

MASTERVEIL

The art of invisible doors

POWERSTREAM MODELS (CAT 12)

DSBLOCK (V5)

DSBLOCK (V5) & dry

DSBLOCK - Airlock (V5)

DSBLOCK - Airlock (V5) & dry



version 3.2 - CAT12

Imagine free logistic traffic between frontroom and your freezer without the typical snow, ice, fog and safety problems.

Powerstream is developed by Masterveil in partnership with innovation center Brussels & University Ghent. Meanwhile we are in the Version 5 compliant with both European & UL- market.

This patented system is definitely a statement in the market when it comes to highest efficiency & lowest energyconsumption – compared to what actual is available in the market.

Available in many executions, specially designed for different type of situations and areas with different levels of humidityload.

Modular and tailormade design. Low energy consumption and maximum efficiency, are the key-words describing the system the best.



- Save money by reducing losses of energy and having clear separation between different temperature zones.
- Absolute safest environment for your workers thanks to a clear view.
- Stable temperature and/or better comfort
- Patented isolation layer as buffer between
- Humidity and freezerdepartment for lowest energy consumption
- From design developed to integrate active dehumidification.
- Foreseen for optimal usage of heat recuperation
- Multiple solutions available depending available space
- Optimize your evaporators and temperature due to reduced defrostings

YOUR ADVANTAGES

- Stable temperature and safer environment
- Energy and money saving
- Designed for high logistic usage
- Futureproof while upgradable

CHARACTERISTICS



- Tailormade height
- 3-Phase unit
- Hybrid system available with LOWEST energy-consumption in the market
- Adaptable for your environment
- Available for big doors up till 5.20mH
- Different levels of solutions and extendable
- Specially designed for logistic environment with exchangeable small components to keep costs to the absolute minimum
- Solutions for mounting in freezer or in frontroom
- Depending on the solution, efficiency going up till 80% (proven by independent measurements)

ENERGY SAVING – SAFETY – CLEAR VIEW

STEERING

	DSB (V5)	DSB (V5) & dry	DSB (V5) Airlock	DSB (V5) Airlock & dry
IVPEC BASIC	X	X	X	X
IVPEC FULL	X	X	X	X

APPLICATION DOMAINS

COOL	DESIGN	FREEZERS	LOGISTICS & COMFORT	OUTSIDE	RETAIL
X		X		X	X

ESPECIALLY SUITABLE FOR

- Freezer Logistic & storage companies
- Production rooms
- Highbays

POWERSTREAM PRODUCTRANGE

DSBLOCK + HEATER
(Electrical)



DSBLOCK + DEHUMIDIFIER
(In freezer)

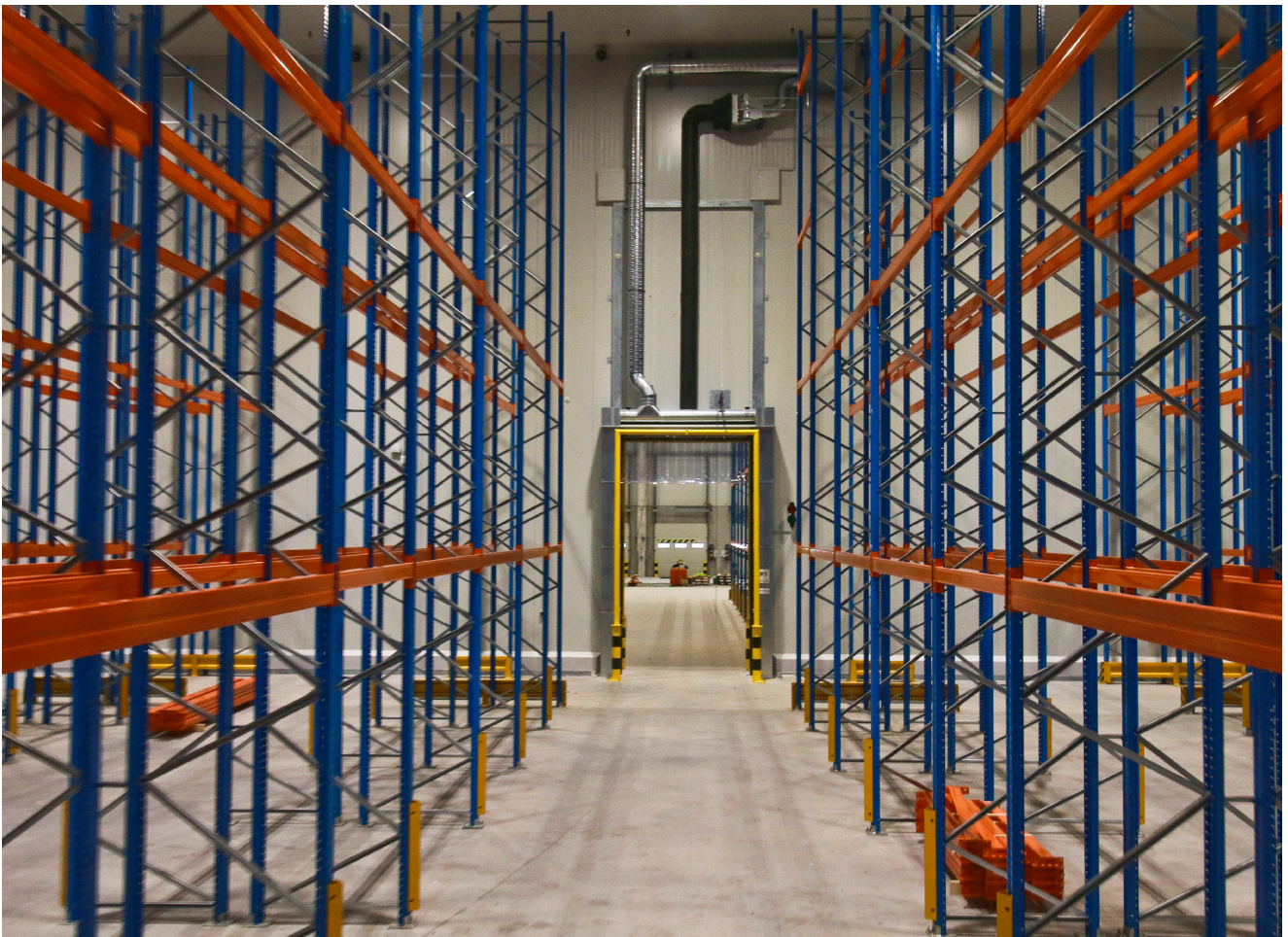


DSBLOCK + HEATER
(Glycol)

