

# リターナル熱計算・選定ツールRiThermの使用方法

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POWER DISTRIBUTION

CLIMATE CONTROL

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SOFTWARE & SERVICES



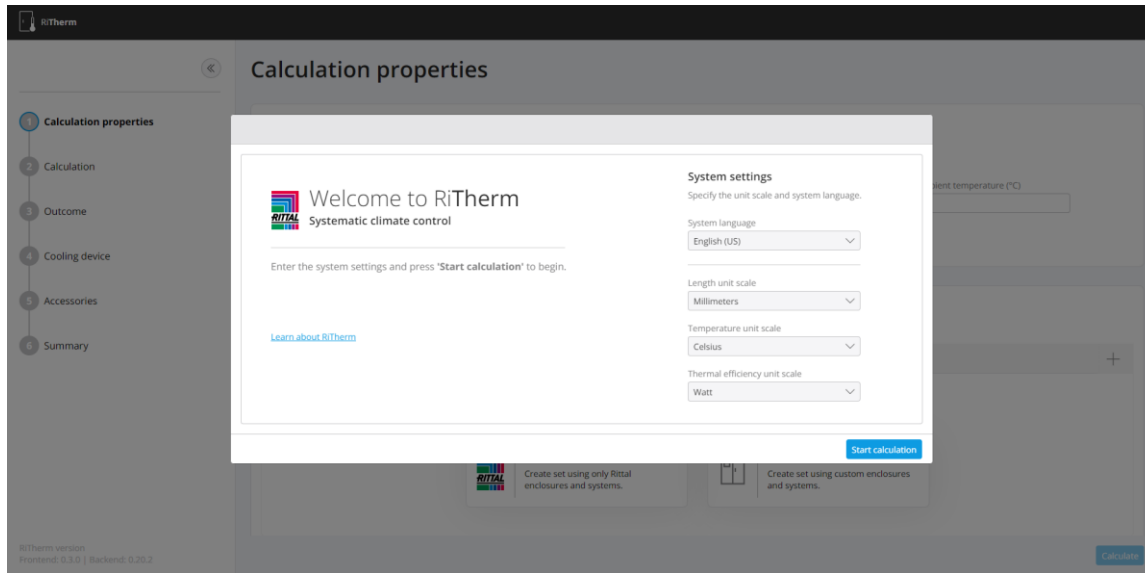
# 1. アクセス方法・スタートページ

# RiTherm アクセス方法

RiTherm はどこからアクセスできますか？

1

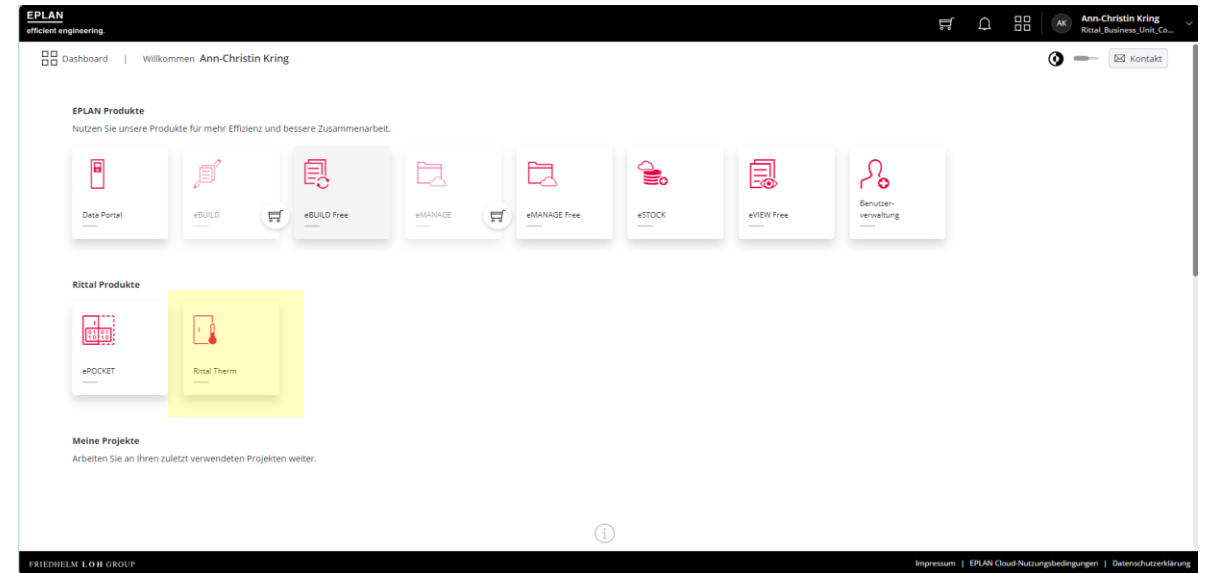
リタールホームページからアクセス



→ [RiTherm \(eplan.com\)](https://eplan.com)

2

EPLAN Cloud からアクセス



→ [EPLAN Cloud](https://eplan.com)

※ EPLANアカウントを使用しなくてもRiThermでの計算が可能です、保存ができません。  
※ 屋外用熱計算を使用するには、EPLANアカウントにサインインする必要があります。

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# RiTherm アクセス方法

## リタールホームページからアクセス



リタールホームページ  
<https://www.rittal.com/jp-ja>

→ [RiTherm \(eplan.com\)](https://www.rittal.com/jp-ja)



# RiTherm スタートページ

## EPLANアカウントを使用しない場合

RiTherm

Sign in Join

»

Welcome to RiTherm  
Systematic climate control

Enter the system settings and press '**Start calculation**' to begin.

[Learn more about RiTherm](#)

