2 kW	15.0 kW	-2 / +40 °C	45 A
Potatoes	750	0.5 °C	4 °C	61.6 kW	12.0 kW	0 / +35 °C	40 A
Potatoes	750	0.5 °C	4 °C	72.2 kW	10.0 kW	0 / +30 °C	37 A

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COMBIVENT 50 · D5070F4SE

TECHNICAL DATA

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COMPRESSOR

Type	**Semi-hermetic Dorin H2201CC**
Refrigerant	**R448A**
Refrigerant charge	**22 kg**

CONDENSER

Capacity	**68 kW**
Condensing temperature	**40 °C**
Ambient temperature	**30 °C**
ΔT	**10 K**
Surface area	**183 m²**
Air volume	**24,000 m³/h**
Fans	**2 pcs. Ø 630**
Power input per fan	**1.6 kW**
Total fan power	**3.2 kW**
RPM	**1450**
Amps per fan / total (400 V)	**2.8 / 5.6 A**

EVAPORATOR

ΔT (T room – T evap.)	**4 K**
ΔT 1 (air off – T evap.)	**1.5 K**
ΔT 2 (T room – air off)	**1.5 K**
Evaporator surface	**428 m²**
Air volume cooling / vent	**54,000 / 81,000 m³/h**
Fans	**3 pcs. Ø 800**
Power input per fan	**4 kW**
Total fan power	**12 kW**
RPM	**1450**
Defrost	**Electrical**

OUTLET HATCHES

Quantity	**2 pcs.**
Dimensions	**1700 × 1200 × 80 mm**

DIMENSIONS

Width	**3500 mm + switch panel 300 mm**
Depth	**2220 mm**
Height	**2250 mm + fans 350 mm = 2600 mm**

CE conformity. Built in accordance with the CE directives for machine construction 98/37/CE and low-voltage electrical installations 73/23/CE; EMC directive 89/336/CE. Operational safety: NEN-EN 292-1/2, 349, 414, 418, 563; NEN-ISO 11201, 11203, 11204. Electrical equipment: NEN-EN 60204-1, NEN-10555, EN 50065/60555.

01 · Airmix Unit Free CoolerAG

AIRMIX UNIT FREE COOLER

Model: AW-FAMCV50-1



Air mix unit for de-condensation of seed or ware potatoes. Heavy-duty welded steel frame, powder-coated panels, C4 corrosion protection for tropical and coastal sites.

TECHNICAL SPECIFICATIONS

Fan type	**EC axial, direct drive**
Quantity	**1 unit**
Fan power	**2–4 kW each**
Fan diameter	**800 mm**
Speed control	**4–20 mA, 0–10 V or Modbus**
Supply	**400 V / 3 Ph / 50 Hz**
Speed range	**600–1250 rpm**
Noise level	**< 90 dB(A) at 1 m**
Protection	**IP54 motor, IP65 electronics**
Bearings	**Maintenance-free, > 40,000 h**

02 · Air Hatch with AutomationAG

AIR HATCH WITH AUTOMATION

Model: AW-AHHACV50-1



Inlet and outlet hatch that mixes inside and outside air for an optimal flow to the product. Fully automatic, opened in pulses by the storage controller.

TECHNICAL SPECIFICATIONS

Opening	**2500 × 1200 × 100 mm PIR**
Insulation value	**0.27 W/m²K**
Flap	**First-class PIR sandwich panel**
Details	**Rubber seal and heating wire**
Motor	**0.15 kW, 1~ 230 V / 50 Hz**
Motor protection	**IP54**
Speed / torque	**1–3 rpm, 90–120 Nm**
Motor load	**1–5 A**
Hardware	**HDG-treated racks and pinions**

03 · EC FanAG

EC FAN

Model: AW-ECFCV50-1



Recirculation fan that improves air distribution in the cold store. Aerodynamic blade with high-efficiency external-rotor EC motor.

TECHNICAL SPECIFICATIONS

Air capacity	**5,000 m³/h**
Motor	**EC, 0.5 kW, 1450 rpm**
Supply	**1~ 230 V or 3~ 400 V, 50 Hz**
Impeller	**Ø 500 mm**
Current	**1.05–0.78 A**
Protection	**IP54 motor, IP65 electronics**
Ambient range	**–35 °C to +40 °C**
Weight	**7–10 kg**
Balancing	**Class G 6.3, DIN ISO 21940**

04 · Humidifier MachineAG

HUMIDIFIER MACHINE

Model: AW-HMCV50-1



Mist-cooling humidifier for seed potatoes and ware potatoes. Runs on a timer or on RH-sensor control, for clean water only.

