REVOMAX II
BY OPTICLIMATE

Installation Manual



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1. INTRODUCTION



Please read this manual carefully before attempting to install the Opticlimate Revomax II. The RevomaxII is a high performance climate control system, we strongly advice to seek the services of an installation professional.

These products may represent a possible shock or fire hazard if improperly installed or attached in any way. Products should be installed in accordance with the owners manual and local electrical guidelines and law.

When operating with a separate humidifier, make sure it is an adiabatic humidifier to prevent the corrosion of electronics in the room. Using reverse osmosis by itself is not enough to prevent corrosion. Any damage to Airlux Technologies hardware caused by not using the correct humidifier is not covered under our warranty.

1.1 SAFETY PRECAUTIONS

Installation

- Make sure that the Revomax unit is installed indoors in a well-insulated building/room: R value 12 or higher. Ambient operating temperatures must stay in the 16 to 24 degrees celcius range.
- Make sure the Revomax is installed spirit level.
- Make sure a P-trap is installed on the condensation outlet.
- Make sure all piping and water connections are properly supported to prevent leaking.
- Make sure the return air filter and/or plenum box are clean without obstructions or high air resistance.
- Make sure the supply air ducting and/or air distribution hose is of the correct diameter, typically the same diameter of the supplied flange.
- Make sure all covers and panels are on the machine while in operation.

Electricity

- Make sure the correct diameter cable is used to power the machine (see spec sheet, chapter 1/local code).
- Make sure the correct MCB (miniature circuit breaker) is installed (see spec sheet, chapter 1/local code).
- Make sure the correct RCD (residual current device) type B (earth-leak) is installed (see data sheet/local code).
- Make sure the room temperature sensor is connected on the correct position on the circuit-board.
- Make sure the room temperature sensor is in the room and shielded from direct light or air streams.

Water/glycol

- Always install the watercooler outside the building. We do not support indoor placed watercoolers.
- Make sure flow and return piping has the correct diameter, check chapter 5 for more information.
- Make sure there is no air trapped in the system. Use an air vent at the hight point of the circuit (closed loop only, chapter 5).
- Never use water only, when outdoor temperatures are below freezing. (closed loop only, chapter 5).
- Use dipswitch 3 to start the pump and open water valve to test for leaks/air before full operation (chapter 7).
- Use water/glycol mix for below zero temperature protection (closed loop only, chapter 7).
- Make sure fresh water supply is steady below 25 degrees all year round.

General

- Do not use sulfuric acid in the (grow) room when operating a Revomax II unit, as sulfur compounds can cause severe corrosion of electrical components.
- Keep distance from the fan / supply air. Turning parts and rotating fan blades are dangerous.
- Do not power the machine when the electric compartment is open, circuit-boards and connectors might be charged.
- In a food / agro environment always use food-grade glycol (propylene glycol) (closed loop only, chapter 7).
- Make sure you are aware of all features and settings for correct day-to-day operation.
- Electrical connections should be done by a certified electrician. In some regions this is required by law.
- Water glycol setup should be done by a certified installer. In some regions this is required by law.
- Operating the system should be done by personnel that is fully aware of it's functions.
- Do not operate the unit without the filter or with a less effective filter. The heat exchange coils inside the unit become clogged and require disassembly to clean.

1.2 INTRODUCTION

The OptiClimate RevomaxII is a state-of-the-art climate control system designed to provide an optimal growing environment for a wide variety of plant species. Leveraging advanced Infinity DC inverter technology, this system offers unmatched flexibility in climate control, allowing for precise adjustments up to one tenth Hertz increments in cooling, heating, dehumidification, and air filtration. Its capacity to maintain super stable humidity, room temperature and output temperature ensures the health and productivity of your plants under any indoor condition.



RevomaxII unit

Model Variations

Output Power
The RevomaxII is available in 6000 to 30000 Watt versions. The model you need with sufficient cooling capacity can be calculated by adding up the power outputs for all heat generating devices like fixtures. In most common situations, it's a 1-1 relationship. Example: 12 x 800 Watt HPS fixtures generate 9600 Watts of heat, whichs means you need a 10000 RevomaxII model to cool the growing area. LED is much more efficient per watt, so you need less watts and thus fxtures. This means a LED based installation generates less heat than an HPS one. The other factor is de-humidification capacity. To calculate the needed capacity for de-humidification, your can use a rough guideline of 650 watts per m2 of green to get 50% of relative humidity (RH) in the night cycle (depending on your crop). Always check your personal needs before purchasing your RevomaxII.



Dimlux XtremeII LED Fixture



Dimlux Expert HPS Fixture

Regular - Cultivation
All RevomaxII models are able to cool to a maximum of 0.4 degrees celcius deviation of the setpoint temperature. With the RevomaxII you are able to control humidity with a maximum 'swing' of 4% (depending on the humidity load) of the set humidity level. In case you use LED fixtures, you might even need to heat the room instead of cooling it. The RevomaxII is unique and can heat a room while de-humidifying.

Deep Cool - Storage
Normal Revomax units can cool a space to about 16 degrees Celsius, which is more than sufficient for all plants and vegetables, as they thrive in warmer conditions. But if you're looking to turn the space into a cold storage solution—keeping your harvest fresh, just like in a fridge—then we've developed the Revomax Deep Cooling system, designed specifically for your post-harvest needs. Depending on the insulation and capacity the unit can cool close to 0 degrees Celcius.



Seperate Fan

Separate Fan - Flexible installation
With the sep-fan model (separate-fan) you are able to place the active fan in another location, combined with air hoses or air duct systems.

Free Air - Glass houses
The RevomaxII Free Air is made to blow air freely instead of using a ducting system or hoses. The Free Air is designed in such a way that it takes up as little volume as possible and thus takes up as little space as possible and at the same time intercepts as little light as possible.



Seperate Fan on RevomaxII

Product Features

Broad Capacity Range: We are able to adjust the cooling capacity in significantly smaller increments than our competition. We can reach 20-30 percent increments versus more than 60 percent at our competitors. This ensures a very stable climate all year round.
Optimized for LED Growing: Addresses the challenges of growing with LED lights by ensuring the room reaches optimal temperatures for photosynthesis more quickly and efficiently.
Advanced Safety Features: Includes built-in temperature protection, water leak safeguard (optional), and a fireproof system to ensure the operation is as safe as it is efficient.
Smart Remote Control: Comes with a smart remote controller for easy management of settings and receiving alarms and warnings via email, enhancing convenience and monitoring.
Superior Air Quality Management: Its built-in lightweight filter keeps the interior components clean ensuring your plants thriving at any moment during the growth cycle.