**System settings**  
Specify the units and the language.

System language  
English (US) ▾

Length unit scale  
Millimeters ▾

Unit of temperature  
Celsius ▾

Thermal efficiency unit scale  
Watt ▾

Start calculation

言語:  
英語/ドイツ語

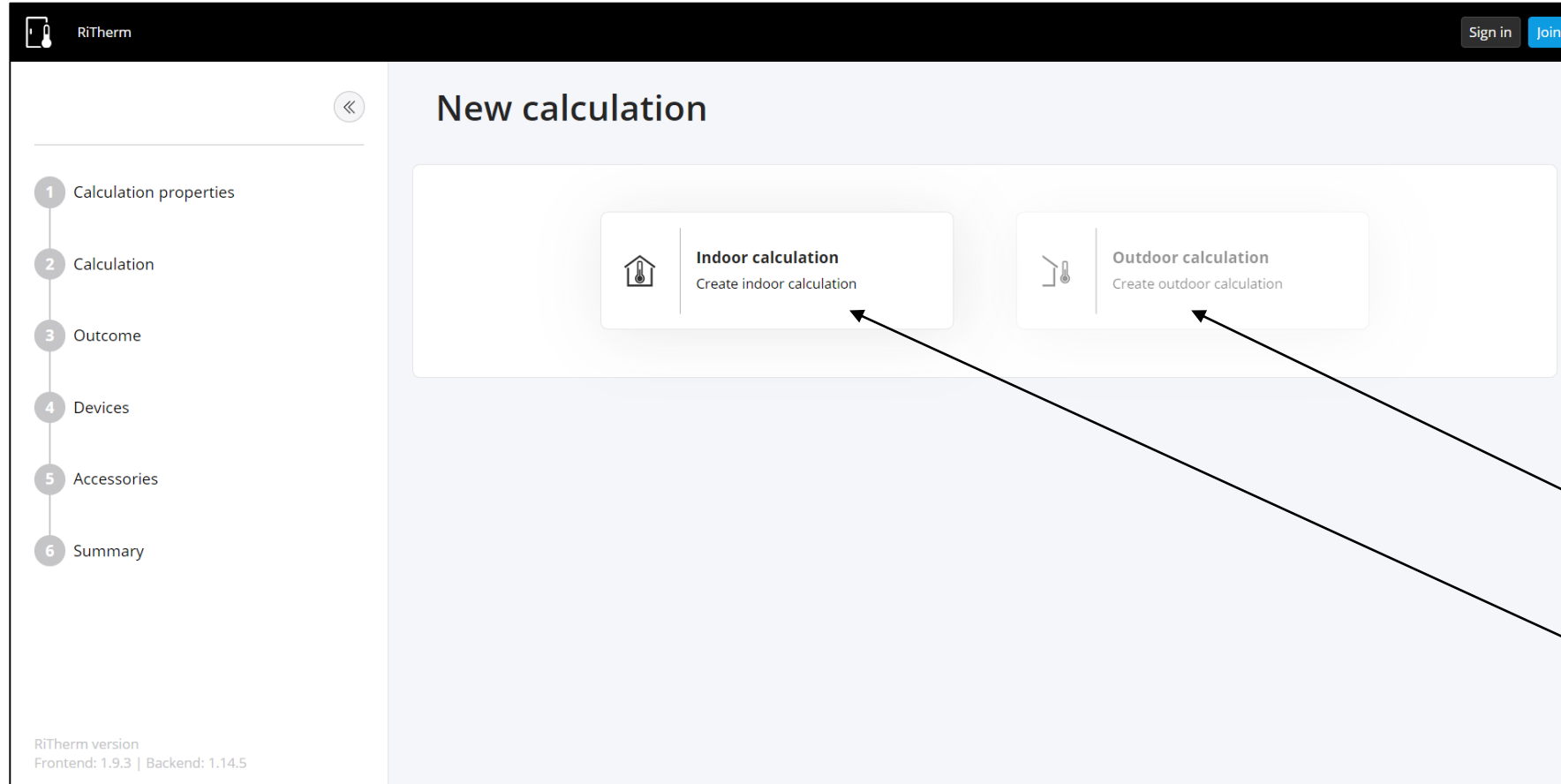
長さ単位:  
mm/inch

温度単位:  
摂氏/華氏

熱量単位:  
W/BTU

# RiTherm スタートページ

## EPLANアカウントを使用しない場合

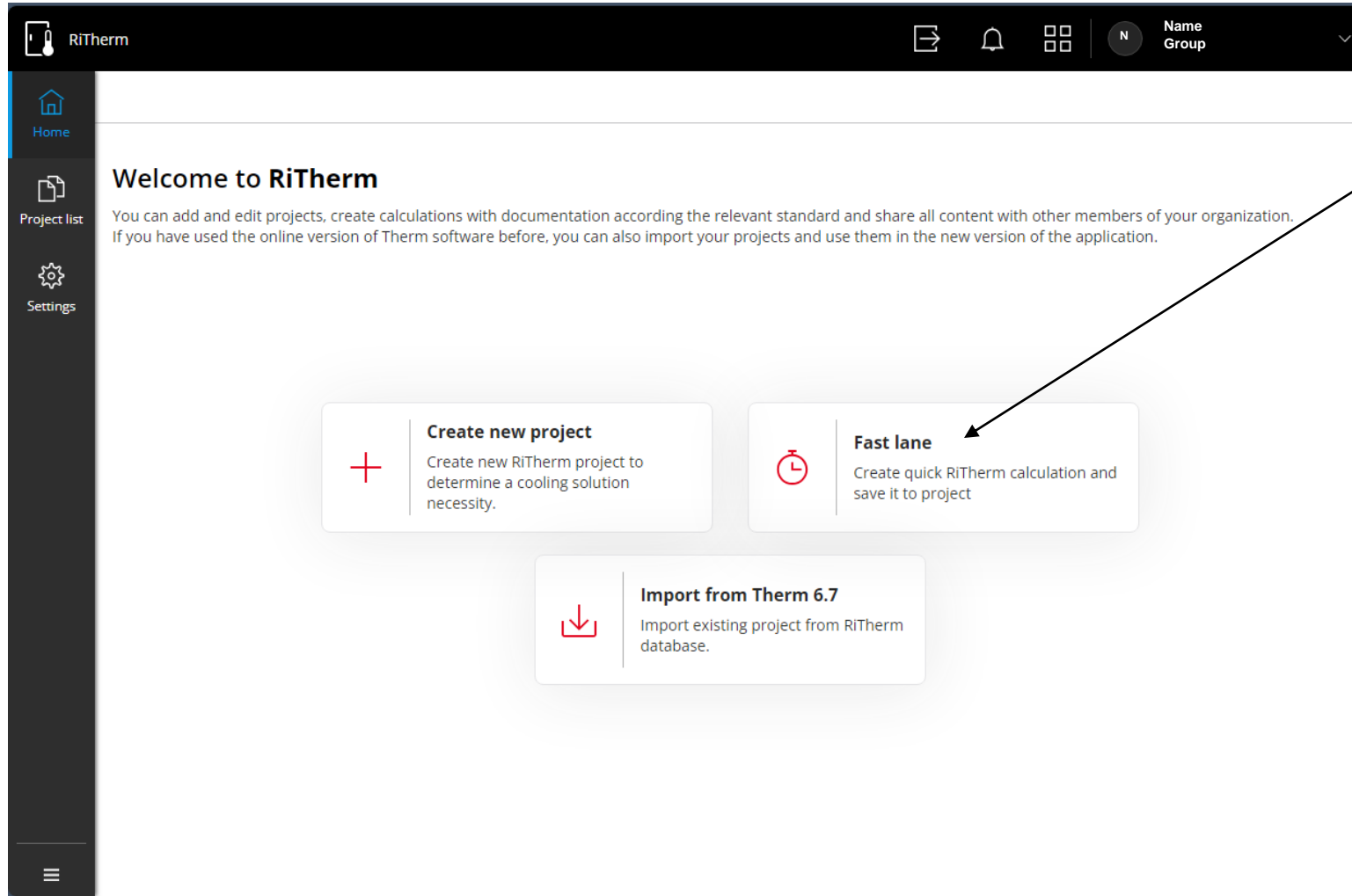


