

1. General

1.1. Before you begin

The ProSelect web program is a software program for choosing suitable waterborne units for a room. The program also helps the user to with minimum distance between units to avoid draft in the room. The program takes into account the temperature differences between supply air, induced air and room air. The program does not take into account air movement, convection, caused by surfaces and bodies with different temperatures than the surrounding air. To get a reliable picture of all air movements in a very complex room can a CFD simulation or a fullscale test be carried out.

Swegon AB has made every effort to ensure the accuracy and reliability of the device data and calculation models used in the program. The program does not include any kind of guarantee. Any risk arising out of the use or performance of the software and documentation remains with the user. Swegon AB can accept no responsibility for the operating reliability in the computer environment where the installation takes place.

Swegon AB reserves the right to upgrade the program and all relevant documentation without any further notice. The web version of ProSelect web is always the most accurate version of the program.

The ProSelect web program is the property of Swegon AB and it is protected by European copyright laws and international agreements. The program must be treated in the same way as any corresponding material protected by copyright laws.

If you have any questions concerning this program please contact:

Swegon AB

1.2. Software and hardware requirements

Web application

Supported browsers

- Microsoft Internet Explorer 5.5
- Microsoft Internet Explorer 6.x

Hardware requirements (minimum)

- Screen resolution: 800x600
- Colours: 256

Internet connection

- Modem connection, minimum 56K required. ADSL recommended
- JavaScript and Images must be enabled

Windows application

Operating systems

- Windows 98
- Windows NT 4.x
- Windows 2000
- Windows ME
- Windows XP
- Windows 7

Hardware requirements (minimum)

- CPU: 166 MHz Pentium
- Memory: 32 MB
- Screen resolution: 800x600
- Colours: 256

A program for opening PDF files (e.g. Adobe Acrobat Reader) is required for printouts. Adobe Acrobat Reader can be downloaded from <http://www.adobe.com>.

1.3. Installation

Windows application

No windows application available

1.4. Starting the ProSelect web program

When the program starts, the **System data** tab is active.

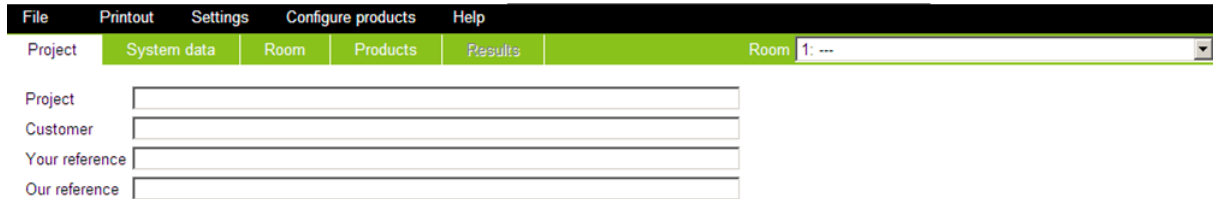
You will have different tabs to use:

- Project
- System data
- Room
- Products list
 - Add an product directly (or use the search engine to get help with the choices)

The projects are always saved locally.

2. Main tabs

2.1. Project tab



The screenshot shows the 'Project' tab selected in a software application. The interface includes a menu bar with 'File', 'Printout', 'Settings', 'Configure products', and 'Help'. Below the menu bar, there are several tabs: 'Project' (selected), 'System data', 'Room', 'Products', and 'Results'. To the right of these tabs is a 'Room' dropdown menu showing '1: ---'. Below the tabs, there are four input fields labeled 'Project', 'Customer', 'Your reference', and 'Our reference', each with a corresponding empty text box.

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The **Project** tab contains general information about the project.

- Project
- Customer
- Your reference
- Our reference

This information will be displayed in Printout header.

2.2. Printout

The project can be printed /exported as whole project or as parts of it.

Select how many rooms and the level of information that you need.

Select between print as PDF-dokument or export files as DXF (3D Model of product) or QPD (3D Model of product with included pressure- and sound figures for MagiCAD)

Required programs: Adobe Acrobat Reader or other program for previewing and printing a PDF file.