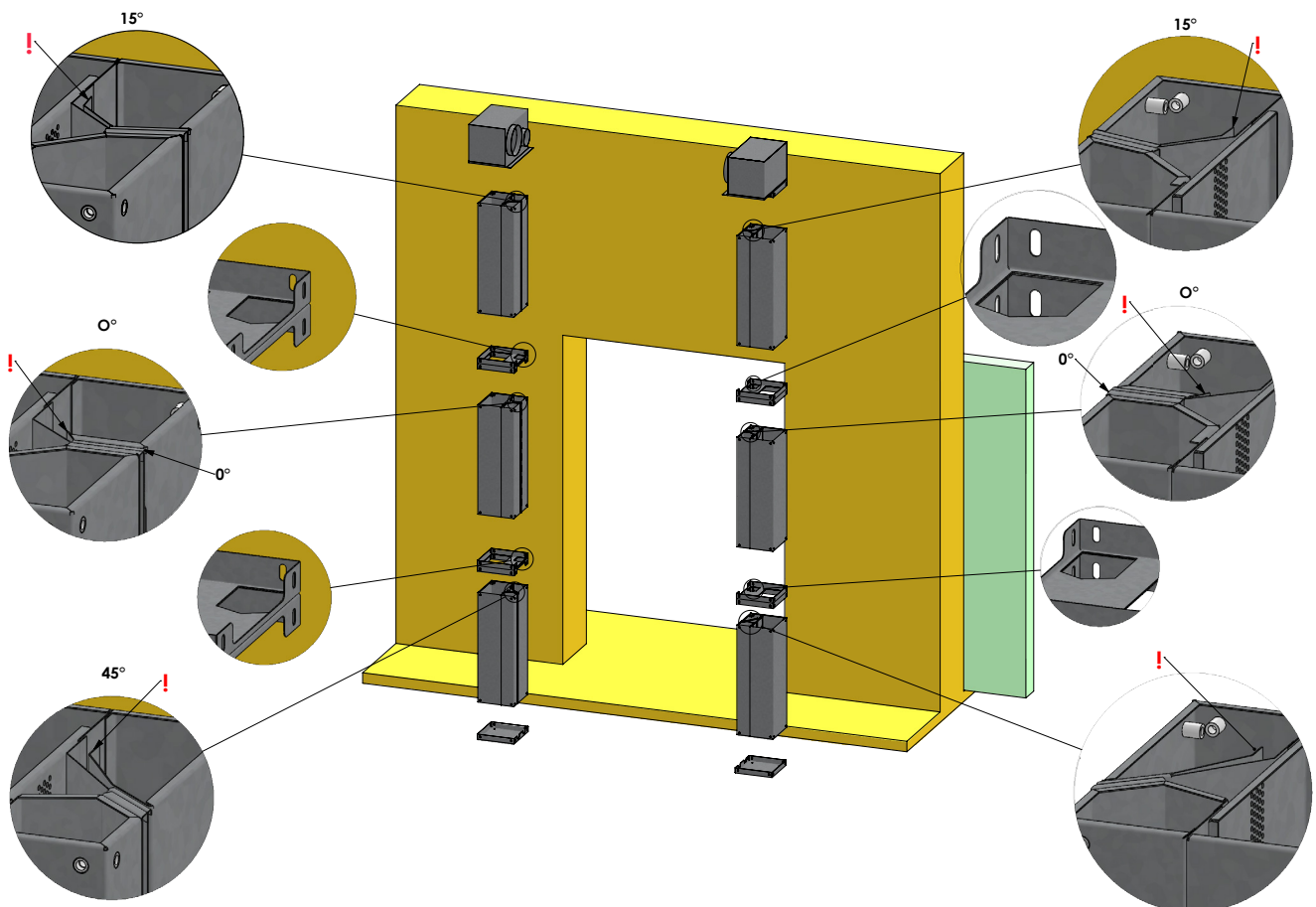
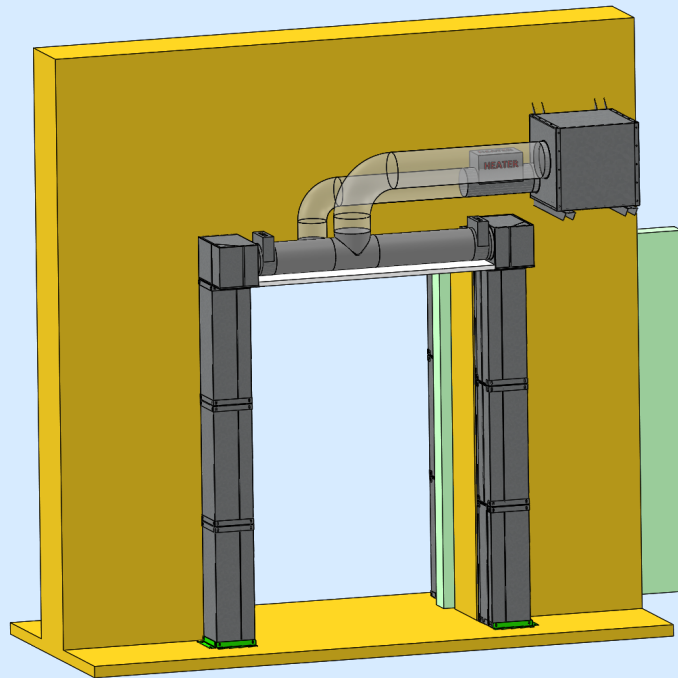


DSBLOCK AIRLOCK + DEHUMIDIFIER
(Frontroom)



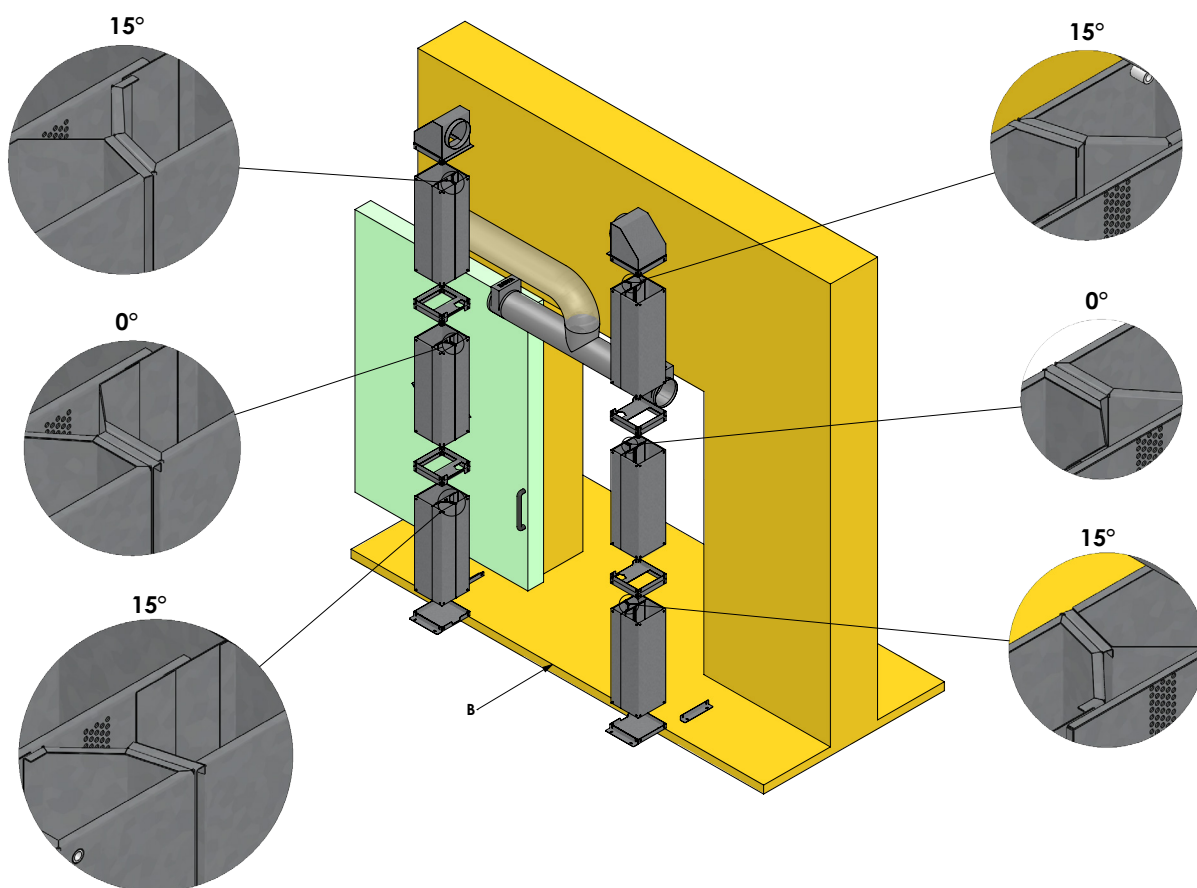
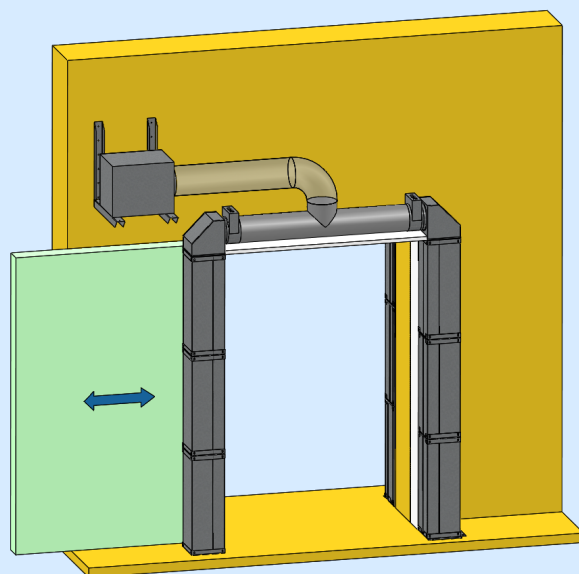


BASIC POWERSTREAM DSBLOCK: COLD SIDE



(Alternatives, extensions and/or options not showed on this image)

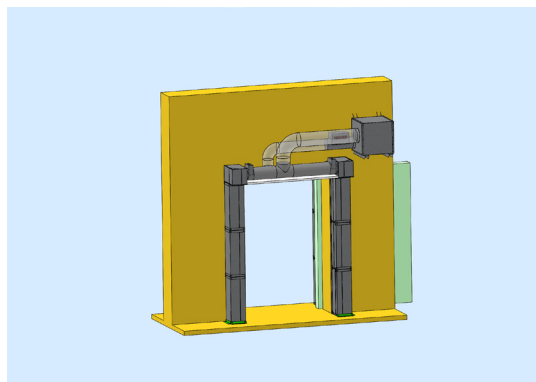
BASIC POWERSTREAM DSBLOCK AIRLOCK: WARM SIDE



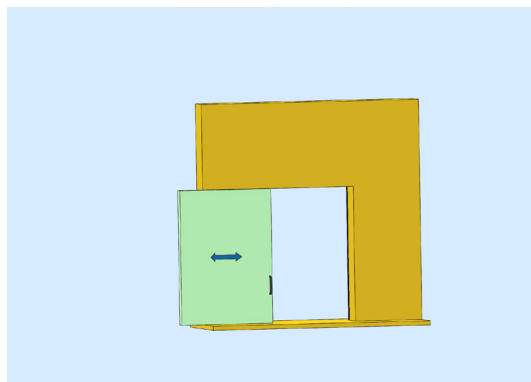
(Alternatives, extensions and/or options not showed on this image)

BASIC POWERSTREAM DSBLOCK: COLD SIDE

POWERSTREAM DSBLOCK + HEATER (Electrical)



Dsblock + electrical heatline, positioned in freezer



No protection on warm side

Even the basic Powerstream system is an exceptional device. Perfectly capable in reducing natural air exchange under these extreme conditions & having an active humidity control.

