

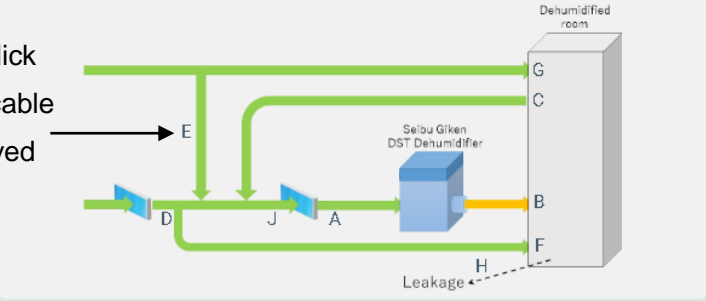
Manual of Room calculation

This program is supported by browser of Microsoft Edge and Google Chrome.

On this page you can determine moisture load and what dry air condition the dehumidifier has to perform.

1. Input Project Name and Europe SI (default) or US IP units at "Unit select".
2. Start by filling in "Desired room climate". Boxes with squares can be filled in.
3. Then continue by the tab or click "Next" button to fill in "Outdoor design climate" and "Surrounding room climate".

When you Click symbol, applicable tab is displayed



Project Name: Case 1

Date: 2019/11/14

Unit Select: ☒ SI ☐ IP

Tab. 10 pages.

Dehumidifying data | **Desired room climate** | Outdoor design

PREVIOUS NEXT

(1/10)

MEASUREMENTS	UNITS OF MEASUREMENT	DIMENSIONING
Temperature	°C	20.0
Relative humidity	%RH	50.0
Height above sea level	m	-6.2
Atmospheric pressure	mbar	1014.0
Moisture content	g/kg	7.27

Dehumidified room has one or more walls towards outdoor

Category: Recusarb 1

Unit: DR-D10 B, 0.4 kg/h at 20°C/60%RH

Total moisture load: 0.21 kg/h

Textbox

4. After “Surrounding room climate” the page that describes the room comes, called “Ventilation, including infiltration”, looks like this:

← Rooms climate
Ventilation, including infiltration
Personnel In 1 →

PREVIOUS
NEXT

(4/10)

MEASUREMENTS	UNITS OF MEASUREMENT	DIMENSIONING
Room length	m	<input style="width: 50px;" type="text" value="5"/>
Room width	m	<input style="width: 50px;" type="text" value="5"/>
Room height	m	<input style="width: 50px;" type="text" value="3"/>
Room volume	m ³	75
Tightness of building		<input style="width: 100px;" type="text" value="3 concrete building"/>
Surroundings		<input style="width: 100px;" type="text" value="2- Building around but on a long"/>
Door without air lock vestibule - height	m	<input style="width: 50px;" type="text" value="2"/>
Door without air lock vestibule - width	m	<input style="width: 50px;" type="text" value="1"/>
Air lock vestibule, between the two doors - height	m	<input style="width: 50px;" type="text" value="0"/>
Air lock vestibule, between the two doors - width	m	<input style="width: 50px;" type="text" value="0"/>
Air lock vestibule, between the two doors - length	m	<input style="width: 50px;" type="text" value="0"/>

If more than one door/air lock put in total area/volume.

If there is an air-lock instead of a normal door put these dimensions to zero.

If you have more than one door, put the total area here.

Door to adjacent room (surrounding room climate)		
Wind speed, do not use below 6 m/s <i>Dimensioning wind speed is normally around 8 m/s</i>	m/s	<input type="text" value="8"/>
Door without air lock, opened per hour	minutes	<input type="text" value="0"/>
Air lock vestibule, passages per hour	times	<input type="text" value="0"/>
Infiltration, room tightness	m ³ /h	28.36
Infiltration, door and/or air lock	m ³ /h	8.64
Open holes <i>Deduct covers like plastic curtains from the total hole area.</i>	m ²	<input type="text" value="0"/>
Needed airflow through the open hole	m ³ /h	0
Mechanical ventilation <i>Ventilation for people should be filled in here if not covered by above leakages.</i>	m ³ /h	<input type="text" value="0"/>
Total ventilation from outdoor	m ³ /h	28.36
Total ventilation from surrounding rooms	m ³ /h	8.64
Percentage leakage	%	49.34
Total load from ventilation	kg/h	0.40

Ventilation has a very high impact on the moisture load, important that this is correct.