2.3. System data tab

	Cooling	Heating	
Room temperature	24.0	22.0	°C
Supply air temperature	18.0	20.0	°C
Water temperature in	14.0	45.0	°C
Calculate with	<input checked="" type="radio"/> dT <input type="radio"/> Water flow	<input checked="" type="radio"/> dT <input type="radio"/> Water flow	
Water temperature out	17.0	35.0	°C
Water flow	0.083	0.030	l/s

Default project settings

Unit color: Standard RAL 9010 - White

Ceiling type: c-c 600mm Tbar (592/594 mm)

Concealed grid

Factory settings: Nozzle & ADC setting on Site

Perforate pattern Face plate: Standard PB - Circ holes in triangular pattern

Buttons: Load model, Save model

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The **System data** tab contains general information about the project.

Note that you set System default values here for:

- Colour
- Ceiling type
 - What you choose here will affect the possible number of choices on product level.
- Factory Setting
 - Decide if you want to make nozzle setup on site or on factory
- Perforated pattern on the faceplate

You will also set standard Temperatures that are used in the calculations.

2.4. Printout

The project can be printed /exported as whole project or as parts of it.

Select how many rooms and the level of information that you need.

Select between print as PDF-dokument or export files as DXF (3D Model of product) or QPD (3D Model of product with included pressure- and sound figures for MagiCAD)

Required programs: Adobe Acrobat Reader or other program for previewing and printing a PDF file.

2.5. Room tab

ProSelect

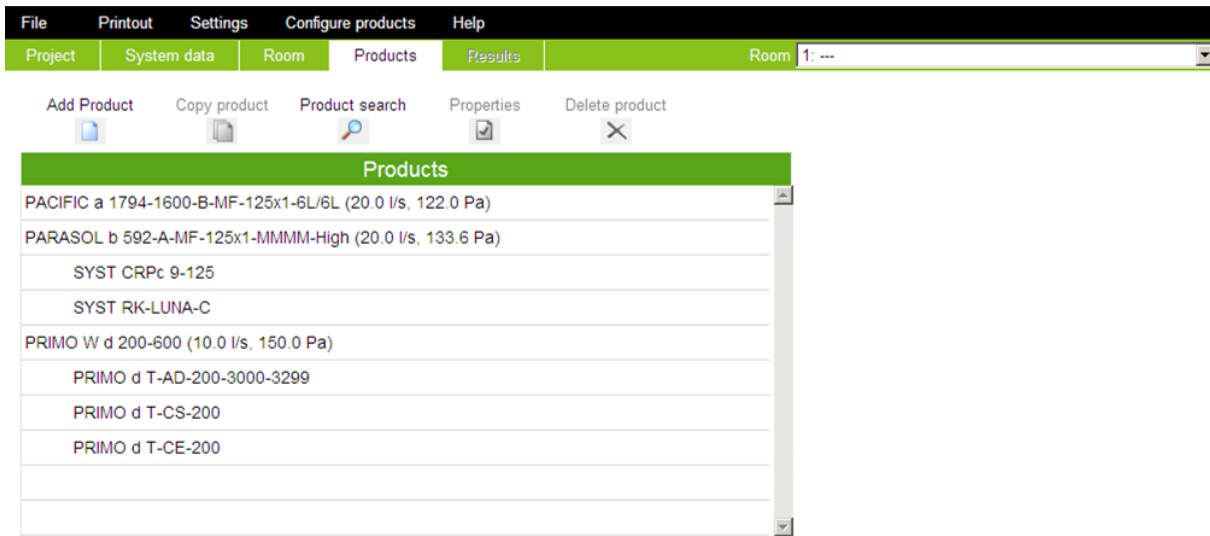
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The **Room** tab contains information about the selected room. The selected room is shown at the top of the program's main window (the name of the room can be input in the "Title" field).

The dimensions of the room are defined here, together with the type of room, in order to assign standard values for activity, absorption, maximum air speed in the zone of use and normal sound requirements. All of these standard values can be modified later. If none of the room types are applicable, choose "other".

- Save Room as...
 - Allow the user to give the room specific names
- Example Room
 - Here you will find Swegon AB defined rooms
- Add new Room
- Copy Room
- Erase Room
- Adjusted settings
 - Used if this room deviates from the "normal" input values in System data

2.6. Products tab



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The **Products** tab contains information about the products in the selected room. The selected room is shown at the top of the program's main window.