RevomaxII Free-Air

2. SPECIFICATIONS

MODEL	6000 REV2	10000 REV2	15000S REV2	15000 REV2
	REGULAR & DEEP COOL	REGULAR & DEEP COOL	REGULAR & DEEP COOL	REGULAR & DEEP COOL
Nominal Power Capacity - kWatt	6 kW	10 kW	15 kW	15 kW
Maximum Power Capacity - kWatt	7 kW	12 kW	19 kW	19 kW
De-humidification Capacity - Liters/24Hrs*	85 L	142 L	213 L	213 L
Electricity				
Power Supply - Volt	230v-400v	230v-400v	230v-400v	400v
Phase	1 or 3	1 or 3	1 or 3	3
Compressor (inverter) - Volt	DC (230V)	DC (230V)	DC (230V)	DC (400V)
Compr. Freq. Min (Max) - Hz	30 (110) Hz	30 (90) Hz	30 (85) Hz	30 (85)Hz
Fuse MCB single-phase (3-phase)	C32 (C20)	C40 (C25)	C63 (C40)	C25 3ph+N
Total 3-Phase Ampere	17 A	24 A	n/a	23 A
Total 1-Phase Ampere	28 A	38 A	68 A	n/a
Cable diameter (mm) 3 phase	2,5 mm2	4 mm2	10 mm2	6 mm2
Cable diameter (mm) 1 phase	6 mm2	6 mm2	25 mm2	n/a
Internal Glass Fuse Heater (3x) - Ampere	16 A	16 A	16 A	16 A
Internal Glass Fuse Main - Ampere	5 A	5 A	5 A	5 A
Power Factor cos Φ	0,9	0,9	0,9	0,9
Cooling & Heating				
Nominal (cooling) rated power - kWatt	1,3 kW	2,1 kW	5,0 kW	5,0 kW
Max cooling rated power - kWatt	1,9 kW	3,5 kW	6,5 kW	6,5 kW
Max current (cooling) - Ampere	9 A	16 A	30 A	16 A
Electrical Heating Power - kWatt	3 x 1,3 kW	3 x 1,6 kW	3 x 2,7 kW	3 x 2,7 kW
Electrical Heating Current - Ampere	3 x 5,5 A	3 x 8,0 A	3 x 13,0 A	3 x 13,0 A
De-Humidify 20 degrees WB - kg	5 kg	8 kg	12 kg	12 kg
Coefficient of Performance COP	4,6	4,6	3,2	3,5
Total max power capacity (heating& cooling)	10,9 kW	16,8 kW	17,6 kW	17,6 kW
Airflow				
Rated Air Flow m3/h	1300 m3/h	1900 m3/h	2200 m3/h	2200 m3/h
Static Pressure Pascal	0 Pa	0 Pa	0 Pa	0 Pa
Rated Air Flow m3/h	1100 m3/h	1600 m3/h	2450 m3/h	2450 m3/h
Static Pressure Pascal	100 Pa	100 Pa	100 Pa	100 Pa
Refrigerant				
Type	R410A	R410A	R410A	R410A
Charge Volume - kg	2,3 kg	2,7 kg	3,45 kg	3,85 kg
GWP number	2088	2088	2088	2088
CO2 Equivalent - Ton	4,8	5,64	7,2	7,2
Flow demand cold water (25 deg. Celcius Max)				
Cooling mode - Liters/min	2,0 - 4,0 L/min	3,0 - 6,0 L/min	3,0 - 10,0 L/min	3,0 - 10,0 L/min
Heating mode - Liters/min	0,0 - 4,0 L/min	0,0 - 6,0 L/min	0,0 - 10,0 L/min	0,0 - 10,0 L/min
Flow demand recirculating water				
Cooling mode - m3/hour	1,2 m3/h	2 m3/h	3 m3/h	3 m3/h
Heating mode - m3/hour	1,2 m3/h	2 m3/h	3 m3/h	3 m3/h
Water Temperature Limits				
Temp In (recirculating) - ° Celcius Max	25 (55) °	25 (55) °	25 (55) °	25 (55) °
Temp Out (recirculating) - ° Celcius Max	65 (65) °	65 (65) °	65 (65) °	65 (65) °
Delta (recirculating) - ΔT	5 °	5 °	5 °	5 °
Size L x W x H cm	91 x 57 x 44 cm	99 x 67 x 49 cm	114 x 70 x 54 cm	114 x 70 x 54 cm
Weight kg	79 kg	94 kg	124 kg	124 kg

* measured at 27 degrees Celcius / 60 % humidity

MODEL	21000 REV2	30000 REV2	30000 Free Air	30000 SEP-FAN
	REGULAR & DEEP COOL	REGULAR & DEEP COOL		
Nominal Cooling Capacity - kWatt	21 kW	30 kW	30 kW	30 kW
Maximum Cooling Capacity - kWatt	23 kW	35 kW	35 kW	30 kW
De-humidification Capacity - Liters/24Hrs	298 L	425 L	425 L	425 L
Electricity				
Power Supply - Volt	400v	400v	400v	400v
Phase	3	3	3	3
Compressor (inverter) - Volt	DC (400v)	DC (400V)	DC (400v)	DC (400v)
Compr. Freq. Min (Max) - Hz	30 (85) Hz	30 (85) Hz	30 (85) Hz	30 (85) Hz
Fuse MCB single-phase (3-phase)	C32 3ph+N	C50 3ph+N	C50 3ph+N	C50 3ph+N
Total 3-Phase Ampere	27 A	36 A	36 A	36 A
Total 1-Phase Ampere	n/a	n/a	n/a	n/a
Cable Diameter (mm) 3 phase	6 mm2	10 mm2	10 mm2	10 mm2
Cable Diameter (mm) 1 phase	n/a	n/a	n/a	n/a
Internal Glass Fuse Heater (3x) - Ampere	16 A	16 A	16 A	16 A
Internal Glass Fuse Main - Ampere	5 A	8 A	8 A	8 A
Power Factor cos Φ	0,9	0,9	0,9	0,9
Cooling & Heating				
Nominal cooling rated Power kWatt	6,0 kW	9,0 kW	9,0 kW	9,0 kW
Max cooling rated Power - kWatt	6,3 kW	15,0 kW	15,0 kW	15,0 kW
Max current cooling - Ampere	20 A	25 A	25 A	25 A
Electrical Heating Power - kWatt	3 x 2,7 kW	3 x 3,7 kW	3 x 3,7 kW	3 x 3,7 kW
Electrical Heating Current - Ampere	3 x 13,0 A	3 x 16,0 A	3 x 16,0 A	3 x 16,0 A
De-Humidify 20 degrees WB - kg	17 kg	19 kg	19 kg	19 kg
Coefficient of Performance COP	3,5	3,3	3,3	3,3
Total max Power capacity (heating & cooling) kW	17,6 kW	26,1 kW	26,1 kW	26,1 kW
Airflow				
Rated Air Flow m3/h	3900 m3/h	6500 m3/h	6000 m3/h	6500 m3/h
Static Pressure Pascal	0 Pa	0 Pa	0 Pa	0 Pa
Rated Air Flow m3/h	3100 m3/h	5000 m3/h	5000 m3/h	5000 m3/h
Static Pressure Pascal	200 Pa	200 Pa	200 Pa	200 Pa
Refrigerant				
Type	R410A	R410A	R410A	R410A
Charge Volume - kg	4,4 kg	6 kg	6 kg	6 kg
GWP number	2088	2088	2088	2088
CO2 Equivalent - Ton	9,19	12,53	12,53	15,53
Flow demand cold water (25 deg. Celcius Max)				
Cooling mode - Liters/min	3,0 - 12,0 L/min	3,0 - 20,0 L/min	3,0 - 20,0 L/min	3,0 - 20,0 L/min
Heating mode - Liters/min	0,0 - 12,0 L/min	0,0 - 20,0 L/min	0,0 - 20,0 L/min	0,0 - 20,00 L/min
Flow demand recirculating water				
Cooling mode - m3/h	4,5 m3/h	6 m3/h	6 m3/h	6 m3/h
Heating mode - m3/h	4,5 m3/h	6 m3/h	6 m3/h	6 m3/h
Water Temperature Limits				
Temp In (recirculating) - ° Celsius Max	25 (55) °	25 (55) °	25 (55) °	25 (55) °
Temp Out (recerculating) - ° Celsius Max	65 (65) °	65 (65) °	65 (65) °	65 (65) °
Delta (recirculating) - AT ° Celsius	5 °	5 °	5 °	5 °
Size L x W x H cm	122 X 82 X 59 cm	148 x 86 x 74,9 cm	148 x 86 x 74,9 cm	148 x 86 x 74,9 cm
Weight kg	181 kg	232 kg	232 kg	232 kg

* measured at 27 degrees Celsius / 60 % humidity

3. INSTALLATION

3.1 PACKAGE CONTENTS

SYSTEM HARDWARE

All RevomaxII units are supplied with a model specific connectorset (chapter 3.2) containing the following items:

