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Rittal RiTherm

Manual

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1.0 Overview: RiTherm

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1.0 Overview: RiTherm

RiTherm is the free software tool for needs-based, reliable and energy-efficient enclosure climate control planning that comes with standards-compliant documentation and proof of the associated carbon footprint. Work on climate control projects together with your team.

Plan the correct climate control system for your enclosures regardless of whether it is an indoor or outdoor application, an enclosure set, a single enclosure or even if it is an non-Rittal enclosure.

The integrated energy-efficiency calculator points out energy-efficient devices, provides information about the CO_2 footprint from delivery to operation, provides information about the F-gases, the GWP of the cooling device and following the calculation, suggests the best solutions for your climate control systems.

You can also download the standards compliant heat dissipation certificate, a provision of all necessary product information and a summary of your climate control plan in different languages, after finishing the calculation.

1.1 Platform and dialogues

RiTherm is an application in Eplan Cloud. Eplan Cloud connects data, projects, disciplines and engineers worldwide openly and cloud based.
Eplan Cloud extends the Eplan platform with perfectly tailored cloud services. EPLAN technology ensures that your enterprise remains competitive and future-proof during the digital transformation.
The Eplan Cloud portfolio is being developed and expanded continually. When an action is performed in an Eplan Cloud product, the status of this action is displayed. by dialogues in the user interface:

(A) The action will be performed

(B) The action was carried out successfully.

(C) The action could not be carried out successfully

In addition, certain actions can be tracked by clicking the symbol ♤ in the header bar to open the notifications.

2.1 Opening via Eplan Cloud

Open your browser and login into your Eplan Account via Eplan Cloud. You can find further information <u>here</u>. Select your desired organization.
The cloud dashboard will open, and you will see all Eplan applications.

1. Click on Ritherm.
2. You will be forwarded to the cloud interface of RiTherm.

2.2 Opening via Rittal Homepage

Open the official Homepage <u>Rittal</u>. Click on the software banner and then on climate calculation with RiTherm.

After clicking on the link „Calculate your climate control needs now" you will be forwarded to the cloud interface of RiTherm.

3.0 User interface

The user interface can vary for every user. Depending on whether you are a signed-in or not signed in user, the user interface and thus the range of functions varies.

Signed-in users can **create projects** within their organization, **import projects from RiTherm 6.7** and create **calculations for outdoor-enclosures**.

> ⓘ Creating a user account and the associated additional features for RiTherm are free of charge!

3.1 Signed-in User

You can switch between the Home Screen, Projects and Settings on the navigation bar on the left side. The information management, Eplan Cloud Dashboard and the user settings can be found in the header.
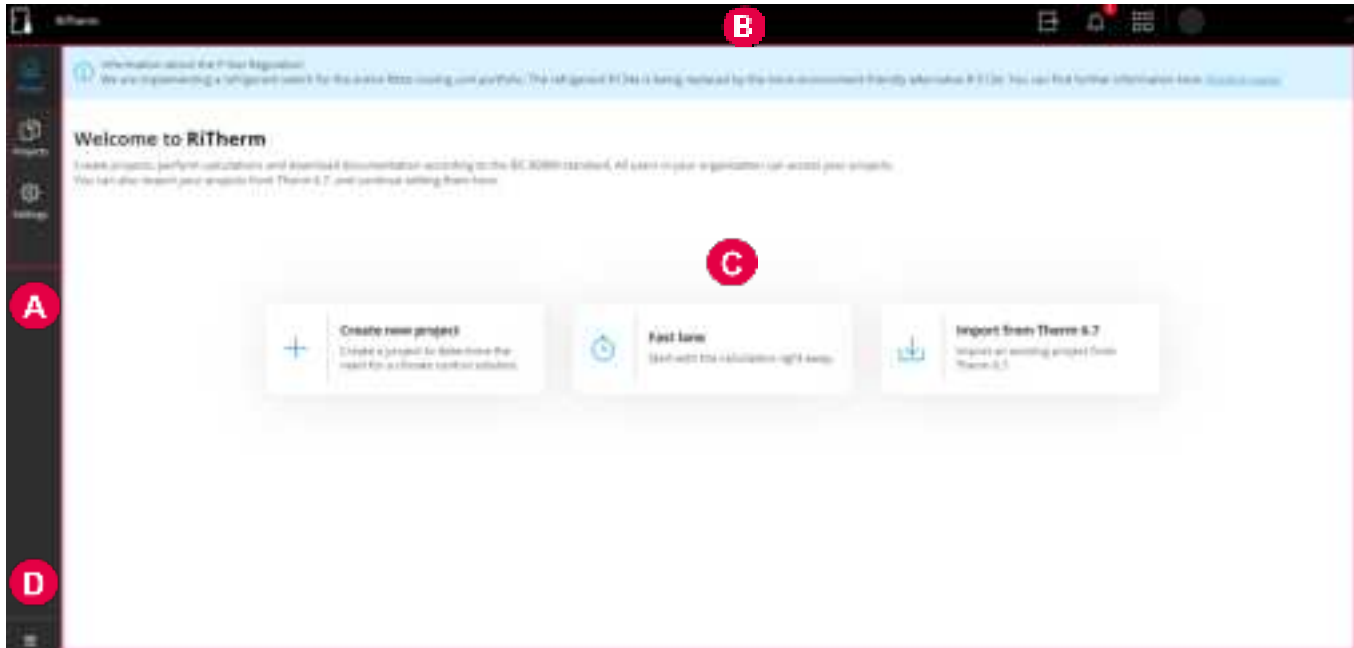