屋外用熱計算  
(EPLANアカウントが必要)

屋内用熱計算

# RiTherm スタートページ

## EPLANアカウントを使用する場合



初めての場合は  
ここからスタート

## 2. 屋內用熱計算



# RiTherm 屋内用熱計算

## 設定温度・盤外温度条件の記入

設定温度  
(盤内希望温度)

盤外最高温度

盤外最低温度

«

### New calculation

Back to main page

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

Calculation name:

Altitude above sea level:

Set internal temperature (°C):  **情報入力**

Min. ambient temperature (°C):

Max. ambient temperature (°C):  **情報入力**

**Create enclosure sets**  
First set will be added after choosing enclosure type. After that, you can add up to 10 sets using PLUS button.

+

Select type of configuration

**Rittal enclosures**  
Create a set using only Rittal

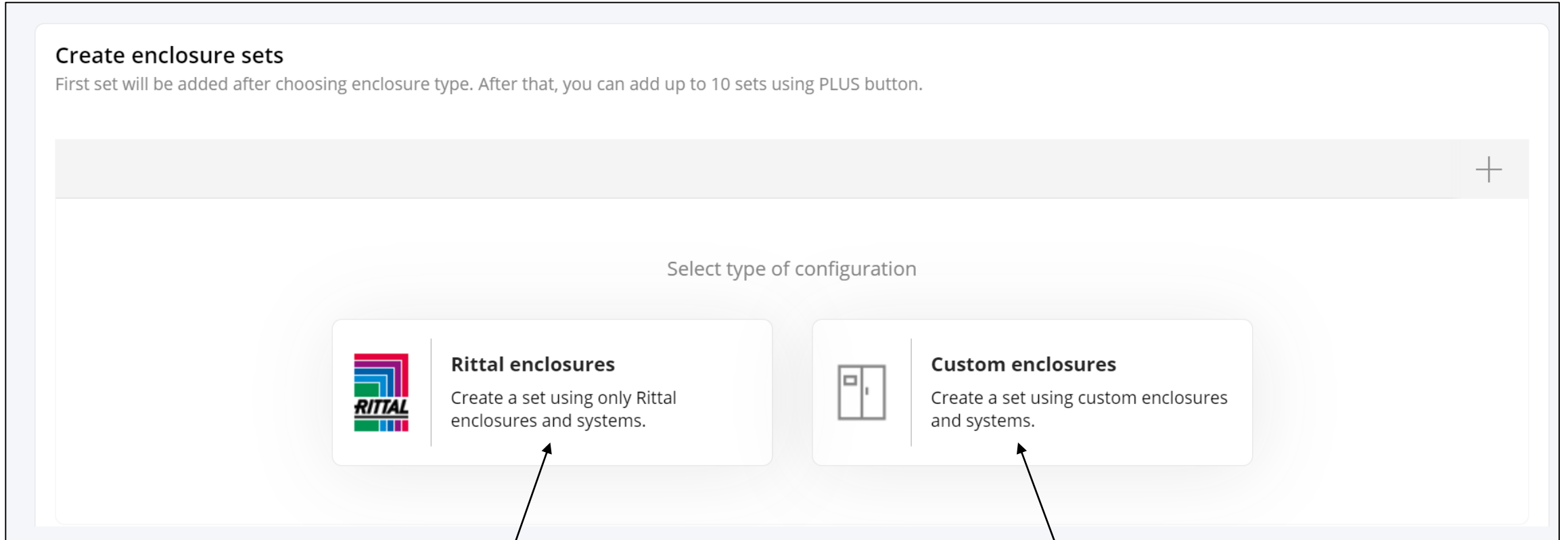
**Custom enclosures**  
Create a set using custom enclosures