1. Revomax II unit - in selected specification
2. Mounting Brackets
3. Rubber damping rings
4. Smart Remote Controller with accessories
5. Controller Cable
6. Various Mounting Parts
7. Humidity & Light Sensor
8. Temperature Sensor
9. Flange

1. REVOMAX II UNIT



2. MOUNTING BRACKETS



3. RUBBER DAMPING RINGS



4. SMART REMOTE CONTROLLER



5. CONTROLLER CABLE



6. VARIOUS MOUNTING PARTS



7. HUMIDITY & LIGHT SENSOR



8. TEMPERATURE SENSOR



9. FLANGE



3.2 CONNECTOR SET VARIATIONS

MODEL RANGE	FLANGE	INCLUDED CONNECTOR SET
REVOMAX 6000 & DEEP COOL	Ø250 AC 3-115	STANDARD 3500/6000 1-7810K
REVOMAX 10000 & DEEP COOL	Ø315 AC 3-118	STANDARD 10000/15000/21000 1-7810G
REVOMAX 15000 & DEEP COOL	Ø315 AC 3-118	STANDARD 10000/15000/21000 1-7810G
REVOMAX 21000 & DEEP COOL	ØD398 AC 3-125	STANDARD 10000/15000/21000 1-7810G
REVOMAX 30000 & DEEP COOL	ØD448 AC 3-126	STANDARD 10000/15000/21000 1-7810G
REVOMAX 30000 FREE AIR	ØD448 AC 3-126	STANDARD 10000/15000/21000 1-7810G

For the 21000 and 30000 models the Flange is sold separately



RevomaxII Flange

3.3 SUPPLIED SENSORS

Humidity Sensor with light cell

Detects actual humidity of the room, hang halfway between canopy and fixtures for optimal readings. Humidity level is shown on the Smart Remote Controller and is used to control the settings on the RevomaxII unit. Depending on the growing needs we can use the light sensor or the internal clock to determine the day and night cycle.



Humidity & Light Sensor

Air Temperature Sensor

Detects actual air temperature of the room, hang halfway between canopy and fixtures and in the shade (or weather housing) for optimal readings. The temperature is shown on the Smart Remote Controller in degrees Celcius and its values are used to control the settings on the RevomaxII unit.



Temperature Sensor

3.4 OPEN TAP & CLOSED LOOP WITH COOLER

The RevomaxII system is designed to be very flexible in setup and combinations while maintaining its trademark performance. This manual describes an overview of installation options. But we have near endless combinations and can scale up easily.

Possibilities are endless and all situations are different. For this reason we have created a collection of starter-kits for your convenience. All water-related piping and piping connectors are not part of our offer as we recommend different materials and diameters for different situations. Check our knowledgebase for a complete overview of everything you need.

3.5 DIMENSIONS

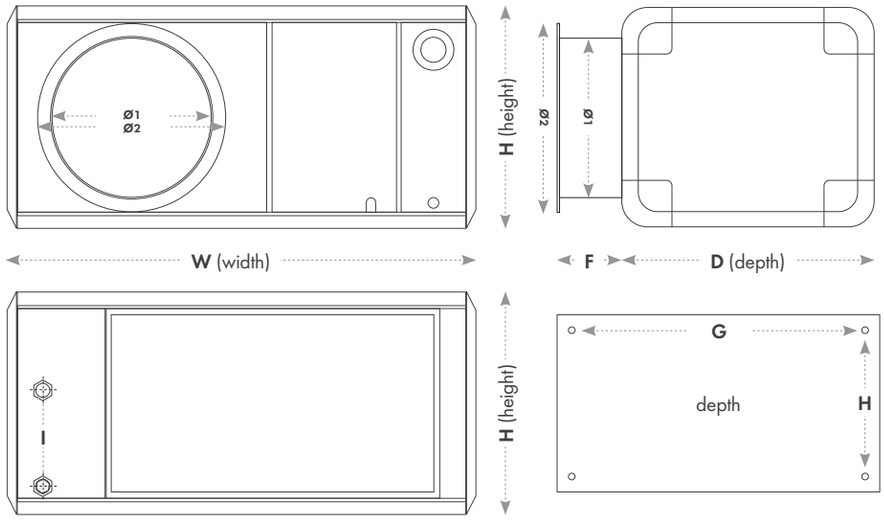
DIMENSIONS (MM)

Model	W	D	H	ø1	ø2	F	G	H	I
6000	910	570	440	245	310	55	805	405	250
10000	990	670	490	245	310	55	870	500	250
15000	1140	700	550	310	410	70	1015	535	250
21000	1220	820	590	398	-	-	1100	660	250
30000	1480	860	750	448	-	-	1365	675	465
30000 FREE AIR	1480	860	750	600	720	280	1365	675	465

WEIGHT

Model	KG	LB
6000	79	174,1
10000	94	207,2
15000	124	273,3
21000	181	399,0
30000	232	511,5
30000 FREE AIR	227	511,5

LINE DRAWING



3.6 PLACEMENT

The Revomax II is a high performance climate control system that needs 15 cm of open space for airflow to function properly. Please ensure to leave at least 15 cm of space on all sides (except at the bottom of the unit).

Mount the unit in any of the available options as described in chapter 3.7 to 3.11. Make sure the frame or structure is strong enough to carry the weight of your unit. For reference, check the table above.

For specific instructions check chapter 3.7.



Installation spacing for optimal airflow

3.7 PREPARING THE UNIT

1. Place the transport casing on a flat, stable surface
2. Carefully remove the packaging from the unit
3. Unscrew the bolts from the wooden pallet the unit was supplied on.
4. Choose mounting option:
   - A - Ceiling
   - B - Frame
   - C - Surface



RevomaxII is delivered on wooden pallet

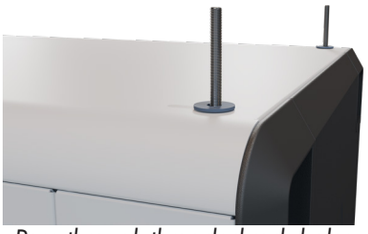
Continue to the corresponding section below:

3.8 INSTALLATION OPTION A > CEILING

Install the Revomax II to the ceiling to maximize floor space. The additional needed installation equipment is not included in the package. All materials are industry standard and readily available at any hardware store.

Needed additional equipment (not included)

- 4 threaded rods M8 of desired lenght - bottom Revomax II to ceiling
- 4 M8 nuts
- 4 threaded rod ceiling plates
- 4 rubber damping rings
- 4 washing rings
- Lifting equipment



Pass-through threaded rods holes

Steps

1. Mount the ceiling plates on the ceiling with corresponding spacing, check technical drawings (chapter 3.5) of your specific model
2. Use lifting equipment to raise the unit, spirit leveled, exactly below the ceiling plates
3. Use the equal length threaded rod and pass them trough the casing on the edges of the casing
4. Connect the threaded rod to the ceiling plates
5. Use the rubber mounting rings below the holes to dampen vibrations
6. Use the mounting nuts and washer rings to secure the threaded rods



Pass-through threaded rods holes

3.9 INSTALLATION OPTION B > FRAME

For maximum flexibility and ease of install, use a 3rd party wall mount heavy duty air conditioning frame to mount the Revomax II on the wall. The Needed equipment:

Needed additional equipment (not included)

- Heavy duty 3rd party wall mount frame
- Lifting equipment
- Brackets (included)



Example wallmount

Steps

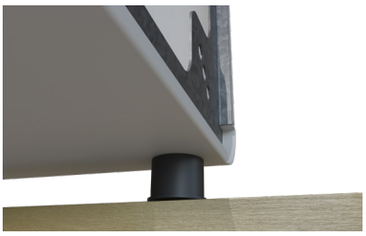
1. Place or mount the frame on the wall, make sure to place with corresponding spacing
2. Lift the unit on the brackets
3. Securely attach the unit on the frame, use the supplied rubber rings to dampen vibrations

3.10 INSTALLATION OPTION C > SURFACE

The Revomax II system can also just be placed on any stable surface. Floors or heavy duty shelves. No extra equipment needed except for lifting the unit on the target surface.