You can add products and/or accessories to the room. You will get warnings if some of the chosen criteria's are not fully filled.

- Add Product
 - Takes directly you to the calculation view
- Copy Product
 - Copy's product incl accessories
- Search an Product
 - A guide that helps you select the best unit based on your demands
- Edit an existing Product (you can also double click on the row that you want to edit)
- Delete an existing Product
- Add Accessories to Room
 - Accessories that are related to the room. Like a Room controller

3. Other Windows

3.1. Add Product

The **Add Product** button will take you to the calculation view. In the calculation view you can make your selections. In addition to this you have six different tabs to view:

- Image
 - Product photo
- Rendered
 - Product Rendered
- Wireframe
 - Product with dimensions
- Sound Diagram
 - Sound power level & Attenuation

ProSelect

Comfort modules
Climate beams
Perimeter units
Passive beams

Product:

Function:

Air Connection:

Primary air flow:

Size Capacity Module:

Accessories

Update results

Airflow/side4
10.0 l/s

K=2.53 (13.8-31.0 l/s)

1600 MF
4L2H/4L2H
Top view

Airflow/side2
10.0 l/s

Air Flow Config
Symmetric

ADC Air Pattern
ADC Straight

Image
Rendered Picture
Wireframe sketch

Sound Diagram
Calculation results
Flow pattern

PACIFIC a 1794-1600-B-MF-125x1-4L2H/4L2H

* incl 4 dB room attenuation

Sound Power Level Lw, dB									
Octave band Hz	63	125	250	500	1k	2k	4k	8k	Lp(A)*
Generation Lw	21	21	32	14	11	11	11	11	20
Attenuation dL	15	13	14	10	10	14	13	9	

Number of air connections:

Sound calculation

Add
Update
Close

- Calculation Results
 - Detailed technical calculations for air and water

ProSelect

Comfort modules | **Climate beams** | Perimeter units | Passive beams

Product: PACIFIC a MF
Function: Cooling & Heating

Air Connection: $\phi 125$ mm | Accessories | Update results

Primary air flow: 20.0 l/s
Size Capacity Module: 1600 mm

Airflow/side4: 10.0 l/s
Air Flow Config: Symmetric
K=2.53 (13.8-31.0 l/s)

Size Design Module: 1794 mm
ADC Air Pattern: ADC Straight

Image	Rendered Picture	Wireframe sketch
Sound Diagram	Calculation results	Flow pattern
Primary air flow, ql		20.0 l/s
Nozzle pressure, Pi		62.6 Pa
K-factor air, kpl		2.53
Sound Pressure Level, Lp(A)*		20 dB
Total pressure drop, DPI		64.3 Pa
	Cooling	Heating
Calculated outlet air temperature	16.6 °C	29.1 °C
Temp diff room and supply air, DTi	6.0 K	-2.0 K
Temp diff room and mean water, DTm	8.5 K	19.7 K
Capacity, air	144 W	-48 W
Capacity, water	669 W	835 W
Total capacity	813 W	787 W
Room temperature	24.0 °C	22.0 °C
Supply air temperature	18.0 °C	20.0 °C
Water temperature in	14.0 °C	45.0 °C
Calculate with dT		Water flow
Water temperature out	17.0 °C	38.4 °C
Water flow, Qv	0.053 l/s	0.030 l/s
Pressure drop water, DPv	6.1 kPa	0.8 kPa
K-factor water, kp	0.0216	0.0339

* incl 4 dB room attenuation

Adjusted settings

Add Update Close

- Flow pattern
 - Calculated values for "Distance between units" & "Distance to wall"

ProSelect

Comfort modules | **Climate beams**

Product: PACIFIC a MF
Function: Cooling

Air Connection: $\phi 125$ mm | Update results

Primary air flow: 20.0 l/s
Size Capacity Module: 1600 mm

Airflow/side4: 10.0 l/s
Air Flow Config: Symmetric
K=2.24 (12.3-27.4 l/s)

Size Design Module: 1794 mm
ADC Air Pattern: ADC V-shape

Image	Rendered Picture	Wireframe sketch
Sound Diagram	Calculation results	Flow pattern
Room height	2.80 m	
		Side 2 Side 4
A=Distance to wall with occupied zone (0.20 m/s)		0.97 0.97 m
B=Distance between units with occupied zone (0.20 m/s)		1.37 1.37 m

Add Update Close

3.2. Sound calculation of products in series

The **Sound Calculation** window will help you determine sound levels as a result of high airflow in the first unit, when products are mounted in series.