Calculate

RiTherm version  
Frontend: 1.8.0 | Backend: 1.11.4

# RiTherm 屋内用熱計算

## 筐体情報の記入



リタール標準筐体  
ご使用の場合  
(標準筐体の品番で情報特定)

リタール特注筐体・その他  
筐体ご使用の場合  
(筐体情報は手入力必要あり)

# RiTherm 屋内用熱計算

リターン標準筐体の場合

※ 注意:  
筐体と発熱量情報の記入完了後  
はsave setボタンをクリック!

「+」マークで  
周囲壁を設定

単独筐体の場合

連結盤の場合の  
筐体追加

設置状態

Selected enclosure 1 ⓘ

Additional covering type **情報入力**  
 Floor standing  Roof covered  Roof covered and floor standing  None

Enclosure model **情報入力**  
TS 8808500

Dimensions (WxHxD)  
800 x 2000 x 800

Material (K-factor)  
Sheet steel (5.5)

Heatloss (W) **情報入力**  
Heatloss

リターン標準筐体の品番

盤内発熱量の記入

Cancel Save set

# RiTherm 屋内用熱計算

## 盤内発熱量既知／未知の場合の記入

Heatloss calculator

Calculate heatloss  
Calculate the heatloss using one of the options below, if you're unsure of the correct value.

Calculate by temperature

Calculate by device list

OR

Insert heatloss manually  
Insert the heatloss manually, if you already know the correct value.

Heatloss (W)  
500

Workload factor (%)  
100

Apply heatloss

Cancel

盤内発熱量が未知の場合：

左：

冷却装置なしの場合の盤内盤外温度実測値による熱計算（冷却装置の後付け選定に適する）

右：

RiTherm内蔵の盤内機器リストより機器を選び、発熱量を計算する（リストに載っていない機器がある場合に適しない）

盤内発熱量が既知の場合の記入

盤内機器稼働率

# RiTherm 屋内用熱計算

## 入力したパラメータと空調結果の概要

空調が必要であることを示す色付マーキング

Outcome

Back to main page

● Cooling device needed

Set 1  
Single enclosure

| Temperature without climate control | Set internal temperature | Heatloss |
|-------------------------------------|--------------------------|----------|
| ⚠ 54 °C                             | 35 °C                    | 683 W    |

Temperature without climate control

Set internal temperature (°C)

Max. ambient temperature (°C)

35 - +

40 - +

Calculate ⓘ

Voltage [V]

Frequency [Hz] **情報入力**

230 v

50 v

Back Next

RiTherm version  
Frontend: 1.8.0 | Backend: 1.11.4

1 Calculation properties

2 Calculation

3 Outcome

4 Cooling device

5 Accessories

6 Summary

空調しない場合の盤内温度

# RiTherm 屋内用熱計算

## 適切な空調ソリューションの概要

対応する空調機器の数

Devices

Back to main page

Select set

Set 1

| Selected device             | Device type | Quantity |
|-----------------------------|-------------|----------|
| > Fans ⓘ                    | n/a         | n/a      |
| > Cooling units 64          |             |          |
| > Liquid cooling 33         |             |          |
| > Air/air heat exchangers ⓘ |             |          |

No devices available. Air cooling is impossible - maximum ambient temperature is greater than set internal temperature.