Optimize your freezer temperature by protecting your freezerdoor in an efficient way. External measurements have proven an exceptional separation degree and short ROI.

This combined with lowest consumption & lowest heatline!

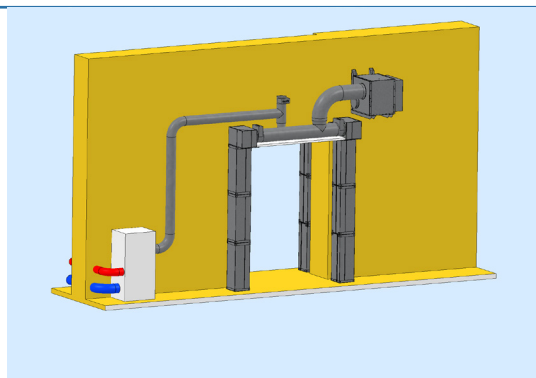
Dsblock+ electrical heatline: advised usage: (*)

Doors between large coldrooms and freezerdepartment with intensive logistic traffic.

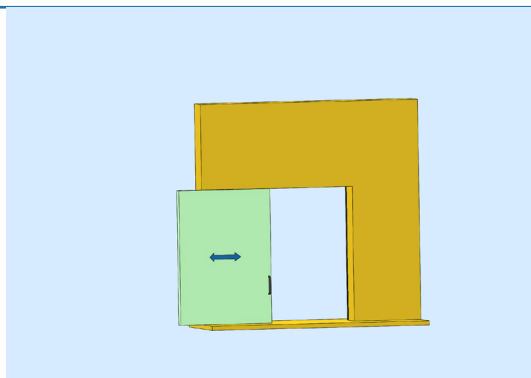
Single fan units for doors till 3.60mH. Double fan units for doors till 5.20mH.

Or usage of blindparts for doors between 3.6 and 5.20mH

POWERSTREAM DSBLOCK + DEHUMIDIFIER



Dsblock combi dehumidifier positioned in freezer



No protection on warm side

This Powerstream system is combining above mentioned efficiency with active dehumidification, seamless integrated to have the maximal effect and clear entrance for a wider range of applications. Not only perfectly capable in reducing natural airexchange under these extreme conditions but having an active humidity control that 'doubles' the resistance compared to the basic system. During closed time, your dehumidifier takes care of the resthumidity before it effects your evaporators & goods. This combined with lowest consumption & lowest heatline!

Dsblock+ electrical heatline: advised usage: (*)

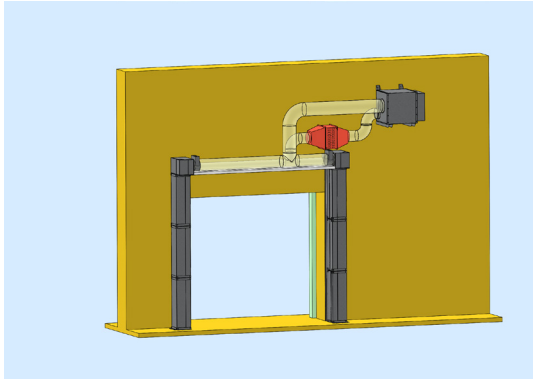
Doors between large (semi) conditioned frontrooms and freezerdepartment with intensive logistic traffic. Single fan units for doors till 3.60mH.

Double fan units for doors till 5.20mH. Or usage of blindparts for doors between 3.6 and 5.20mH.

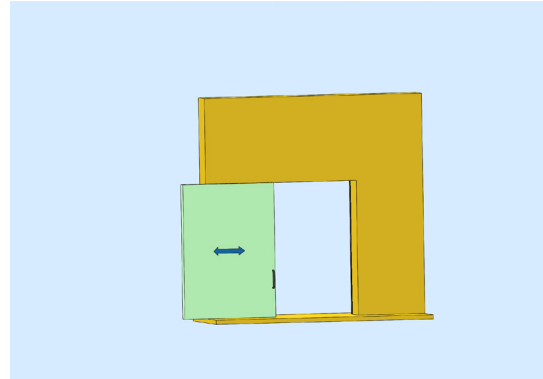
For smaller doors, 1 dehumidification unit can feed the insulation line of 2 powerstreamsdevices (next to eachother) Higher humidityload in frontroom.

(*) ask your Masterveil Certified Partner

POWERSTREAM DSBLOCK + HEATER (Glycol)



Dsblock + Glycol heatline, positioned in freezer



No protection on warm side

Basic Powerstream system, but this time as HYBRID system. Recuperating energy from the engine room and feeding in an optimal way the heatline instead of electrical energy.

Also here we can be proud to mention that we only use a small factor compared to other systems in the market; And that is how it should be done. It makes no sense to use high heatcapacity in an area that is supposed to have minus temperatures. The system can be adapted to any kind of available medium (glycol).

Dsblock+Glycol: advised usage: (*)

Doors between large coldrooms and freezerdepartment with intensive logistic traffic.

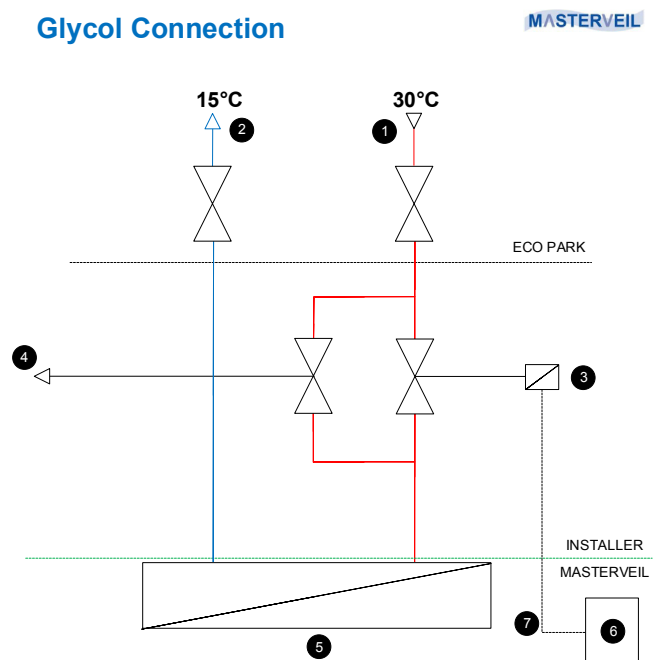
Single fan units for doors till 3.60mH.
Double fan units for doors till 5.20mH.
Or usage of blindparts for doors between 3.6 and 5.20mH

Example: > 3600mm – environment: -20 – 55% ethylene glycol

	ID	430X430 35/20 1300m³/u - 20 gr in	
Air	Capacity	12,7	kW
	Flow rate	1300	m³/h
	Temperature In	-20	°C
	Temperature Out	9,1	°C
	Pressure drop	43	Pa
	Velocity	1,8	m/s
Liquid	Water with 55% Ethylene Glycol		
	Flow rate	0,24	l/s
	Temperature in	35	°C
	Temperature out	20	°C
	Pressure drop	33	kPa
	Velocity	1	m/s
Dimensions	Width	430	mm
	Height	433	mm
	No of tube rows	4	
	Fin pitch	4.0	mm
	No. Of liquid passes	24	
	Connection number	DN 1X 25	
	Face area/Heat surface	0.19/10	m²
	Weight/ Volume	21 / 4	Kg/l
	Tube Material	Copper	
	Fin material	Aluminium	
Material	Header material	Copper	