Fig. 1: User interface for logged-in user

(A) Navigation bar with the **Home Screen, Projects and Settings**

(B) Header

(C) Working Space with **Creating a new project**, **Fast Lane** and **Import from Therm 6.7**

(D) **Online-Help**

3.2 Unsigned User

Unsigned Users start their climate calculation at the fast lane. You can find further information under the chapter „**6.0 Climate control calculation**"

4.0 Settings

You can switch certain physical units to the appropriate system under the menu point "Settings".

Fig. 2: Settings

(A) Unit of length: Switch between millimeter and inch

(B) Unit of temperature: Switch between Celsius and Fahrenheit

(C) Units of Power: Switch between Watt and the British Thermal Unit (BTU)

Click on save to apply your settings.
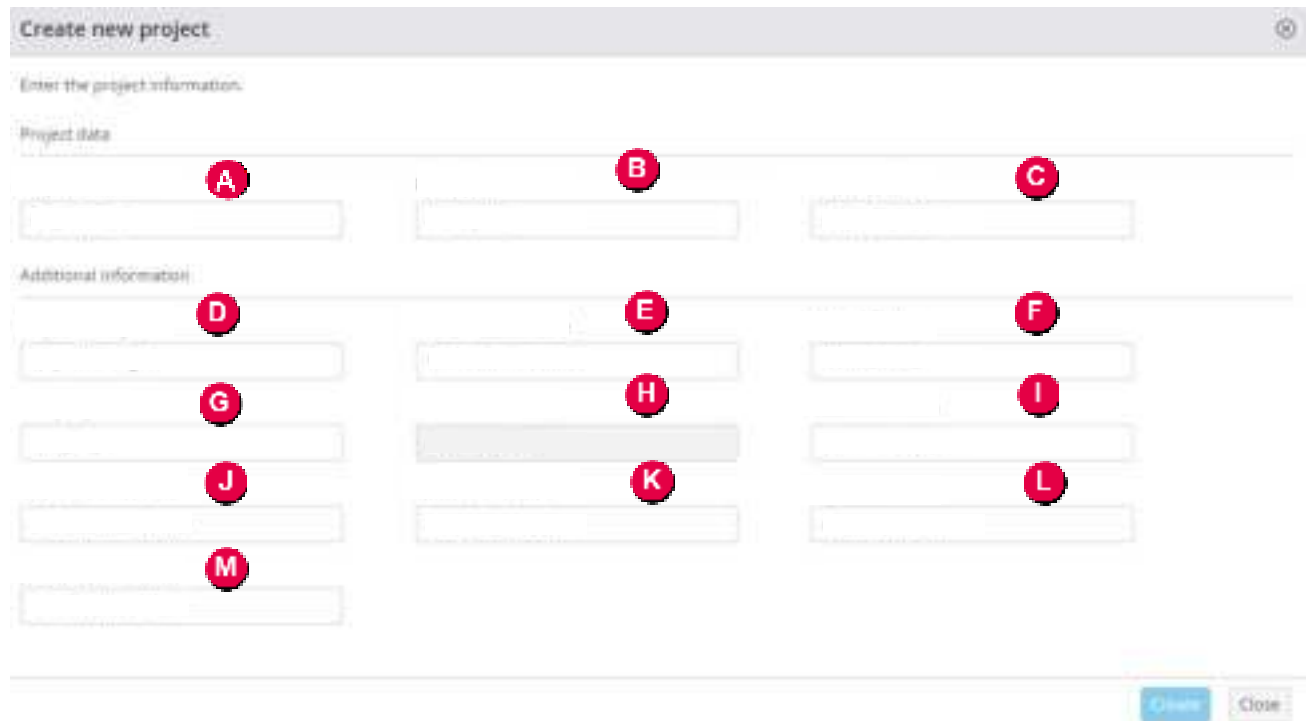
5.0 Projects