5. After filling in above room information click Next to go through remaining boxes and fill in applicable data in the same way.
6. When coming to "Total moisture load" a first selection is done only based on the moisture load.
7. At "Dehumidifying data" a suggested ratio between return air and fresh air is chosen by the program based on the leakage rate of the room. This can be changed to suite the installation type better, Here also pre-cooling can be set to get down in dehumidification rate.
8. Select category, Recusorb1 or Consorb. Expected unit is automatically selected.
9. Click "Start Calculation" button.
10. Check the Calculation Results of Dry air from the dehumidifier(s) is "OK" or "too small"

If you see “too small”, please select bigger unit, and click “Start Calculation” again until “OK”.

Unit

Total moisture load 1.64 kg/h

Needed moisture content in the dry air from the dehumidifier(s), B 3.89 g/kg

Number of unit pcs

Start Calculation 3. “Start Calculation” button

Calculation Results	
Total dry air flow	400 m ³ /h
Dry air from the defumidifier(s)	3.99 g/kg (too small)
Dry air temperature	38.0 °C
Capacity	1.56 kg/h

too small

Unit Select bigger unit, and click “Start Calculation” button until “OK”.

Total moisture load 1.64 kg/h

Needed moisture content in the dry air from the dehumidifier(s), B 4.51 g/kg

Number of unit pcs

Start Calculation

Calculation Results	
Total dry air flow	490 m ³ /h
Dry air from the defumidifier(s)	3.75 g/kg (OK)
Dry air temperature	34.0 °C
Capacity	2.05 kg/h

11. Check each values and graph of pull-down time for the moisture content in room.

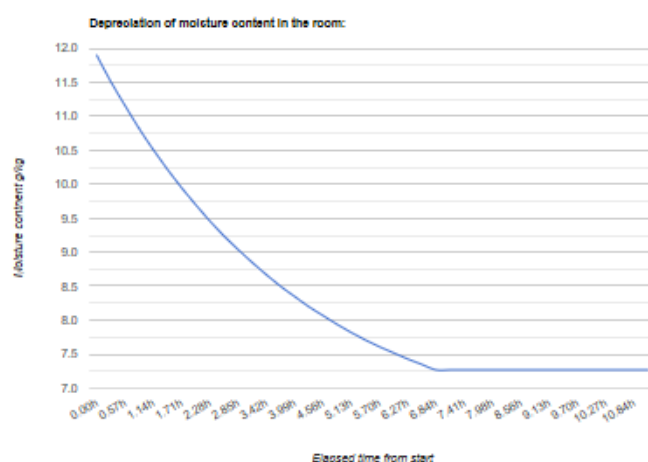
Tot. process airflow into dehumidifier(s)	[A]	490 m3/h
Return air direct to dehumidifier(s)	[C]	485.68 m3/h
Pre-cooled air	[D]	0 m3/h
Pre-cooling ambient air to	[D]	12°C
Corresponding to		8.74 g/kg
Ambient air direct to the dehumidifier(s)	[E]	4.32 m3/h
Point J before pre-cooler (Final condition)		20.04°C
Point J before pre-cooler (Final condition)		7.31 g/kg
Pre-cooling before dshumidifier(s)	[J to A]	20.04°C
Temperature (Final condition)	[A]	20.04°C
Moisture content (Final condition)	[A]	7.31 g/kg
Air direct from pre-cooling to the room		0 m3/h
Air direct from ambient to the room		0 m3/h
Leakage H		4.32 m3/h

Pulldown time

Chosen Unit: DC31 T16

Quantity: 1 pcs

	Starting	Final
Temperature (°C)	25	20
Relative humidity (%RH)	60	50
Atmospheric pressure (mbar)	1014	1014
Corresponding to (g/kg)	11.90	7.27
Capacity (kg/h)	2.42	2.05



12. SAVE or Print out the result. When you click “SAVE” button, the result exports to csv file and database table.

13. If you want to see the previous result, click the project from database table.

Project name	Date
Case 1	24/10/2019
Case 2	14/11/2019