The button is placed in the Calculation view in the tab Sound Diagram and is only visible if the product can be mounted in series (ie. two air connections possible).

In the example below a single unit has sound level of 22 dB. If two identical units are mounted in series the last one will still have the same sound level (=22 dBA), but the sound in the first unit will be higher due to the increased airflow in the duct. Resulting in first unit in this example will be 29 dBA.

Sound calculation

Inputs

Duct Diameter

Last Unit Air Flow 20.0 l/s

Total Air Flow 40.0 l/s
(Default=Normal*2)

Results

Calculation results			
	Velocity in duct	Nozzle Pressure	Sound Pressure Level
Last Unit	1.6 m/s	58.1 Pa	22 dB
First Unit	3.3 m/s	58.1 Pa	29 dB

* incl 4 dB room attenuation

3.3. Calculation of sound levels for different operation conditions

The **Pressure setup** window will help you determine sound levels as a result of different operation conditions. Calculation of sound levels for different operation conditions: Normal, Boost & Min Airflow (apply for PARAGON with damper and attenuator).

The button is only displayed when possible to use it and it is named "Pressure setup" and is placed in the tab "Sound diagram".

In the example below a PARAGON unit with normal air flow of 20 l/s has sound level of 23 dB, calculated in Calculation view. The Pressure setup window tells you the sound level at Boost & min air flow.

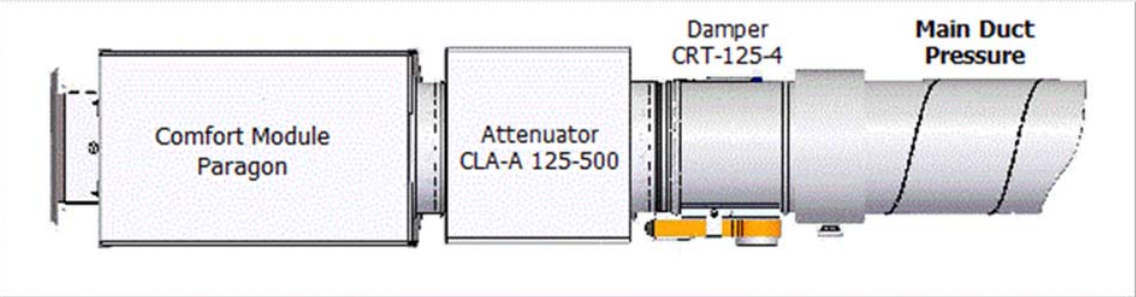
Normal airflow = 20 l/s gives sound level of 23 dBA