Projects are visible for all members of the organization. You can save important information in the project. You can also add climate control calculations for the project. The climate control calculations can be duplicated and reworked afterwards.

(i) You can find a detailed guide for creating organizations on EPLAN Organizations.

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You can add following information while creating a project:

Fig. 3: Creating a new project

A	Project name
B	Description
C	Project number
D	Project manager
E	Year of manufacture
F	Manufacturer
G	Company
H	Creator: Name
I	Customer: Name
J	End customer: Name
K	Installation location
L	Contact person
M	Contact information

5.2 Project navigation

After you have created a project and navigated to the project overview, you can see all details of the project and you could change them, if you made a mistake. Also, additional tools and actions are available here.
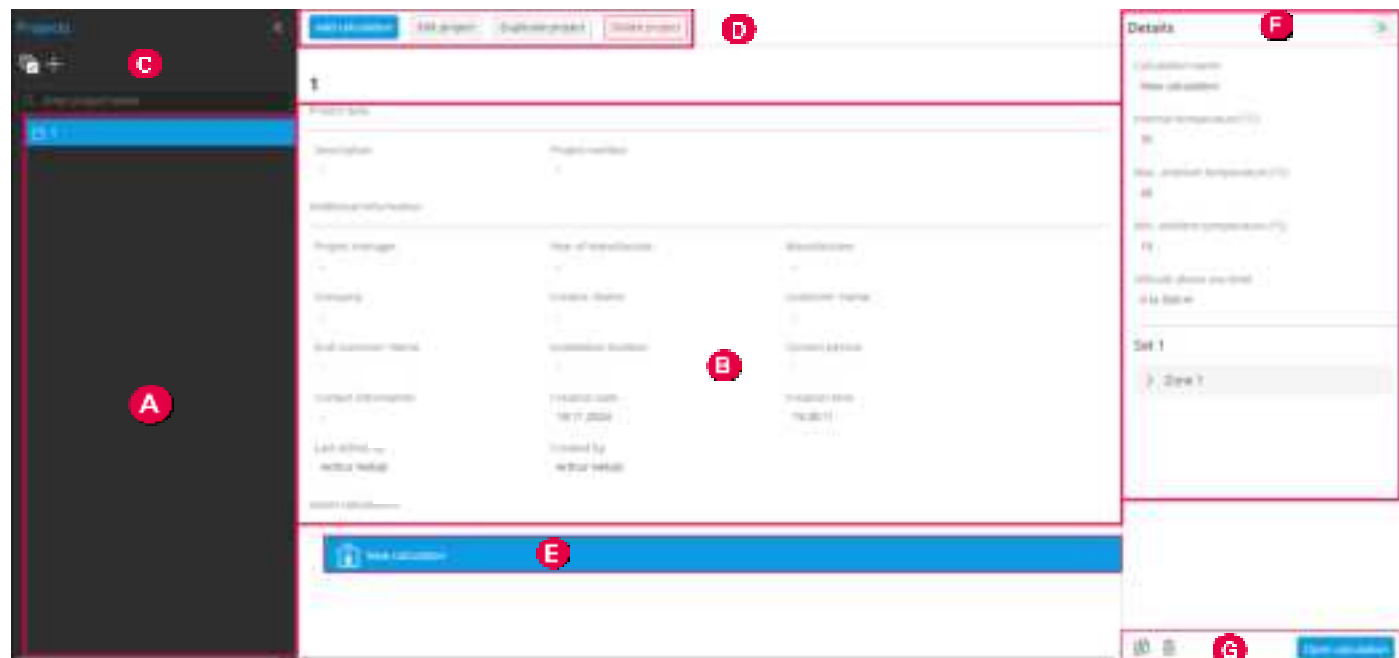