Needed additional equipment (not included)

- Lifting equipment
- Brackets (included)



RevomaxII on surface

3.11 EXAMPLE INSTALLATIONS



Ceiling mounted



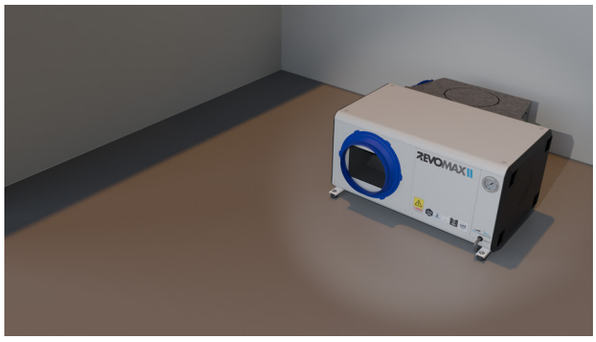
Celling mounted with airhose, inside growing area



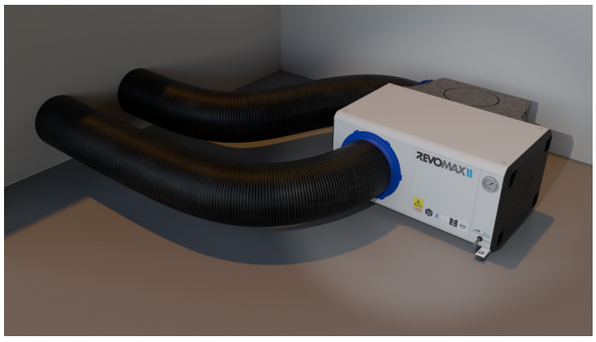
Wall mounted



Wall mounted with airhose inside growing area



Surface mounted with plenumbox (needs hoses)



Surface mounted outside the growing area with plenumbox

4. WATER AND CONFIGURATIONS

4.1 WATER SUPPLY

The RevomaxII needs a clean, continuous and cool water supply to operate properly. This can be achieved in two distinct operation methods: tap water or a closed loop with an OptiClimate watercooler. Both are viable options, depending on your growing needs and surrounding situations like the availability of clean water and climate. In this chapter we will explore the first option. The closed loop is described in chapter 5 with a focus on a single RevomaxII and a single water cooler. Other configurations are possible as shown in chapter 4.4.

Check the specifications of your model in chapter 1 to determine the cool water supply in m3 per hour. In the case that your basic water supply is below 25 degrees celcius all year round without exception, you can operate without a separate water cooler.

Note that when you want to create a closed loop, the RevomaxII heats the water when in cooling mode. Make sure to have sufficient cooling power for your situation. When the inlet water temperature rises above 25 degrees Celcius, the Revomax cannot cool to specification and more cooling power is needed.



Revomax Backside: water connections

1. Water Outlet
2. Water Inlet
3. Condensation Outlet

4.2 PIPING

Piping is not included in the RevomaxII package as every situation is different. The system can be connected with industry-standard PE Tyleen or other type of water piping. We recommend using at least 32mm PE (Poly-Ethylene) piping with 'quick-connectors' for easy and flexible installation. A great alternative is to use PVC-C. We recommend using a certified plumber for the installation of the loop.

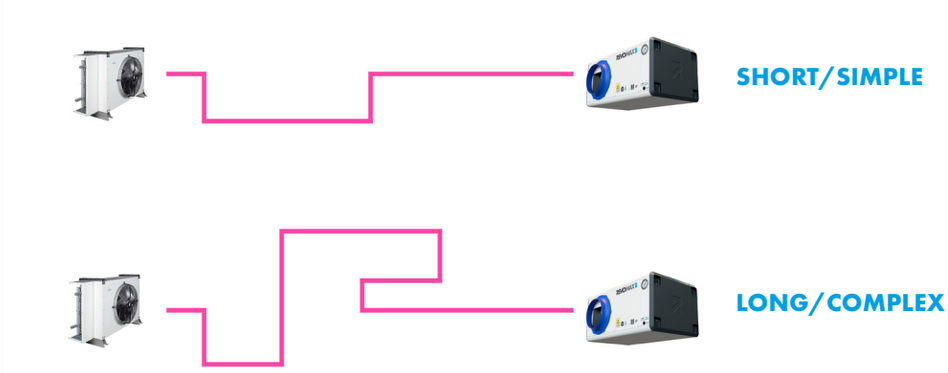
To determine the correct diameter for your setup, two key factors must be considered: length and complexity. We always recommend keeping the loop as short and straightforward as possible, since every bend and every additional meter reduces water flow.

There is no universal rule, as every installation differs. When in doubt, contact your dealer or local plumber for advice. As a general guideline, use 32 mm piping for shorter loops with few bends, and 40+ mm piping when length and complexity increase.

Important: always make sure all piping, water couplings, the water cooler and water pump are properly supported to prevent leaking. Use water pipe clamps every two meters and at every bend.



Water Pipe Clamp



4.3 3RD PARTY WATER CONNECTIONS - WHAT TO BUY

To connect all piping and sensors to your system, you also need a list of water connections and accessories that fit your piping of choice. We have a comprehensive list of needed items on our knowledgebase at https://opticlimate.com/knowledge-base/in the checklist section.

4.4 SPECIAL CONFIGURATIONS

Beside the basic options, take a brief look at what we can do with the RevomaxII. All variations are perfectly viable and scalable and need a professional design and preparation from your dealer or find us at airluxtechnologies.com. The high-performing RevomaxII system needs to be installed with all hardware and guidelines (chapter 2.1) in mind to ensure long-term reliable operation.

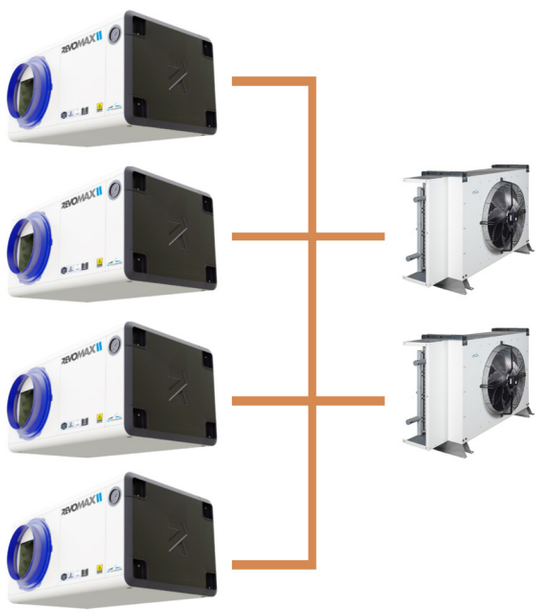
Multi-RevomaxII setup with single cooler

Install two or more RevomaxII units in multiple growing areas or rooms, combined with one big watercooler unit.