Connection

Glycol Connection

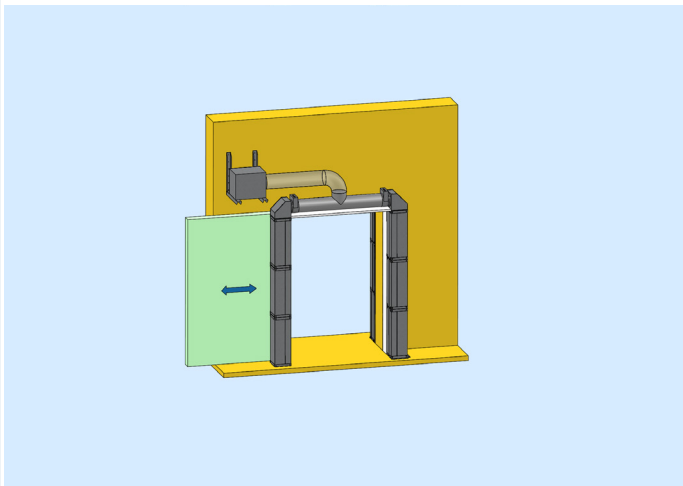


1/ flowtemp 30°in - 2/return 15°C

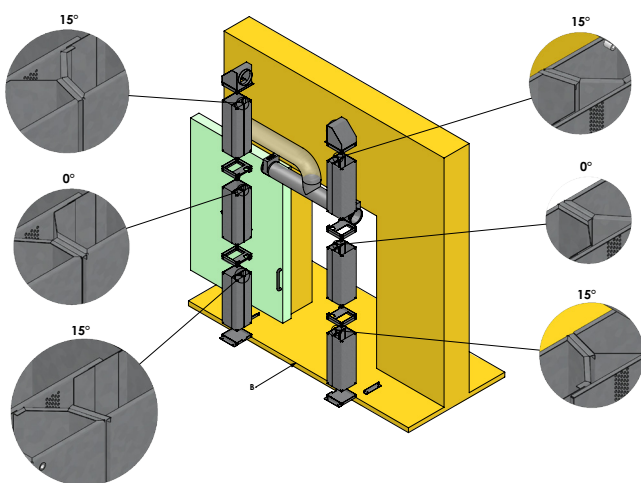
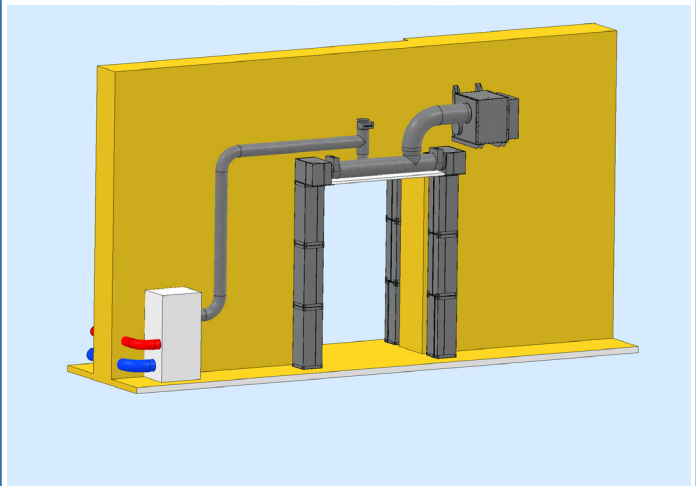
BASIC POWERSTREAM DS BLOCK: WARM SIDE

POWERSTREAM DSBLOCK + HEATER (Electrical)

DS BLOCK Single Line (in airlock concept)



DS BLOCK Double line (in airlock concept) with dehumidifier



By implementing an additional line on the warm side, together with the basic Powerstream Setup (whatever form) a real airlock is created.

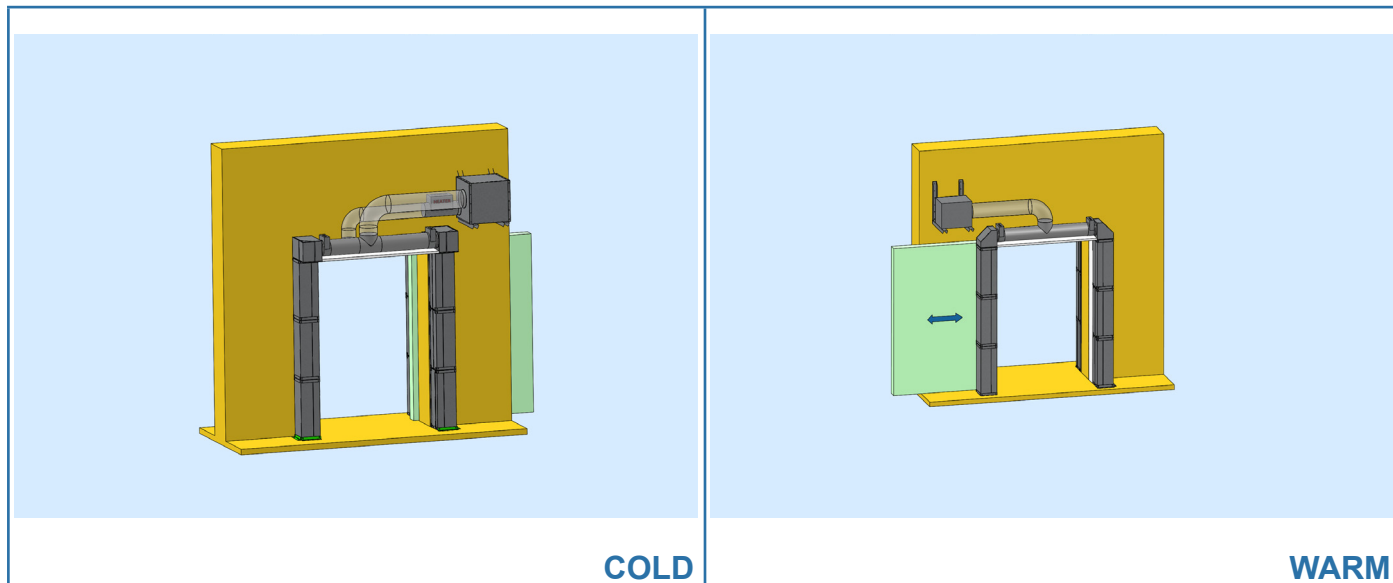
Simultaneously, the efficiency goes up with an additional 15%.

Depending the humidity load in the frontroom (like > 8gr/kg - +70%) we advise to use an additional dehumidification unit to be favorable for the dewpoint-issues (snow/fog/ice) inside the freezer.

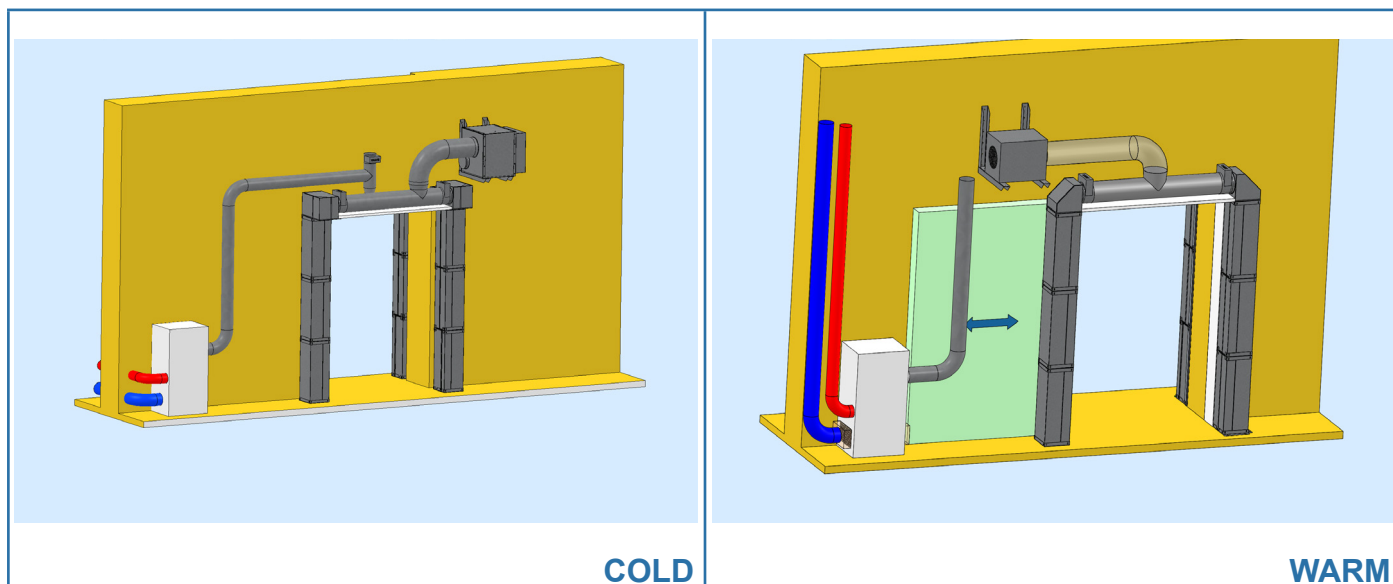
On next page: see the different solutions (cold / warm side)

EXAMPLE CONFIGURATIONS: COLDSIDE + WARMSIDE

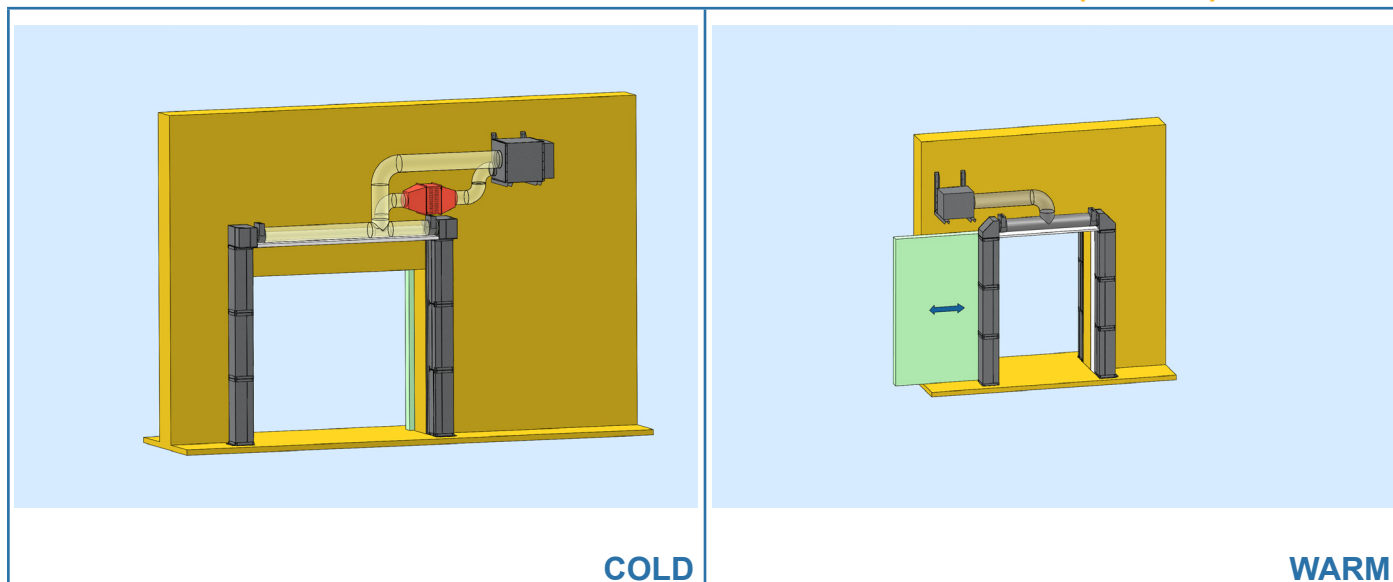
POWERSTREAM DSBLOCK + HEATER + AIRLOCK (S-LINE)