Fig. 4: Project overview

A	Project overview
B	Project data
C	Create a new project
D	Operation area for projects with **Add calculation, edit project, duplicate project and Edit project**
E	Overview of all created climate control calculations
F	Detailed information about the selected climate control calculation
G	Operating Area for climate control calculations with **Copy calculation, Delete calculation and opening calculation** (for changing values within the climate control calculation)

ⓘ   If you delete a project or a calculation, all data will be irrevocably lost!

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6.0 Climate Control Calculation

This is the landing page for unsigned users. Unsigned users can carry out the indoor calculation, outdoor calculation is greyed out and not available.

Signed in users can choose between the indoor calculation AND outdoor calculation.

Fig. 5: Start screen climate control calculation

A Overview of all steps for the climate control calculation

B Back to home. Unsaved changes will be lost!

ⓘ Fun fact: Signed in users can also click on the RiTherm icon on the top-left side to go back to home.

6.1 Calculation properties for indoor calculation

You can fill out the needed calculation properties here and configure your enclosure set with the associated specifications and power output.

Fig. 6: Calculation properties indoor

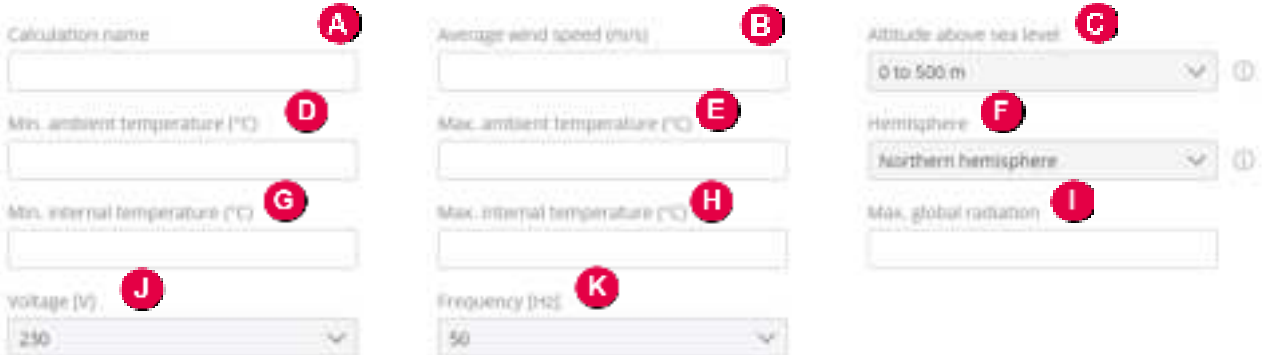|	
A	Calculation Name
B	Altitude above sea level
C	Internal Temperature (5°C to 70°C or 41°F to 158°F)
D	Min. ambient temperature (-20°C bis 70°C or -4°F to 158°F)
E	Max. ambient temperature (-20°C bis 70°C or -4°F to 158°F)
F	Mains voltage
G	Mains frequency

ⓘ   For installation altitudes above 2000 m or 6600 ft please contact Rittal.

You can fill out the needed calculation properties here and configure your enclosure set with the associated specifications and power output.

Calculation properties

All fields are required. Enter the target temperature inside the enclosure and the predicted ambient temperatures.

Fig. 7: Calculation properties outdoor

- **A** Calculation name
- **B** Average wind speed (m/s)
- **C** Altitude above sea level
- **D** Min. ambient temperature (-40°C to 70°C or -40°F to 158°F)
- **E** Max. ambient temperature (-40°C to 70°C or -40°F to 158°F)
- **F** Hemisphere
- **G** Min. internal temperature (5°C bis 70°C or 41°F to 158°F)
- **H** Max. internal temperature (5°C bis 70°C or 41°F to 158°F)
- **I** Max. global radiation
- **J** Mains voltage
- **K** Mains frequency

ⓘ For installation altitudes above 2000 m or 6600 ft please contact Rittal.