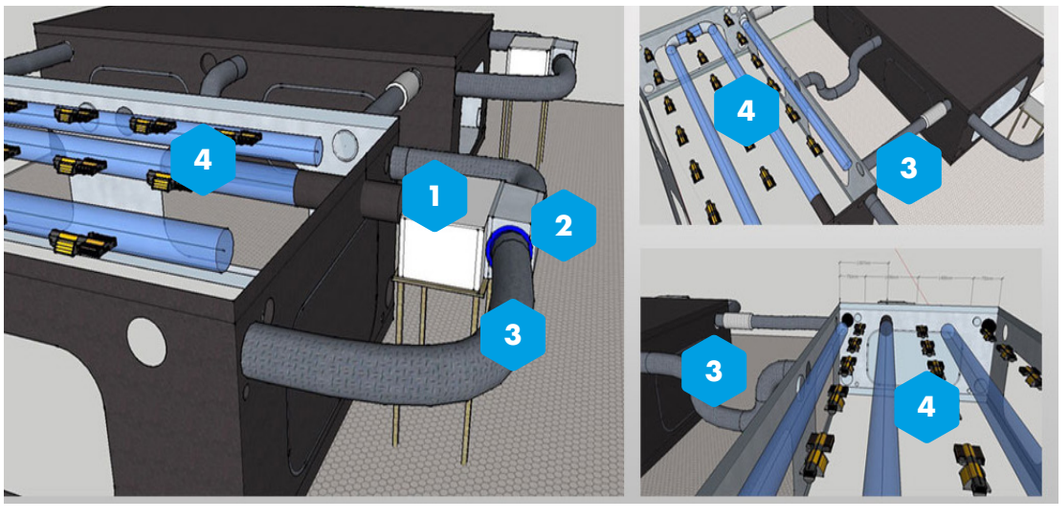


Multi-RevomaxII setup with multiple coolers

Install multiple RevomaxII units in multiple growing areas combined with multiple watercoolers



Option 3: RevomaxII unit outside growing area
Install the RevomaxII unit outside the growing area with our Plenumbox and airhose system



Multiple views of Plenumbox based multi-room setup

1. RevomaxII unit
2. PlenumBox
3. Airhose system
4. Growing Area

Whatever your growing needs
With the flexibility of the RevomaxII system you can easily scale to whatever situation you might have. There is no growing area too complex or difficult for us! Challenge us for your next project. Contact your dealer or find us at airluxtechnologies.com to guide you through the next level of indoor farming.



RevomaxII sep-fan and custom aluminium airhoses. The fan is installed integrated in the airhoses.

4.5 OPEN TAP

The most basic option is to use an open tap, continouos and steady water supply that is under 25 degrees Celsius year round. The source can be a public watersupply or a fresh watersource like a lake or river.

Solenoid valve & water leak sensor - Optional

Use our magnetic solenoid valve and water leak sensor for safety. When a leak is detected the system will shut down to prevent damage. Place the valve directly after the water source in a fixed, easy to access location. The magnetic coil of the valve must be placed upwards or alternatively to the side. Never downwards.

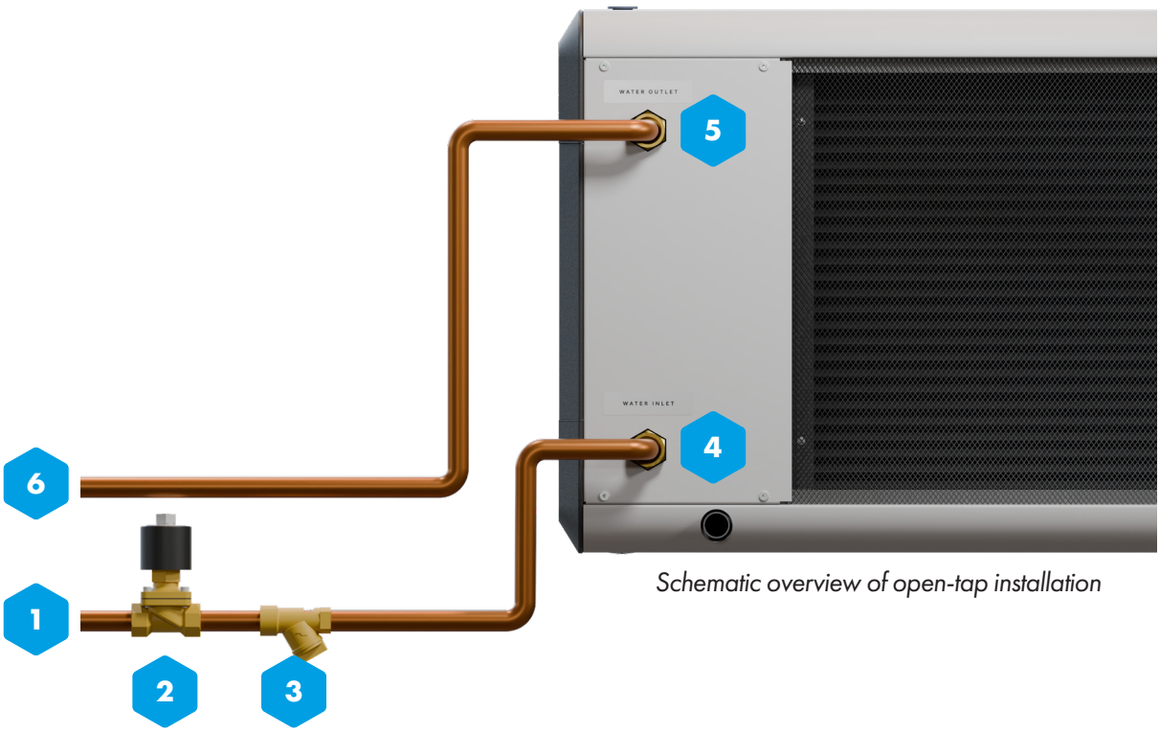
Strainer & Insulation - Optional

It's highly recommended to use a strainer to filter the water and insulate the water supply piping to prevent condensation build-up and optimize efficiency.

Connection diagram

Connect the system in following sequence to operate correctly:

1. Water source
2. Solenoid (magnetic) Valve - optional - closes when the water leak sensor detects water leakage
3. Water strainer - optional - filters particles that could be present in the water source like a river
4. RevomaxII water inlet
5. RevomaxII water outlet
6. Drainage / water recycling



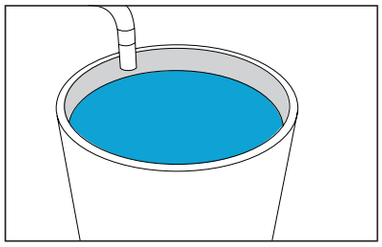
Schematic overview of open-tap installation

4.6 CONDENSATION WATER

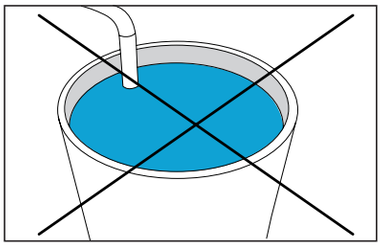


Discharge of the condensation water

The unit will dehumidify the air during cooling and in dehumidify mode. The moisture extracted from the air is collected in the internal condensation pan, which has a ¾ drain pipe where the condensate will run off. The condensate is clean and can be used as irrigation water if desired. Collect or dispatch the water depending on your needs. Equipment or reservoirs are not included.



Correct: drainage above reservoir

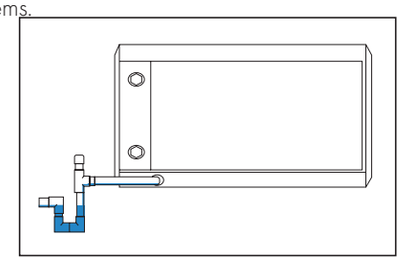


Incorrect: drainage in reservoir

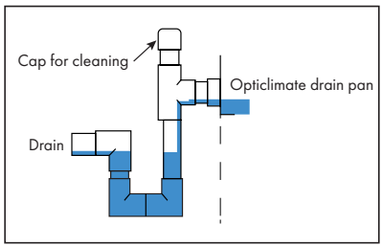


P-trap

Make sure the drainage outlet rests above the water-reservoir at all times. When in the water, the drainage stops and the RevomaxII can flood internally because the water cannot run off. Use a "P-trap" on the condensation outlet to prevent air entering the unit and to prevent condensate run-off problems.



P-trap connected correctly



P-trap close-up

Reservoir

Depending on the humidity, watering habits and climate the Revomax dehumidifies up to 96 percent of water in the air. Make sure to have a large enough reservoir or drainage capacity when collecting the condensation water.