POWERSTREAM DSBLOCK + 2*DEHUMIDIFIER + AIRLOCK(S-LINE)

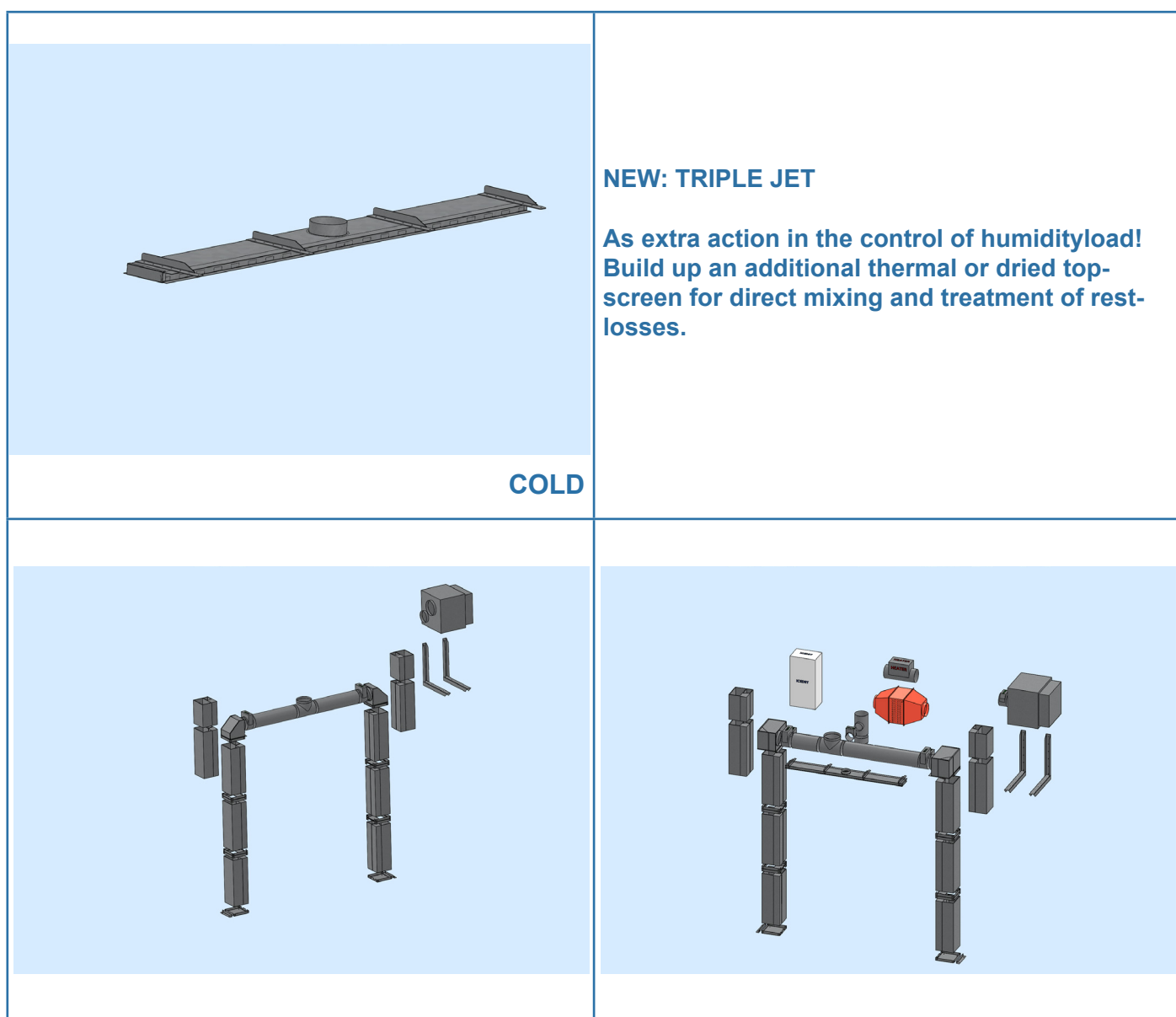
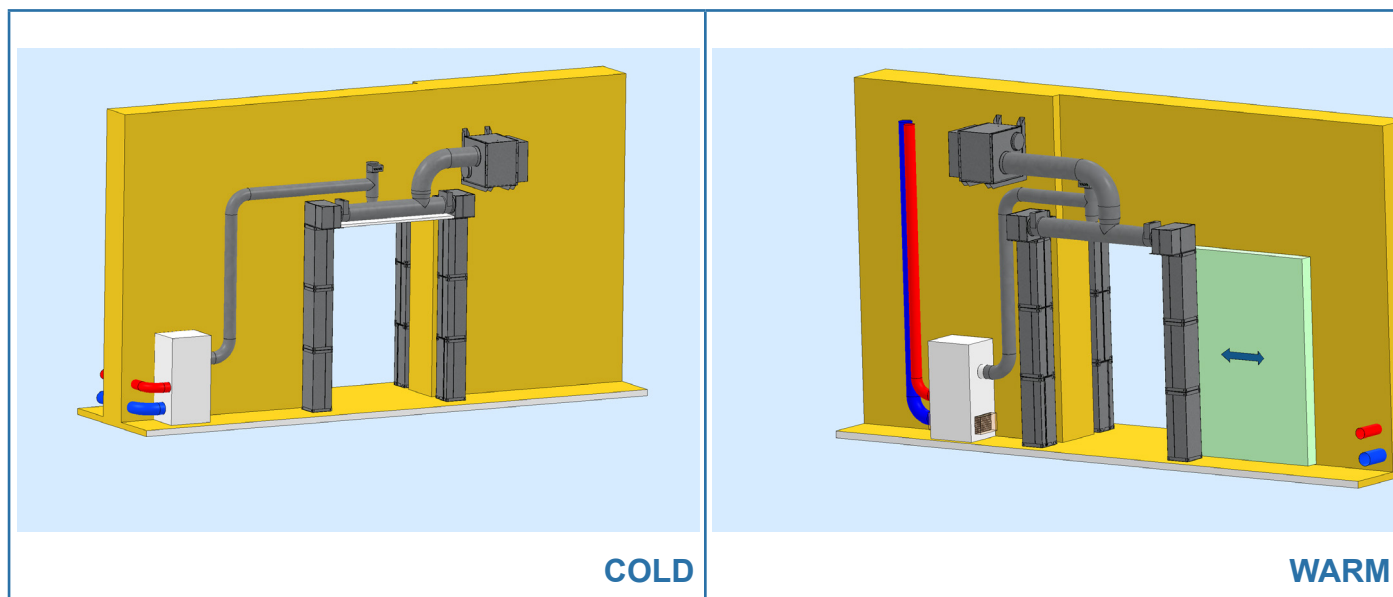


POWERSTREAM DSBLOCK+ GLYCOL+ AIRLOCK (S-LINE)



EXAMPLE CONFIGURATIONS: COLDSIDE + WARMSIDE (part2)

POWERSTREAM DSBLOCK + DEHUMIDIFIER +AIRLOCK (D-LINE)



AVAILABLE OPTIONS

		DSBLOCK	DSBLOCK & Dry	DSBLOCK Airlock	DSBLOCK Airlock Dry
Drum position	Horizontal	-	-	-	-
	Vertical	-	-	-	-
	Double standing	X	X	X	X
	Airlock	Opt	Opt	X	X
	Insulation layer	X	X	Opt	Opt
	Triple JET	Opt	Opt	Opt	Opt
	Industrial	X	X	X	X
	Round	-	-	-	-
	Drop	-	-	-	-
Fan	Fanbox	X	X	2	2
Dehumidifier	1350m³/h	-	-	Opt	Opt
	1400m³/h	Opt	X	Opt	X
Heater parts	Electrical	X	Opt	X	Opt
	Thyristor	Opt	Opt	Opt	Opt
	Glycol	Opt	-	Opt	Opt
Steering panel	Direct BMS	-	-	-	-
Steering panel	Blue-Tooth	X	X	X	X
IVPEC V5	0 – 10V	X	X	X	X
	Display	X	X	X	X
	Alarm	X	X	X	X
	Modbus	Opt	Opt	Opt	Opt
	Error message by SMS	Opt	Opt	Opt	Opt
	Data log	Opt	Opt	Opt	Opt
	Temperature	Opt	Opt	Opt	Opt
Door contact	Mechanical	X	X	X	X
	Magnet	Opt	Opt	Opt	Opt
	Photocell	Opt	Opt	Opt	Opt
	Potential free contact	Opt	Opt	Opt	Opt
Version	Galvanised	X	X	X	X
	Aluzinc	Opt	Opt	Opt	Opt
	Aluminium	Opt	Opt	Opt	Opt
	Ral painted	Opt	Opt	Opt	Opt
Stainless	Drum	Opt	Opt	Opt	Opt
	Fanbox	Opt	Opt	Opt	Opt