TECHNICAL SPECIFICATIONS

Capacity	**6.0 l per hour**
Supply	**220–240 V / 50 Hz, 1 Ph**
Motor	**0.25–0.3 kW**
Water pressure	**2–4 bar**
Max. water temp.	**55 °C**
Control	**Timer, RH sensor or vision**
Origin	**EU or equivalent**

05 · CO_2 Extraction MachineAG

CO_2 EXTRACTION MACHINE

Model: AW-CEMCV50-1



Plate heat exchanger (counterflow or cross-flow) that removes CO_2 from seed potato storage while recovering thermal energy.

TECHNICAL SPECIFICATIONS

Refreshment	**1500–2000 m^3 air per hour**
Max. pressure diff.	**50–100 Pa**
Leakage	**0.5–2 % of nominal flow**
Max. temperature	**50 °C**
Material	**Sea-water resistant aluminium or galvanized steel**
Housing	**Epoxy-coated galvanized steel**
Size (L×W×H)	**0.5–2 m per side**
Weight	**50–300 kg**
Fans	**0.2–1.5 kW, 1–3 Ph, 50/60 Hz**

06 · Storage Computer (StorCom)AG

STORAGE COMPUTER (STORCOM)

Model: AW-SCCV50-1



Central control system that unites every controller in one dashboard and keeps temperature, humidity and CO_2 at their optimal values.

TECHNICAL SPECIFICATIONS

Display	**12–15 inch touch HMI**
Access	**PC, laptop, tablet, phone**
Rooms	**Unlimited**
Monitors	**Room, ambient and product temp., RH, CO_2**
Connects	**Cooling, airmix, hatches, CO_2, humidifiers, EC fans**
Integration	**Third-party systems**
Remote data	**Online on phone and internet**

07 · Sensor SetAG

SENSOR SET

Model: AW-SSCV50-1



Continuously self-calibrating sensors with automatic alarm in the software when a value leaves its calibration range.

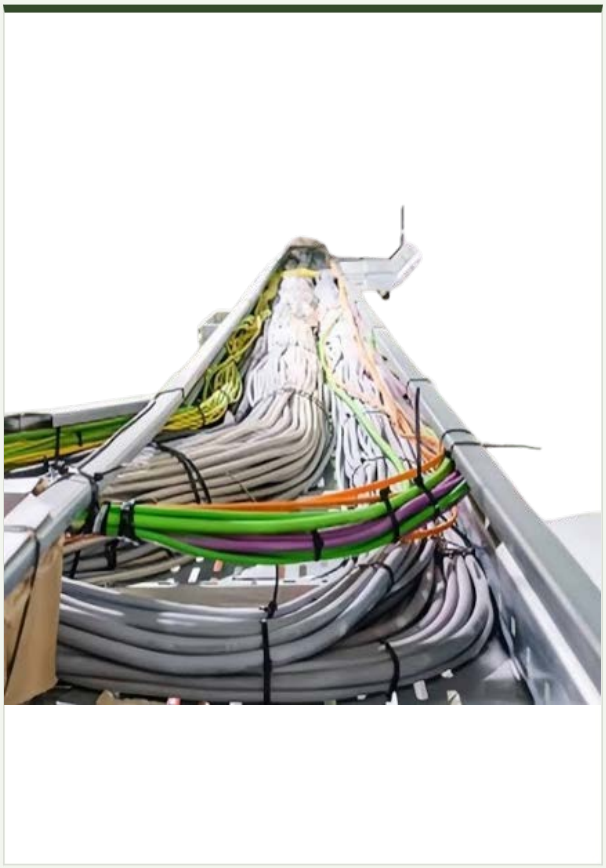
TECHNICAL SPECIFICATIONS

Temperature	**DIN EN Class A, 2-wire**
Wire	**2 × 0.5–1.0 mm**
RH sensor	**Double-sensor core, 2/3-wire**
CO_2 transmitter	**RoHS conform**
Alarm	**Sensor LED and system alarm**
Weather station	**Outside temp. and RH**
Weatherproof	**–50 °C to +80 °C**
Frame	**UV-proof stainless steel or aluminium**

08 · Cable and Cable TrayAG

CABLE AND CABLE TRAY

Model: AW-CV50SET



Copper cable and open electro-galvanized trays, supplied as a complete set for cooling unit, fans, hatches, humidifier and communication.