Condensation Lift Pump

If the unit is installed at the same level or lower than the drain or sewer, a condensation lift pump is mandatory for correct operation. Our basic lift pump (SKU 1-10) pumps the water through a 9mm hose to a height of 4 meters into the drain or collecting tank. Stronger pumps are also available. For more information or pump-capacity questions, don't hesitate to contact your dealer or find us at airluxtechnologies.com



Condensation Lift Pump

5. CONTROL SETUP

5.1 CONNECTION BOARD

Remove the front panel to connect the supplied Smart Remote Controller and sensors. Lead the sensors to the growth area and place on crop level, outside the range of a direct lighting source. The connection board is accessible behind the front panel.

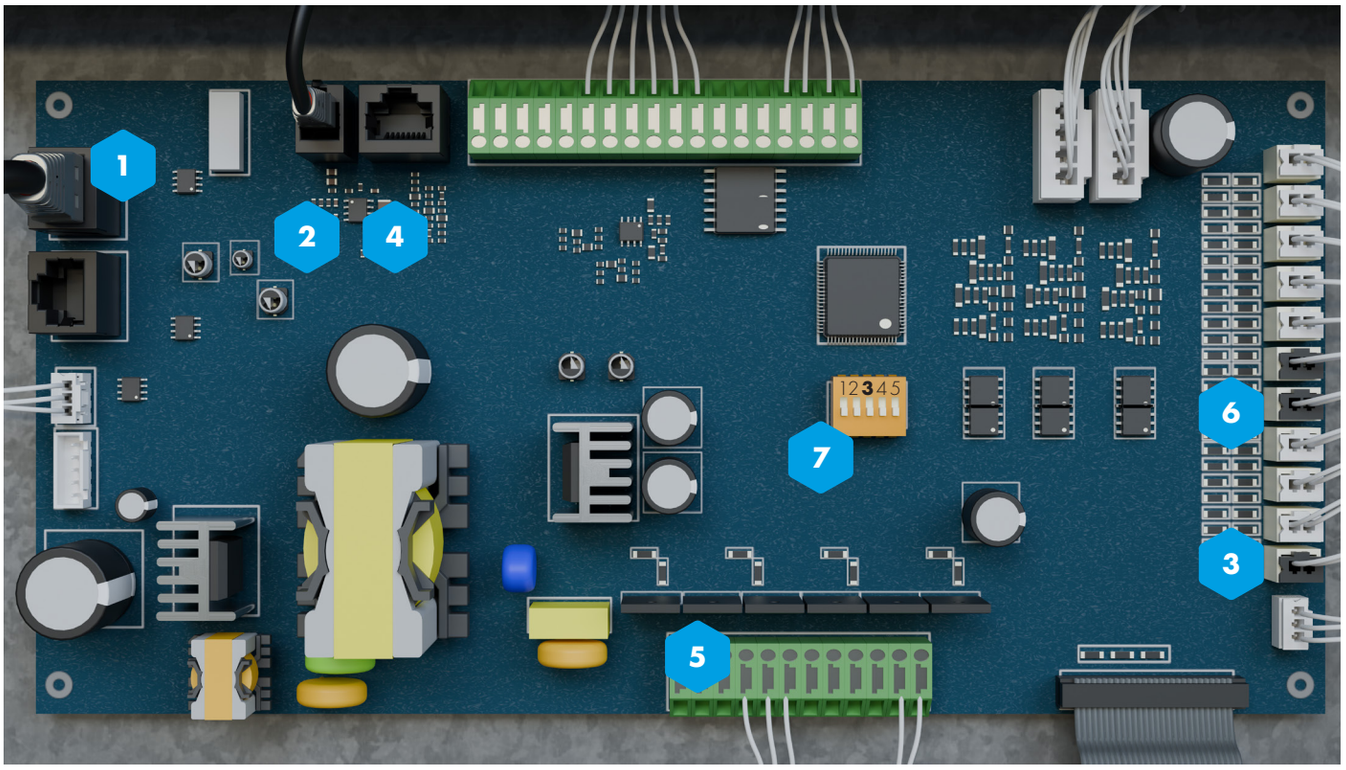


Frontpanel

Connection board

Connect the following cables to the corresponding connection ports:

1. Smart Remote Controller
2. RH Humidity & Light sensor - to be placed in the grow area. Detects optimal settings for humidity and night/day cycle.
3. Room temperature sensor - to be placed in the grow area. Do not position the sensor a direct light source.
4. Compressor start sensor
5. Solenoid Valve (magnetic valve)
6. Water leak sensor
7. Dipswitch 3



RevomaxII connection board

Testing & Discharge Water

When used in a closed loop setup with a cooler the system can be tested with dipswitch nr 3. When dipswitch 3 is turned on, the pump starts pumping and the valve opens without having the system fully booted up. Use this mode to discharge water, test for leaks or to vent the system from air. For more information check chapter 5.3.

Note: the system needs to be fully installed and connected for the test to work. Use dipswitch 3 for testing and discharge purposes only. When the system is in normal operation make sure to turn off dipswitch 3.

5.2 HUMIDITY & LIGHT SENSOR

Connect the humidity/light sensor to the RevomaxII on position 2 as described in chapter 6.1. Route the humidity/light sensor to the growing area and hang half-way between the plant canopy and the fixtures for optimal readings.



Humidity/Light Sensor

5.3 SELECT POWER CABLE

Applies to: Open Tap, Basic controlled closed Loop, Inverter controlled closed Loop

All Revomax II units must be connected to a 3-phase 400 volt power supply. Alternatively, the 6000, 10000 and 15000S model can also be powered by a standard 1-phase 230v domestic power supply.

Allways use at least the specified cable diameter for connecting the power supply to the RevomaxII. In the specification overview in chapter one you can find the specificiation for your model.

Ask assistance from a certified electronic engineer when connecting a 400v 3-phase system.

NOTE: always use a dedicated MCB and RCD type B for the Revomax II.
Do not combine with other devices on the same circuit.



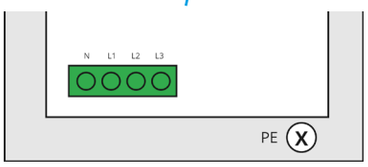
Frontpanel

Power cable

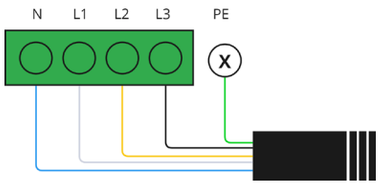
5.4 CONNECT POWER CABLE

Applies to: Open Tap, Basic controlled closed Loop, Inverter controlled closed Loop

Find the pass-trough on the bottom right of the from panel. Lead the open-end power cable through and lead it to the power connection board that is behind the frontpanel. Connect the power cable to the connection board using the schematic below. Do not forget to connect the PE ground connector.

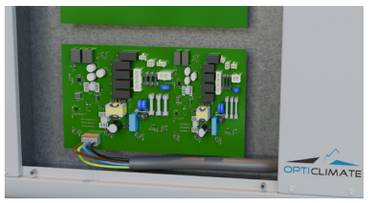


Power Connection Board

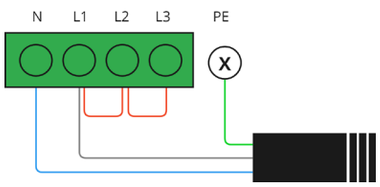


400v: all models

Connect the cable in following schematic. Make sure to use the grounding PE cable for safety. Local rules and code apply.



Power Connection Board



230v: 6000, 10000, 15000S model only

Connect the cable in following schematic. Make sure to use the grounding PE cable for safety. Local rules and code apply.



400v open-end powercable

5.5 SMART REMOTE CONTROLLER

Use the supplied controller cable (USB to UTP) to connect the Smart Remote Controller (USB connector) on port 1 (UTP connector) on the control board in the Revomax unit (chapter 4.1).
After powering up the Smart Remote Controller (use the supplied power adapter) and RevomaxII, the unit will first initialize, this can take a few minutes. All valves and sensors are automatically tested during startup. The remote controller cannot be operated during this initializing phase. You will see several screens pop-up and close again, this is normal.