TECHNICAL DATA

	Cold side	Cold side High doors	Warm side	Warm side High doors
	FAN GR40 Ref184245	2*	FAN GR40 Ref116173	2*
Voltage V	400		400	
kW	1.9		1.9	
Ampere	3.15		3.15	
Hz	50		50	
Volume m3/h	5600		5600	
Rotation	2700		2700	
Environment-temp	0°C / -30°C		40°C / 0°C	
Motorprotect	Intern		Intern	
IP	54		54	
Pressure Pa	1322		1322	
Sound	78		78	
Weight kg	34		34	

Technical data for appropriate dehumidification connection: **on demand**
 (*) ask your Masterveil Certified Partner

MOUNTING INFO

- Depending the humidity load, choose your solution. In case of doubt Let us advise you!
- Depending on efficiency grade, choose between single line, airlock or combined version ... Let us advice you!
- Install the Powerstream solution as close as possible to the door.
- Close eventual gaps between PWS and wall/doorconstruction to avoid uncontrolled air/humidityload to your application
- Mount tight ceiling so warm air can't come in via the upper part.
- Close gaps with moving parts (e.g. doors) with brushes
- Install the fanbox away from the potential influence from the door
- Make sure that the fanbox has a free intake.
- When distance heatline/outblowdrum > 1.5m, use insulation
- Make sure that intake grid is accessible for cleaning
- Make sure that the drums have a free outblow. Make sure they are not interrupted by objects.
- Directly after installation, make sure you protect your equipment by correct driving protections (that allow free outblow)
- In case of connection with active dehumidification in the freezer, make sure that all precautions are taken for:
 - o Alarm signalisation and continuous operation mode
 - o Free access to the dehumidification unit for yearly maintenance
 - o Safe environment for doing maintenance of the equipment
 - o Take precautions when active dehumidification is disconnected (block the regeneration manually)
 - o Warning: dehumidifier in the freezer must always be in function
- For energy reasons, keep your actual freezerdoor as small as possible and work by preference with preconditioned frontroom.
- Have your system started/finetuned by a Masterveil Certified Partner
- Keep open door time as short as possible
- Follow the instructions in the manual when connecting to Glycol feeding, foresee parts that allow to feed in a precise way our heatline.
- Make sure that glycol line has a priority feeding and that the in/out values can be consulted + traced
- In case of too low glycol regime, add eventual additional small electrical heatline
- Consider distance between air curtain and people, restlosses can always influence people and/or frontroomconditions.
- Keep in mind that waterdrops on ceiling, wet floors will provoke extra load on your door. It is better to do additional dehumidification actions in the frontroom or make a restricted tunnel
- Keep in mind that air curtains are not a 100% solution.
- Check capacity to compensate remaining losses.
- Fluent access to equipment.
- All metal parts must be grounded.
- Apply the Safety stickers to the Powerstream.

ARRANGEMENT & MOUNTING

! INSTALLATION CAN ONLY BE EXECUTED BY CERTIFIED & SKILLED TECHNICIANS !

Mount the fan horizontally or vertically in a weather-protected place. Make sure that the fan is protected against vibrations and shocks. Supply open inlet and discharge openings with guards according to valid regulations. Also make sure the drive motor is sufficiently vented. The permitted maximum temperature of the surrounding is 40°C

The fan unit also has an extracted thermo contact conductor. They must be connected to the electrical circuit for engine protection or, if using the rotation speed regulator, through the relay socket. The thermo contacts disconnect the electrical connection for safety reasons if the engine coil temperature gets too high.

To restore the thermo contacts: disconnect the electrical connection, wait until the motor has cooled down, and then restore the electrical connection.

Your special attention for our special designed WARM/COLD type of fans

The fan is designed for continuous use. Its rotation speed can be regulated with external equipment by changing the current supply. It is not designed for operation with flammable, hazardous or explosive gases, polishing dust, flour etc. Intake air can NOT contain aggressive (cleaning) products.

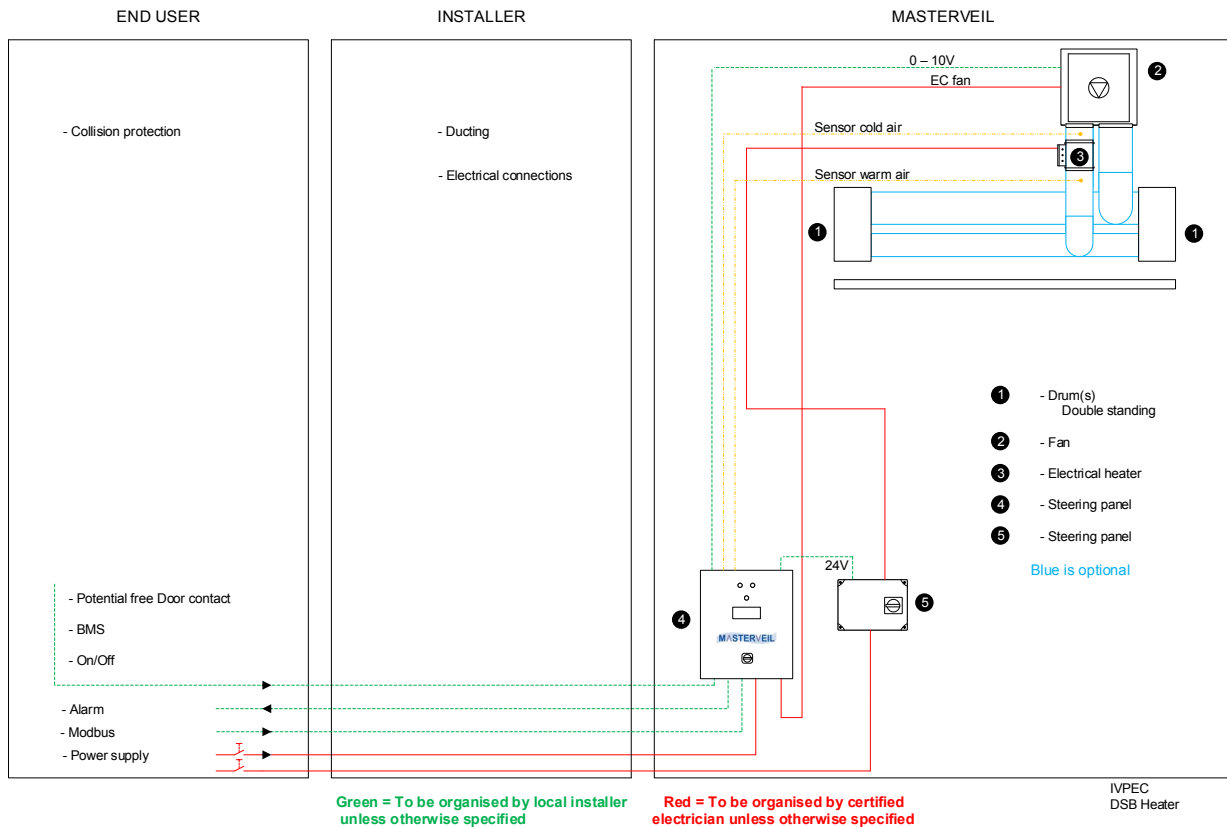
We decline all responsibility for any errors and for the accuracy of the information provided.

We reserve the right to modify or substitute products, descriptions, accessories without any notice.