TECHNICAL SPECIFICATIONS

Cable	**Copper, 750 V class**
Cooling unit to panel	**8/12 core, 100–1500 m**
Fan	**2/4 core, 100–1500 m**
Hatch	**3/5 core, 50–1000 m**
Humidifier	**6/8 core, 50–500 m**
Communication	**3/5 core, 50–1000 m**
Tray 50 × 50 mm	**50–200 m**
Tray 50 × 150 mm	**50–100 m**

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09 · Switch PanelAG

SWITCH PANEL

Model: AW-SPCV50-1



Manual control panel with all components for motors, compressors and fans, built around a central PLC.

TECHNICAL SPECIFICATIONS

Controls	**Motors, compressors, fans, accessories**
Protection	**MCCB, RLCB, MCB**
Make	**Schneider, Siemens, ABB, Eaton or Lovato**
Controller	**Central PLC**
Wiring	**Control cable, tray, cover and ties**
Interconnection	**All machinery in the system**

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@@N · CombiVent 45AG

COMBIVENT 45

Model: COMBI-VENT45 · D45F4SE



Complete cooling machine with semi-hermetic Dorin compressor, electrical defrost and two outlet hatches, sized for 800 tonnes of potatoes.

CAPACITIES & COMPRESSOR

Storage quantity	**550 t potatoes**
Room / product temp.	**4 °C / 0.5 °C**
Evaporator capacity	**44.3 kW**
Power input	**15.5 kW**
Evap. / cond. temp.	**–3 °C / +38 °C**
Supply / current	**400 V / 35.0 A**
Compressor	**Dorin H1800CC, semi-hermetic**
Refrigerant	**R448AC**
Refrigerant charge	**17 kg**

CONDENSER

Capacity	**58 kW**
Cond. / ambient temp.	**40 °C / 30 °C**
ΔT	**8 K**
Surface area	**140 m²**
Air volume	**18,000 m³/h**
Fans	**2 pc. Ø 630**
Power per fan / total	**1.1 kW / 2.2 kW**
RPM	**1450**

EVAPORATOR

Capacity	**44.3 kW**
ΔT 1 / ΔT 2	**1.5–2 K / 1.5–2 K**
Surface	**372 m²**
Air volume cooling / vent	**40,000 / 65,000 m³/h**
Fans	**2 pc. Ø 600**
Power per fan / total	**4.0 kW / 8 kW**
RPM	**1450**
Defrost	**Electrical**

Outlet hatches 2 pcs · 2500 × 1200 × 80 mm

W 3000 mm + switch panel 300 · D 1800 · H 2050 + fans

CE directives 98/37/CE · 73/23/CE · 89/336/CE

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@@N · CombiVent 70AG

COMBIVENT 70

Model: COMBI-VENT70 · D70F4SE



Complete cooling machine with semi-hermetic Dorin compressor, electrical defrost and two outlet hatches, sized for 1200 tonnes of potatoes.

CAPACITIES & COMPRESSOR

Storage quantity	1200 t potatoes
Room / product temp.	4 °C / 0.5 °C
Evaporator capacity	81.3 kW
Power input	27.5 kW
Evap. / cond. temp.	−3 °C / +48 °C
Supply / current	400 V / 48.5 A
Compressor	Dorin H3500CC, semi-hermetic
Refrigerant	R448AC
Refrigerant charge	39 kg

CONDENSER

Capacity	94 kW
Cond. / ambient temp.	48 °C / 38 °C
ΔT	10 K
Surface area	380 m²
Air volume	64,000 m³/h
Fans	4 pc. Ø 630
Power per fan / total	1.5 kW / 6.0 kW
RPM	1450

EVAPORATOR

Capacity	81.3 kW
ΔT 1 / ΔT 2	1.5–2 K / 1.5–2 K
Surface	1072 m²
Air volume cooling / vent	80,000 / 120,000 m³/h
Fans	4 pc. Ø 800
Power per fan / total	4.0 kW / 16 kW
RPM	1450
Defrost	Electrical

Outlet hatches 2 pcs · 2500 × 1200 × 80 mm

W 4500 mm + switch panel 300 · D 2000 · H 2250 + fans