Check the RevomaxII user manual for daily operation and configuration of the Smart Remote Controller.



Controller cable



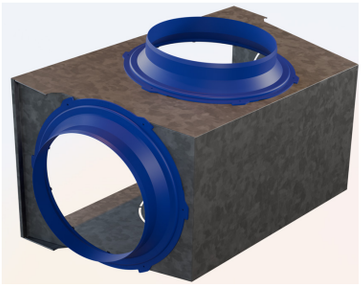
Connection to Power Supply

6. AIR DUCTING

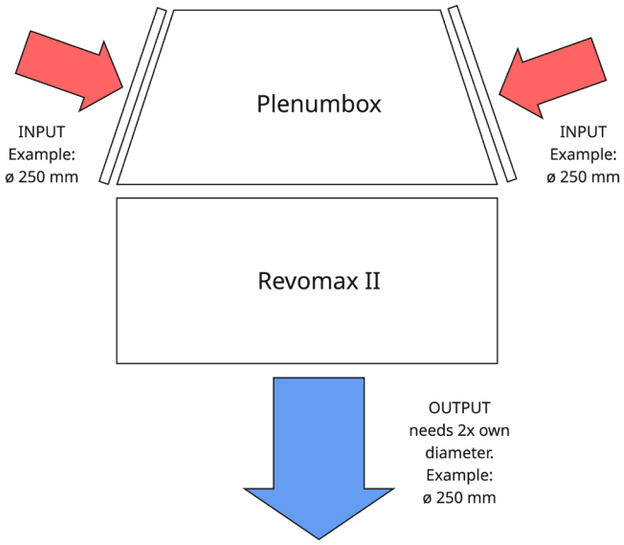
6.1 CONNECTING A PLENUMBOX

When the RevomaxII unit is placed outside of the growing area, you need a PlenumBox to connect the unit to an airhose system. It is important that the incoming air flow is at least twice the diameter of the output of the air distribution. This is important to ensure proper air pressure inside the unit.

For example: when the output diameter is 250 mm, the plenumbox needs a minimum of two 250mm air intake hoses for proper cooling power. Note, when calculating air intake capacity, the actual double air intake cannot be calculated by diameter only. Always calculatue the total surface of the hoses to actually find the correct diameters.



Plenum Box



6.2 AIR DUCTING

The RevomaxII needs sufficient return and supply air installation for good performance with an air hose to distribute the air evenly into the grow room. Our special designed Free Air model can operate without air hose. Inadequate measurements and/or installation of air intake and outlet can lead to freezing, overheating, malfunction and even permanent damage to your setup. In this document we'll guide you through the process of choosing the correct air hose and air intake.



Airhose on RevomaxII

Supply air pressure

RevomaxII and their air hoses units are designed to operate at a static pressure drop of around 70 pascal. For 3rd party air hoses we recommend to keep the pressure drop between 60 and 110 Pascal. If you do not have equipment to measure the pressure drop, consult a professional to make sure the system operates to specification. To reach this pressure drop, we'll use a calculation based on the air supply capacity in m3 per hour of the RevomaxII, devided by the dissipation capacity of the hose in m3 per meter per hour.

For detailed instructions refer to our air ducting guide on www.opticlimate.com/nl/knowledge-base

6.3 AIR HOSE TYPES

Hoses are available in different materials, lenghts and diameter sizes. There are two material variants:

1. LPDE foil
Economical option
2. Fabric - LVS
Prevents condensation, anti-bacterial and washable

7 CONNECTION KITS

Both the installation with and without watercooler require a basic installation package that is needed for installing the respective option. Without this package the system cannot be installed to a normal operating situation. All RevomaxII units come with the Smart Remote Controller.



Smart Remote Controller (included)

7.1 WITHOUT WATERCOOLER

For basic operation on a continuous tap water installation acquire all needed piping as recommended in chapter 4.2. The tap-water leak prevention kit is optional.

SKU 1-7811 'tapwater leak-prevention kit'

- R-7962 waterleakage sensor
- A1-41 Solenoid (magnetic) valve
- A1-101 connectorset



Solenoid (Magnetic) Valve

7.2 WITH WATERCOOLER, BASIC CONTROLLED

For a closed loop with basic control installation acquire all needed piping as recommended in chapter 4.2. **One of the connection kits is mandatory to create a working setup.**

SKU 1-85805 'Water cooler kit - Basic Control - 5 mtr'

- 2-587 Smartbox 6/3 EU
- 1-7850 Start Sensor
- 2-557 Water temperature sensor G1/4" 5 mtr
- 2-360 Communication cable 5 mtr

SKU 1-85810 'Water cooler kit - Basic Control - 10 mtr'

- 2-587 Smartbox 6/3 EU
- 1-7850 Start Sensor
- 2-556 Water temperature sensor G1/4" 10 mtr
- 2-361 Communication cable 10 mtr

7.3 WITH WATERCOOLER, INVERTER CONTROLLED

For a closed loop with advanced control installation acquire all needed piping as recommended in chapter 4.2. **One of the connection kits is mandatory to create a working setup.**



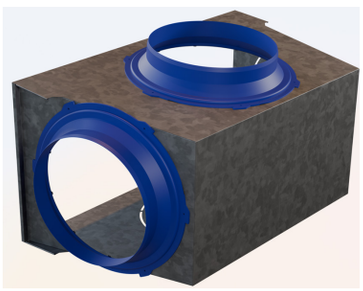
OptiClimate watercooler

SKU 1-85705 'Water cooler kit - Inverter Controlled - 5 mtr'

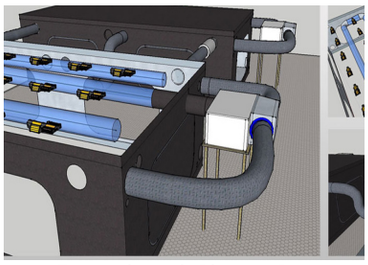
- 2-586 Smartbox 8/0 EU
- 1-7850 Start Sensor
- 2-557 Water temperature sensor G1/4" 5 mtr (2x)
- 2-559 Water pressure sensor G1/4" 5 mtr (2x)
- 1-861 Fan/Pump Inverter 1.5kW 1-phase
- 1-862 Fan/Pump Inverrter 1.5kW 3-phase
- 1-578 Blue Interlink Cable VFD 5 mtr (2x)
- 2-360 Communication cable 5 mtr

SKU 1-85710 'Water cooler kit - Inverter Controlled - 10 mtr'

- 2-586 Smartbox 8/0 EU
- 1-7850 Start Sensor
- 2-556 Water temperature sensor G1/4" 10 mtr (2x)
- 2-558 Water pressure sensor G1/4" 10 mtr (2x)
- 1-861 Fan/Pump Inverter 1.5kW 1-phase
- 1-862 Fan/Pump Inverrter 1.5kW 3-phase
- 1-579 Blue Interlink Cable VFD 10 mtr (2x)
- 2-361 Communication cable 10 mtr



Plenum Box



Example with Plenum Box

8 ACCESSOIRES COMPATIBILITY

The RevomaxII has endless possibilities and configurations. In the matrix below you can find what accessories are compatible with what setup. Make sure to order one of the available connection kits as described in chapter 9.

For specific needs ask your dealer or find us at airluxtechnologies.com.