Boost airflow = 25 l/s gives sound level of 28 dBA

Min airflow = 10 l/s gives sound level of 26 dBA

Pressure Setup

Inputs	Results																								
<p>Main Duct Pressure <input style="width: 60px;" type="text" value="200.0"/> (186.0 Pa) <small>(Default=Pi Boost +20 Pa)</small></p> <p>Normal Air Flow (Occ) 20.0 l/s</p> <p>Boost Air Flow <input style="width: 60px;" type="text" value="25.0"/> (25.0 l/s) <small>(Default=Normal x 1.25)</small></p> <p>Min Air Flow (No Occ) <input style="width: 60px;" type="text" value="10.0"/> (10.0 l/s) <small>(Default=Normal x 0.5)</small></p> <p>Damper control <input style="border: none; border-bottom: 1px solid black; text-align: center; font-size: small; font-family: sans-serif; font-weight: normal; margin-left: 5px;" type="text" value="%"/></p>	<div style="background-color: #92d050; text-align: center; padding: 2px; border-bottom: 1px solid black;">Calculation results</div> <table style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 20%;">Normal Air Flow (Occ)</th> <th style="width: 20%;">Boost Air Flow</th> <th style="width: 20%;">Min Air Flow (No Occ)</th> </tr> </thead> <tbody> <tr> <td>Air flow state</td> <td>20.0 l/s</td> <td>25.0 l/s</td> <td>10.0 l/s</td> </tr> <tr> <td>Nozzle Pressure</td> <td>106.2 Pa</td> <td>166.0 Pa</td> <td>26.6 Pa</td> </tr> <tr> <td>Damper control</td> <td>42 %</td> <td>57 %</td> <td>22 %</td> </tr> <tr> <td>Damper pressure drop</td> <td>92.4 Pa</td> <td>31.9 Pa</td> <td>173.1 Pa</td> </tr> <tr> <td>Sound pressure level *</td> <td>23 dB</td> <td>28 dB</td> <td>26 dB</td> </tr> </tbody> </table> <p style="text-align: right; font-size: x-small; margin-top: 5px;">* incl 4 dB room attenuator</p> <div style="text-align: right; margin-top: 10px;"> <input style="margin-right: 10px;" type="button" value="Calculate"/> <input style="margin-right: 10px;" type="button" value="OK"/> <input type="button" value="Cancel"/> </div>		Normal Air Flow (Occ)	Boost Air Flow	Min Air Flow (No Occ)	Air flow state	20.0 l/s	25.0 l/s	10.0 l/s	Nozzle Pressure	106.2 Pa	166.0 Pa	26.6 Pa	Damper control	42 %	57 %	22 %	Damper pressure drop	92.4 Pa	31.9 Pa	173.1 Pa	Sound pressure level *	23 dB	28 dB	26 dB
	Normal Air Flow (Occ)	Boost Air Flow	Min Air Flow (No Occ)																						
Air flow state	20.0 l/s	25.0 l/s	10.0 l/s																						
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Damper control	42 %	57 %	22 %																						
Damper pressure drop	92.4 Pa	31.9 Pa	173.1 Pa																						
Sound pressure level *	23 dB	28 dB	26 dB																						



The diagram illustrates the physical components of the system: a rectangular Comfort Module Paragon on the left, followed by a square Attenuator CLA-A 125-500, a cylindrical Damper CRT-125-4, and finally a section of duct labeled Main Duct Pressure.

4. Calculation

4.1. Technical calculation

Contact Swegon AB for further information.

5. File, Printout, Settings and Help

5.1. File

Allows the user to:

- Create a new project
- Open an existing project
- Save a project
- E-mail a project

5.2. Printout

The project can be printed /exported as whole project or as parts of it. Select how many rooms and the level of information that you need. Select between print as PDF-dokument or export files as DXF (3D Model of product) or QPD (3D Model of product with included pressure- and sound figures for MagiCAD)

<input checked="" type="checkbox"/> 1: ---	Office	PACIFIC a 1794-1100-A-MF-125x1-4H/4H	Calc OK
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			

Technical PrintOut, General Survey
 Technical PrintOut
 System settings

Description text
 Sketch
 Electrical Wiring

PDF MagiCAD (QPD)
 DXF

Use this language in PrintOuts
English

PrintOut Logo
SWEGON Logo

Printout Close

Required programs: Adobe Acrobat Reader or other program for previewing and printing a PDF file.

5.3. Settings

The project can be in two different units: metric (SI) and Imperial.

You can set the settings that are preferred in your local market.

Settings

Units		User Language and PrintOuts	
<input checked="" type="radio"/> SI <input type="radio"/> Imperial		Use this language in the program	
Dimensions	m/mm	<input type="text" value="English"/>	
Capacity	W	Use this language in PrintOuts	
Temperature	°C	<input type="text" value="English"/>	
Temperture difference	K	Other settings	
Pressure - Air	Pa	Show page server time <input type="checkbox"/>	
Pressure - Water	kPa		
Water flow	<input type="text" value="l/s"/>		
Water Volume	l		
Weight	kg		
Room attenuation	<input type="text" value="4 dB"/>		
Air volume	<input type="text" value="l/s"/>		
Soundlevel request	<input type="text" value="dB(A)"/>		