このタイプの空調機器が対応しない理由の簡単な説明

Set internal temperature (°C): 35

Max. ambient temperature (°C): 40

Calculate ⓘ

Voltage [V]: 230

Frequency [Hz]: 50

Back Next

RiTherm version  
Frontend: 1.8.0 | Backend: 1.11.4

# RiTherm 屋内用熱計算

## 絞り込み機能および製品一覧

必要冷却能力

Necessary cooling output (W)

684

| ARTICLE NUMBER        | COOLING OUTPUT | MOUNTING     | QUANTITY | PREVIEW                         |
|-----------------------|----------------|--------------|----------|---------------------------------|
| 1 SK3361500 Blue e    | 0.79 kW        | Wall-mounted | 1        | <a href="#">Climate profile</a> |
| 2 SK3361600 Blue e    | 0.79 kW        | Wall-mounted | 1        | <a href="#">Climate profile</a> |
| 3 SK3184800 Blue e+ S | 0.87 kW        | Wall-mounted | 1        | <a href="#">Climate profile</a> |
| 4 SK3304500 Blue e    | 1.04 kW        | Wall-mounted | 1        | <a href="#">Climate profile</a> |
| 5 SK3304600 Blue e    | 1.04 kW        | Wall-mounted | 1        | <a href="#">Climate profile</a> |

絞り込み機能

Filters

- Mounting
  - Roof-mounted
  - Wall-mounted
- Quantity
  - 1
  - 2
  - 3
- IP protection category
  - 1
- Cooling output
  - 0

Clear filters

適用 キャンセル


製品プレビュー

SK3184800 Blue e+ S

**SK3184800 Blue e+ S**  
Wall-mounted

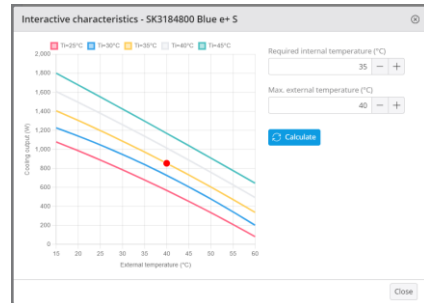
SK Cooling unit Blue e+ S, wall-mounted, 1.0 kW, 110-240 V, 1~, 50-60 Hz, sheet steel, WHD: 400 x 950 x 196 mm

[Learn more](#)



Close

特性曲線



環境プロフィール

Climate profile

SK3184800 Blue e+ S

Efficiency profile: Moderate zone

**Properties**

|                      |                   |                    |      |
|----------------------|-------------------|--------------------|------|
| Total cooling output | Operating voltage | Dimensions         | EER  |
| 1000 W               | 230 V / 50 Hz     | 400 x 950 x 196 mm | 2.40 |

**Climate profile (per year)**

The cost calculation has been made for following workload type: 5 days per week, 8 hours per day, device workload 80%. Energy cost 0.12 EUR. Carbon emission intensity 0.489. Number of units: 1

|                   |           |                  |
|-------------------|-----------|------------------|
| Power consumption | Cost      | Carbon footprint |
| 297 kWh           | 35,60 EUR | 145 kg           |