6.2 Create enclosure set(s)

You can calculate the climate control for enclosure rows and set up different cooling zones. You can use Rittal enclosures or third-party enclosures. You can add up to 10 sets by clicking the plus icon.

You must specify whether your enclosure is double-walled and the number of doors for third party enclosures.

Fig. 8: Enclosure set configuration

A Add new Set

B Set number and Set name

C Save or cancel creation of set

D Add, duplicate or delete new enclosure, adding divider panels or allowing colling device mounting on all surfaces

E Add new enclosures, side walls and add or copy new enclosures

F Enclosure name

G Additional covering type

H Enclosure model

I Enclosure dimensions (automatically evaluated for Rittal enclosures, needs to be added for custom enclosures)

J K-factor of enclosure material (needs to be added for custom enclosures)

K Power dissipation (W) (mor information in upcoming chapter)

L Power dissipation buffer (%)

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6.3 Physical and virtual climate zones

Normally the power dissipation among an enclosure row is unevenly distributed among the individual enclosures. This is exactly why RiTherm offers you the possibility of dividing enclosure rows into separate climate zones for the optimization of your cooling solution.

To create virtual **climate zones**, virtual partitions (F) must be added between the enclosures.
Setting up virtual climate zones gives you the opportunity to view the climate zone and its enclosures from a separate thermal perspective and configure a precise and individual cooling solution for your enclosures with the larges thermal load.

In order to create truly separated or **physical climate zones**, physical partitions (E) must be added between the enclosures.
Setting up physical climate zones gives you the opportunity use diverse cooling solutions for individual climate zones as well as the opportunity to configure an individual cooling solution for this separate zone.
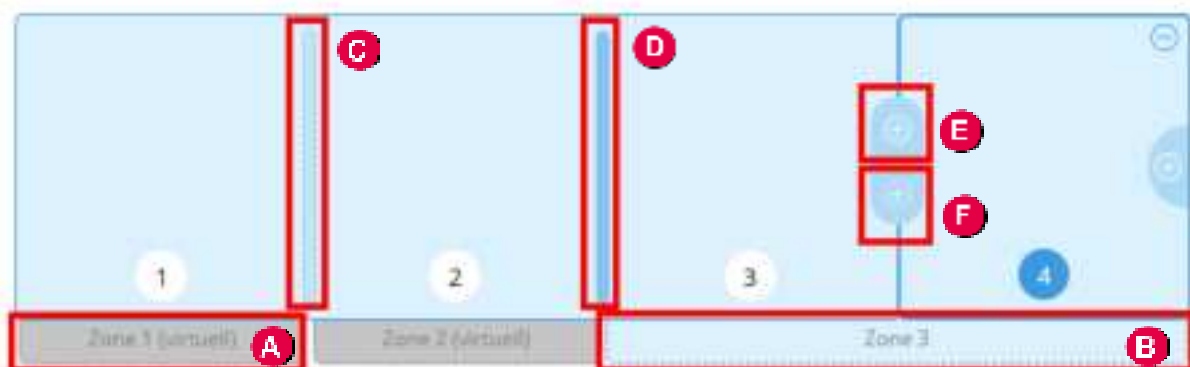

Fig. 9: Climate zones

A Virtual climate zone
B Physical climate zone
C Virtual partition
D Physical partition
E Adding a physical partition
F Adding a virtual partition

6.4 Calculate power dissipation

A Pop-Up window for the calculation appears, after clicking on the power dissipation text field. The power dissipation can be calculated based on the component list, based on the temperature or based on manually input information.

Another Pop-Up window appears for the calculation, based on temperature or the component list, where you need to give more detailed input on the calculation.

Fig. 10: Power dissipation calculation

A	Power dissipation calculated by temperature
B	Power dissipation calculated by component list
C	Manuel specification oft the power dissipation with simultaneity factor
D	Apply or cancel the input

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6.4.1 Calculate power dissipation by temperature

The calculation of the power dissipation by temperature will only be executed and shown, after saving the set.

Fig. 10: Power dissipation by temperature

Ⓐ Internal temperature (5°C to 150°C)

Ⓑ Ambient temperature (-20°C to 70°C)

Ⓒ Operation area with apply calculation, change calculation method and cancel calculation

6.4.2 Calculate power dissipation by component list

It is possible to calculate the power dissipation with the included component catalog. The component catalog includes various components, with their power dissipation. It is also possible to work with general components, this means components without manufacturer.