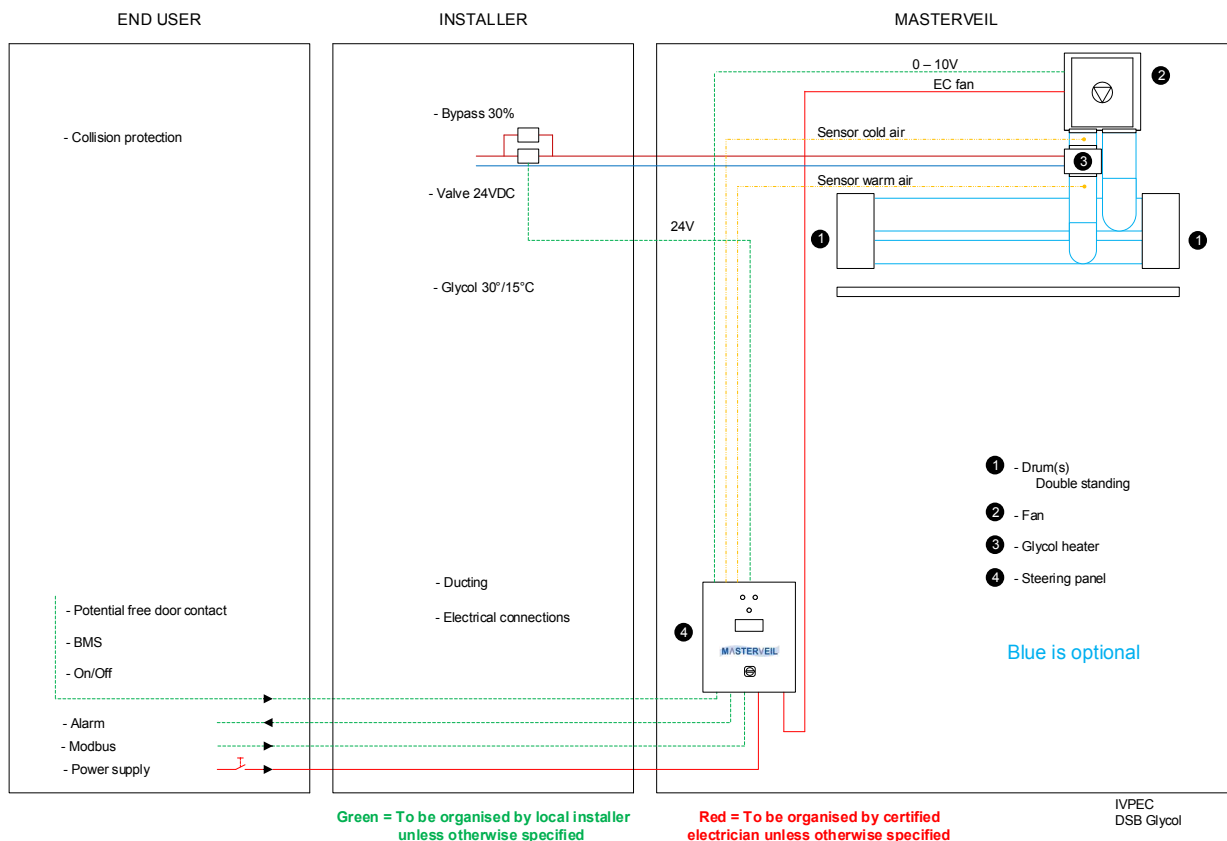
Minor adaptations can occur depending on regulations, versions,...

! IN CASE OF QUESTIONS CONTACT THE DEALER OR A CERTIFIED PARTNER !