OptiClimate RevomaxII - All accessories & compatibility

SKU	Peripheral	Config opt.1 Open Tap	Config opt. 2 Basic Contr.	Config opt. 3 Inverter Controlled
CABLES				
2-360	Revomax Communication cable 5 mtr		●	●
2-361	Revomax Comminication cable 10 mtr		●	●
2-362	Revomax Communication cable 20 mtr		●	●
1-578	Interlink Inverter Cable Blue VFD 5 mtr			●
1-579	Interlink Inverter Cable Blue VFD 10 mtr			●
1-580	Interlink Inverter Cable Blue VFD 20 mtr			●
2-363	Interlink Extension Cable Black VFD 5 mtr		●	●
2-364	Interlink Extension Cable Black VFD 10 mtr		●	●
2-396	Interlink Extension Cable Black VFD 20 mtr		●	●
WATER COOLER ACCESSORIES				
A 1.8171	Waterpump 32kw P5S-120/4 - No Inverter 230V-Phase1 (basic cntrol)		●	
A 1.87171	Waterpump 32kw P5S-120/4T - Inverter 400V-Phase3 (advanced control)			●
2-587	Smartbox 6/3 EU		●	
2-586	SmartBox 8/0			●
1-592	Repeaterbox 8		●	●
2-557	Pressure Sensor 0-10 bar G1/4" thread Smartport 5 mtr			●
2-558	Pressure Sensor 0-10 bar G1/4" thread Smartport 10 mtr			●
1-861	Fan/Pump Inverter VFD 1.5KW, 200V~240V (1 phase)			●
1-862	Fan/Pump Inverter VFD 1.5kW, 380-480V (3 phase)			
1-7851	Temperature sensor Aluminium Revomax 5mt	●	●	●
1-7852	Temperature sensor Aluminium Revomax 10mt	●	●	●
1-7853	Humidity (RH) sensor + Lightcel 5m Revomax	●	●	●
1-7804	Smart Remote Controller SILVER Revomax	●	●	●
1-7803	Smart Remote Controller cable 7 mtr Revomax	●	●	●
INSTALLATION PARTS				
Various	Dustfilters - Various sizes and models	●	●	●
Various	Airhose distribution hoses, different sizes, LPDE or Textile	●	●	●
Various	Insulator Springs for 6000, 10000 and 15000	●	●	●
Various	Plenumboxes, different sizes	●	●	●

Extension guide

When expanding your system outside of the common one RevomaxII on one water cooler you need extra accessoiries to get everything connected. For example, for every extra RevomxII to one water cooler, you need an extra start sensor and a communication cable. Another example: 3 RevomaxII systems to 2 water coolers need (on top of the connection kits) 2 repeaterboxes to expand control ports, 2 black interlink cables to connect the repeaterboxes to the Smartbox, an extra set of inverters and their respective blue interlink cables.

Contact your dealer or find us at airluxtechnologies.com when installing a system that is connected with more than one RevomaxII and/or water cooler.

9 TROUBLESHOOTING

Most common errors are easily resolved. For more advanced troubleshooting check our knowledgebase at

https://opticlimate.com/nl/knowledge-base/

As with all high-performing, high-tech systems the RevomaxII can sometimes run into issues and errors. The most common issues and their fixes are listed in this document. Note: dismissing errors on the Smart Remote Controller without fix can lead to permanent damage to your system.

CODE	Cause	Possible Fixes
ERRORCODE 6 ERR_AIRSPEED_SENSOR_TOO_LOW	Airspeed below expected possible airflow blockage or misplaced sensor	Check fans, clean/replace filters, verify sensor placement and wiring, make sure ducting diameter is sufficient.
ERRORCODE 11 ERR_COMM_0_LOST	Communication was lost to RevomaxII. Power was lost on RevomaxII unit. Loose connector or broken wire.	Check power supply, LED's on control board. Check wiring, Replace cable between Smart Remote Controller and RevomaxII
ERRORCODE 17 ERR_CONDENS_DRAINAGE_SWITCH	Condensation water overflow, clogged drain or flaot switch is stuck.	Clear drain, test/replace pump, check switch wiring/function, install P-trap
ERRORCODE 29 ERR_EVAPORATOR_TEMPERATURE_TOO_HIGH	Evaporator temperature too high, refridgerant charge too low.	Check/Add refrigerant to max level (by professional)
ERRORCODE 38 ERR_HIGH_PRESSURE_SWITCH_PROTECTION	Refridgerant pressure too high or not cooled by water flow	Check setting I19, check wiring, check water cooler performance
ERRORCODE 70 ERR_WATER_LEAKAGE	Waterleak detected, pipe or coil leak, drain overflow	Isolate and repair leak, pressure test, dry area, reset sensor
ERRORCODE 72 ERR_WATER_OUT_TEMPERATURE_TOO_HIGH	Water-out temperature too high, Insufficient flow, oversized load, wrong setting	Check setting I08, check wiring
ERRORCODE 91 ERR_INVERTER_LOST	Connection to inverter was lost. Loose connector, broken wire, inverter defect.	Check water cooler or tap water setup, check wiring and power, replace inverter
ERRORCODE 92 ERR_STRANGE_DEVIATION_EVAPORATOR_IN_AND_EVAPORATOR_OUT	Sensors connected wrong ports, wrong readings or defrosting unit.	Evaporator out sensor value must be higher than evaporator in sensor value
ERRORCODE 103 ERR_WATER_IN_AND_AIR_IN_TEMPERATURE_BELOW_SUB_ZERO	Water-in and air-in below freezing risk, Ambient conditions below 0 °C	Add antifreeze/heat trace, enable freeze protection
ERRORCODE 104 ERR_WATER_IN_TEMPERATURE_TOO_HIGH	Water-in temperature too high. Source water above 25 degrees for open tap, mixing valve fault, water cooler performace or water flow	Check water cooler or tap water. Lower source temp, check water flow and water cooler performance
ERRORCODE 109 ERR_AC_INPUT_VOLTAGE_LOW	Inverter AC input too low, Wrong supply current	Check powersupply with suplier public power grid
ERRORCODE 117 ERR_TRIPPLE_HIGH_PRESSURE_SWITCH_ALARM	Tripped three times in one hour, Persistent condenser/charge problem	Fix issue condenser/charge problem - reboot system

10 WARRANTY

The Revomax II series and accessories are designed and manufactured with maximum care and craftsmanship. Airlux Technologies warrants the delivered goods to be free of defects for the duration of the applicable warranty period under normal use and conditions after the original purchase date. When the product shows any defects within this period that is not due to improper use, Airlux Technologies will replace or repair the defect product with a suitable replacement with at least the same functionality and specifications. Warranty of the replaced products will remain under warranty for the remaining period from the original product and purchase date. For service, the owner ships the unit to the closest Airlux Technologies service location, to be determined by the service desk. Airlux Technologies will require the original receipt to determine the warranty eligibility.

Use of reactive substances and impact on warranty

Revomax units are designed for operation in controlled environments with clean air and without the introduction of chemically reactive gases or vapours. The introduction of external substances into the room or air stream may affect materials, heat exchangers and piping within the system.
The use of substances that can chemically react with copper or copper alloys may result in discoloration, accelerated corrosion, reduction of wall thickness and, ultimately, leakage of piping or heat exchangers. This includes, but is not limited to, sulphur-containing compounds (such as those produced by sulphur burners), unfiltered or impure CO_2 sources (such as bio CO_2), and other gases, vapours or aerosols containing sulphur, acidic or otherwise corrosive components.

Damage to components resulting from exposure to such substances falls outside the design specifications of the Revomax units and is considered improper use. Any resulting damage or failure is not covered by warranty. Responsibility for the introduction of substances into the environment, including CO_2 systems, combustion products, treatment agents or other additives, rests entirely with the user. In case of doubt regarding the suitability or compatibility of any substance or system in combination with a Revomax unit, your supplier must be consulted in advance. Failure to do so may result in voiding of the warranty.

Contact your dealer for warranty information or find us at airluxtechnologies.com

By Phone: +31 20 776 6006
By e-mail: support@airluxtechnologies.com

Direct link: https://www.opticlimate.com/nl/knowledge-base/

Scan the QR-code to go to our online
knowledge base for the latest manuals and information