Fig. 11: Power dissipation components

A	Search by component name directly
B	Search for components by **manufacturer, component group, and the exact name of the component**
C	Add simultaneity factor, the power dissipation will be calculated automatically
D	Number of enclosures and added components
E	Overview of added components and display of total power dissipation
F	Operation area

6.5 Calculation

You can calculate if cooling is needed for your enclosure set, after filling out all necessary parameters and specs. After the calculation of the results, it will be displayed if cooling is needed, which temperature the enclosure will reach without cooling solution and how high the required cooling capacity is.

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7.0 Device Overview

You will be guided to the cooling device selection, after your climate calculation. You will see the three best suited cooling devices for your application, under "Recommendations ". You can use "Switch to all available devices" to display a list of suitable cooling devices, if you still want another cooling device, that is not displayed under "Recommendations."
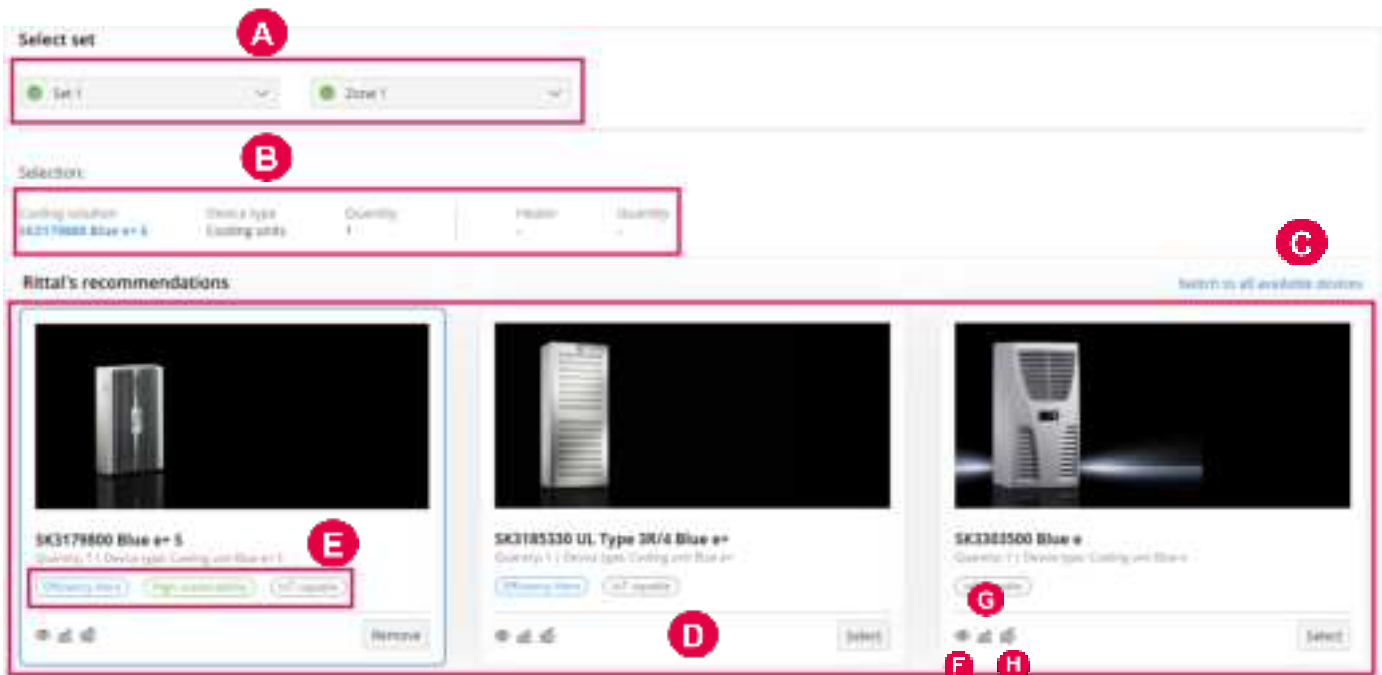

Abb. 12: Recommendations cooling devices

A	Selected set
B	Information about the selected cooling device
C	Show all available and applicable cooling devices
D	Display of the three best cooling devices
E	Cooling device tags
F	Cooling device preview and linked product page
G	Interactive characteristics
H	Climate profile with carbon footprint and more

7.1 Accessories

It is possible to select applicable accessories for your set, after you have chosen the cooling device. This includes a broad variety of components like circuit brakers, filter mats etc.