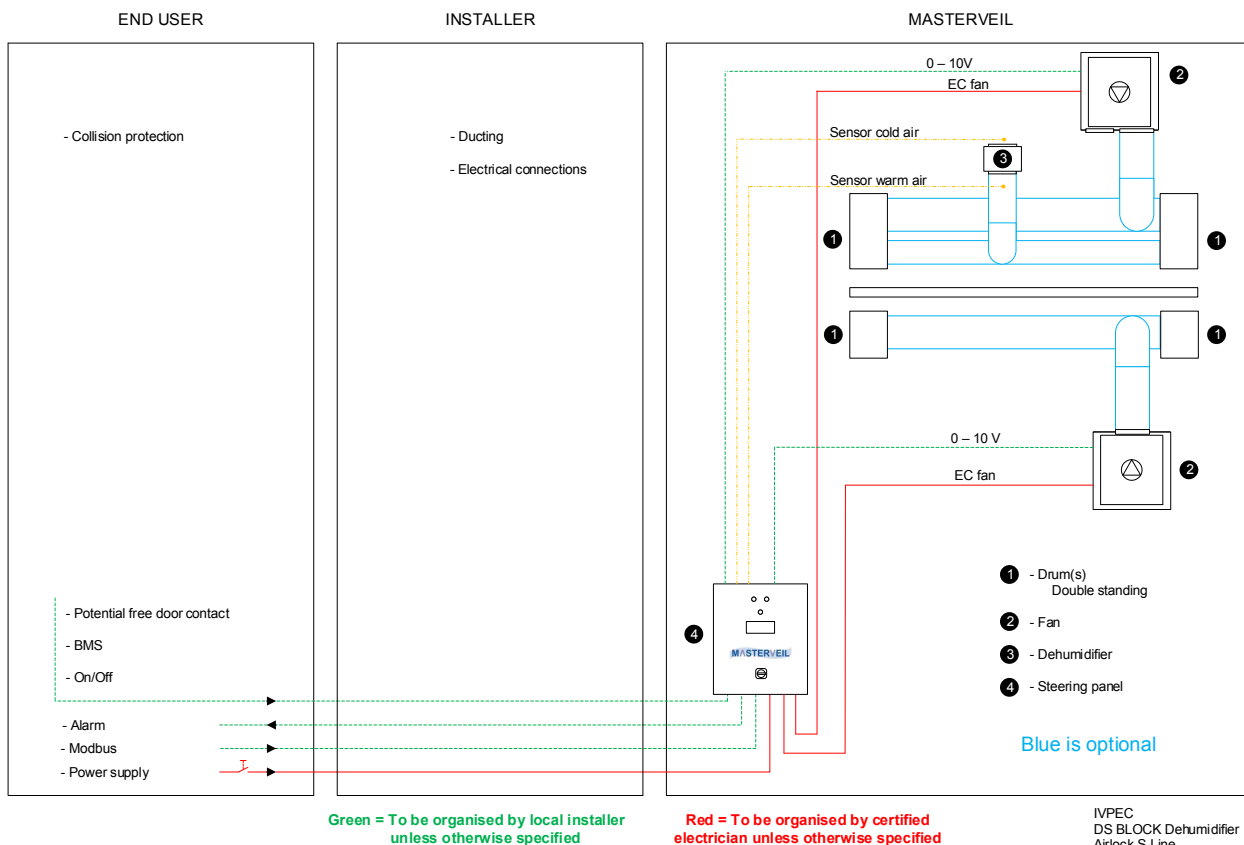
POWERSTREAM DSBV5 HEATER



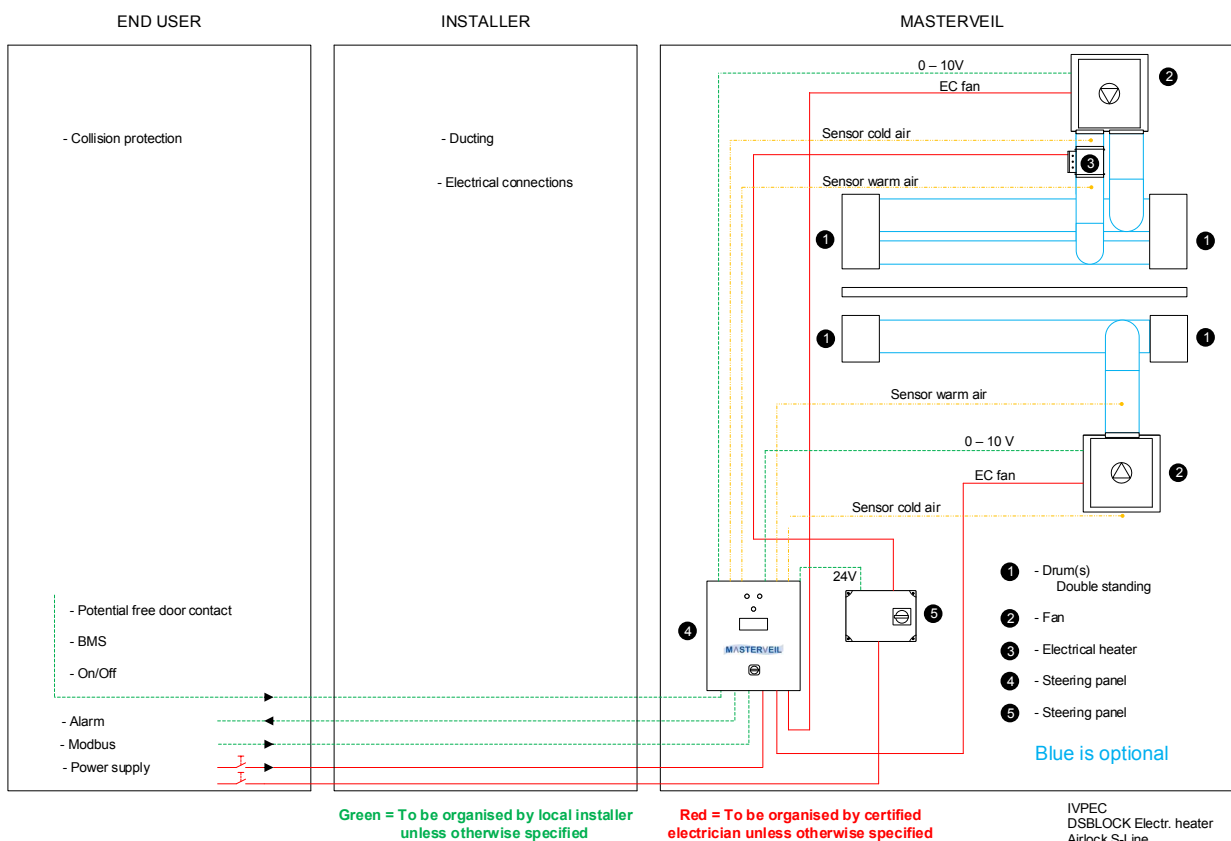
POWERSTREAM IVPEC DSBV5 GLYCOL



POWERSTREAM DSBV5 DEHUMIDIFIER

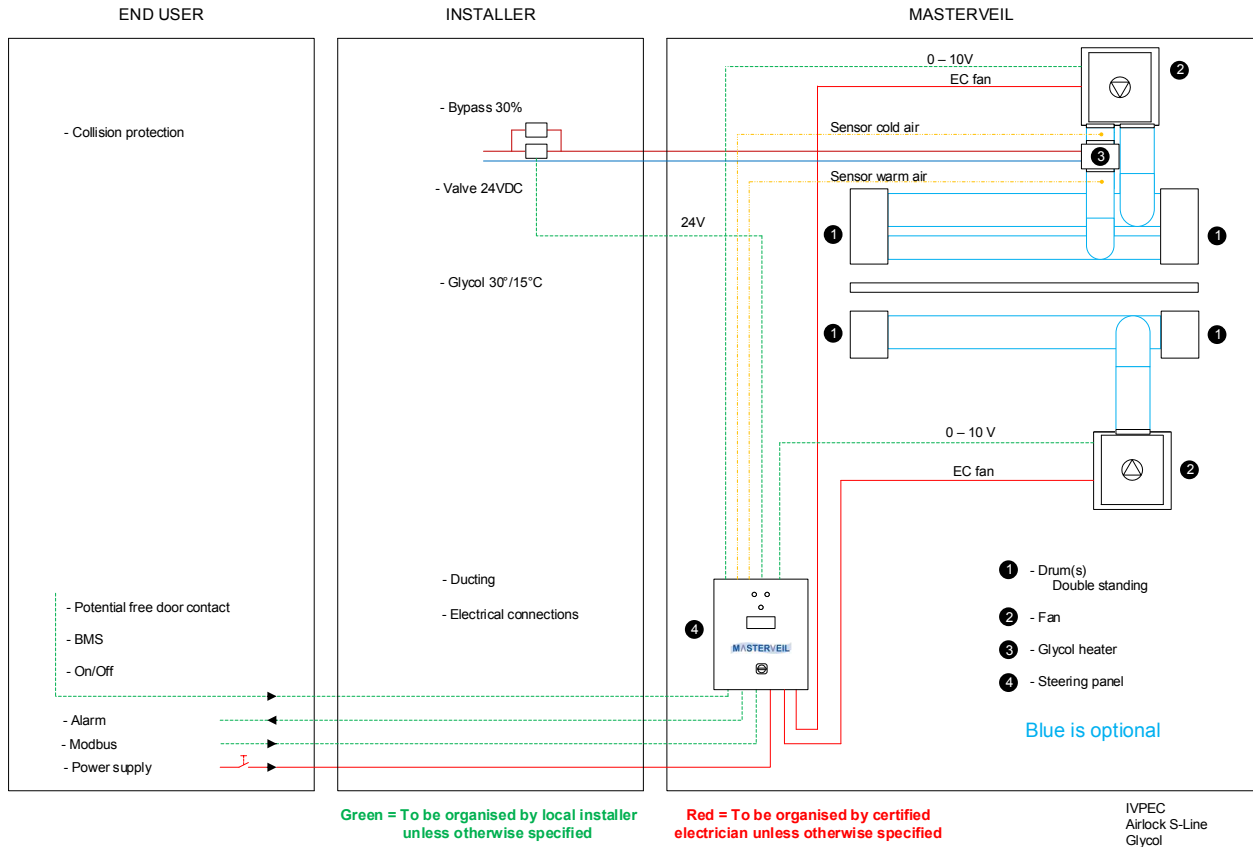


POWERSTREAM DSBV5 AIRLOCK HEATER

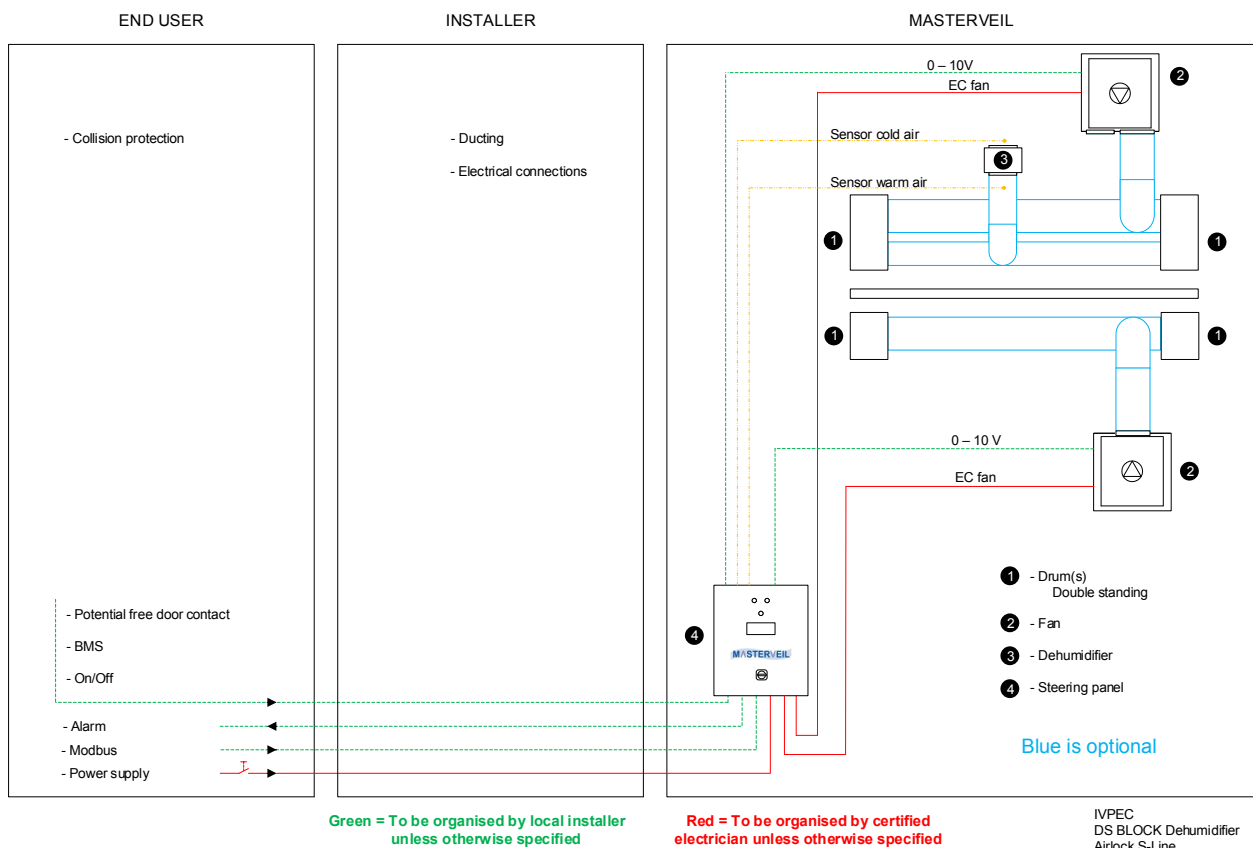


GRAPHICAL PRESENTATIONS

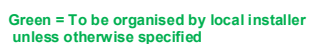
POWERSTREAM DSBV5 AIRLOCK GLYCOL



POWERSTREAM DSBV5 AIRLOCK 1 DEHUMIDIFIER

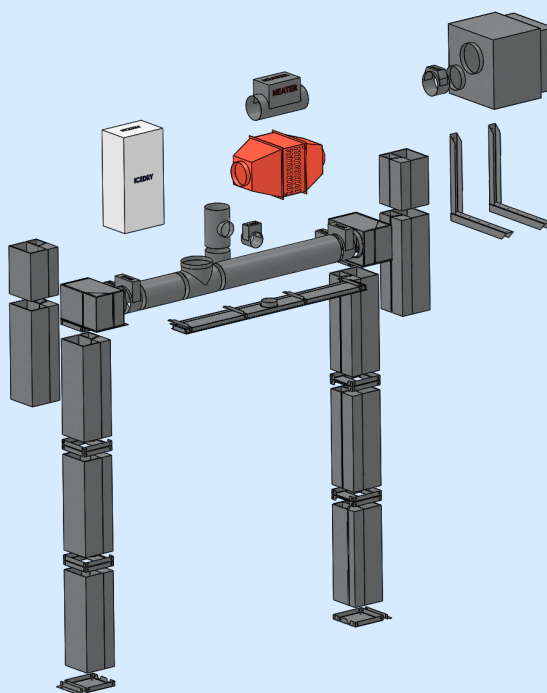


POWERSTREAM DSBV5 AIRLOCK 2 DEHUMIDIFIERS



Red = To be organised by certified electrician unless otherwise specified

IVPEC
DSB Dehumidifier
Airlock Dehumidifier D-line



MASTERVEIL

The art of invisible doors



Invisible doors



Freezer solutions



Humidification



Dehumidification

MASTERVEIL CERTIFIED PARTNER

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