7.2 Summary

The summary shows you your entire **calculation**, including the general information, the set created and an order overview with the selected accessories.

You also have the option of saving various documents locally as PDF files, by clicking on the "Save calculation in project" button. It is also possible to assign the calculated cooling solution to a project.
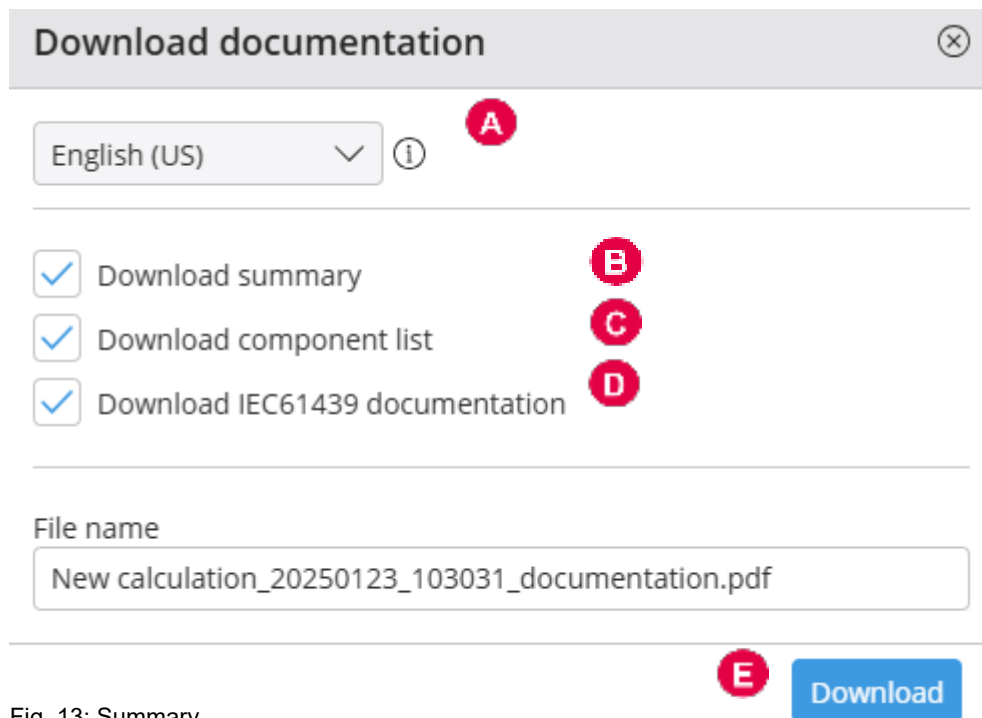

Fig. 13: Summary

A   Selection of language of the summary

B   Select summary

C   Select list of components (important for a faster delivery time)

D   Select IEC61439-Documentation

E   Download selected files

✓ Good job, you have done it!

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Disclaimer

Project data of the Eplan Platform and the associated products Eplan Electric P8, Eplan Fluid, Eplan Pro Panel and Eplan Preplanning are saved in an "Eplan project". Each software version of the Eplan Platform and the associated products have a version-specific format in which the Eplan projects are saved. The Eplan project is the standard for further processing of the project data in the Eplan Platform. If you do not have a compelling reason to use the Eplan project in the format of an older Eplan Platform version, Eplan generally recommends to use the current Eplan Platform version and thus the current Eplan project format. By saving the Eplan project in the format of an older Eplan Platform version, the display and functionality of the saved Eplan objects is normally obtained in the format of an older Eplan Platform version. There are restrictions, however. Some objects and the associated data can be displayed differently, can be distorted or get lost when saving an Eplan project in the format of an older Eplan Platform version. Data that gets lost or is distorted when saving an Eplan project in the format of an older Eplan Platform version is not restored or corrected when reading the project into a more recent software version of the Eplan Platform. Eplan does not assume any liability that an Eplan project which was saved in the format of a different Eplan Platform version is identical in content with the original project.

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