Close



# RiTherm 屋内用熱計算

## 適用アクセサリーの選定

Accessories

Back to main page

Cooling solution

Enclosure set: Set 1

Selected device: SK3184800 Blue e+ S

Device type: Cooling units

Select accessories

Number of selected accessories: 0 | Clear

| <input type="checkbox"/> | ARTICLE NUMBER | DESCRIPTION                                | PREVIEW                 | QUANTITY |
|--------------------------|----------------|--|-------------------------|----------|
| <input type="checkbox"/> | 3124300        | SK IoT Interface, for networking of...     | <a href="#">Preview</a> | -        |
| <input type="checkbox"/> | 3124400        | SK Temperature sensor, for cooling...      | <a href="#">Preview</a> | -        |
| <input type="checkbox"/> | 3213360        | SK air diverter, for SK 3184. / 3186. /... | <a href="#">Preview</a> | -        |
| <input type="checkbox"/> | 3235600        | Circuit-breaker for single-phase Blu...    | <a href="#">Preview</a> | -        |
| <input type="checkbox"/> | 3235610        | Circuit-breaker for Blue e+ cooling...     | <a href="#">Preview</a> | -        |

RiTherm version  
Frontend: 1.8.0 | Backend: 1.11.4

Back Next

選択された  
熱対策機器

選択された熱対策機器に適用  
するアクセサリーの一覧



# RiTherm まとめ

一般情報・セット概要・パーツリスト

Summary

General information Set summary Order overview

Set 1

Selected device  
SK3184800 Blue e+ S

Selected accessories  
3301612; 3213360;

Enclosure 1: TS 8808500

Dimensions (WxHxD)  
800 x 2000 x 800

Material (K-factor)  
Sheet steel (5.5)

Power dissipation (W)  
500

Additional covering  
Floor standing

① Rittal cannot assume any liability for the calculation, dimensioning and selection.

Back Download documentation Save calculation to project

RiTherm version  
Frontend: 1.8.0 | Backend: 1.11.4

ファイル形式

Format

- .pdf
- .pdf
- .docx
- .xml
- .html

ダウンロード

Download documentation

Summary

Download the summary in one of the following formats:

File name: New calculation\_20240412\_031434\_summary

Format: .pdf

Download

Download component list

Download IEC61439 documentation

プロジェクトへの保存\*

Create new project

Please enter project information in order to proceed.

Project data

Project name: [ ] Description: [ ] Project number: [ ]

Additional information

Project manager: [ ] Year of manufacture: [ ] Manufacturer: [ ]

Company: [ ] Creator: Name: [ ] Customer: Name: [ ]

End customer: Name: [ ] Installation location: [ ] Contact person: [ ]

Contact information

Contact information: [ ]

Save Project Close

\*プロジェクトに保存するには、EPLANアカウントでログインする必要があります。

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# RiTherm ダウンロードファイル

## 標準に準拠したドキュメント

### RiTherm Summary

Project: -  
Company: -  
Contact person: -  
Contact info: -

Calculation: New calculation



#### Ambient parameters

|  |       |
|--|-------|
| Minimum temperature outside the enclosure Ta | 0 °C  |
| Maximum temperature outside the enclosure Ta | 40 °C |
| Maximum temperature inside the enclosure Ti  | 35 °C |
| Mains voltage                                | 230 V |
| Frequency                                    | 50 Hz |

#### Enclosure set: Set 1

|                           |                            |
|---------------------------|----------------------------|
| Enclosure no. 1           | TS 8808500                 |
| Dimensions (W x H x D)    | 800 mm x 2,000 mm x 800 mm |
| K-Factor of the enclosure | 5.5                        |
| Power dissipation         | 500 W                      |

#### Climate control calculation

|   |          |
|---|----------|
| Average temperature without climate control | 53.66 °C |
| Heat loss                                   | 500 W    |
| Heat exchange across surface                | -183 W   |
| Heat to be dissipated                       | 683 W    |

#### Order overview

---

##### Measures to maintain the temperature

|                 |                     |
|-----------------|---------------------|
| Article number  | SK3184800 Blue e+ S |
| Device type     | Cooling unit        |
| Device mounting | Wall-mounted        |
| Quantity        | 1                   |

#### Accessories

| Article number | Quantity | Product description                              |
|----------------|----------|--|
| 3301612        | 1        | SK Condensate hose, Ø 12 x 2 mm, length 10 m     |
| 3213360        | 1        | SK air diverter, for SK 3184. / 3186. / 3187.xxx |

Rittal can not assume any liability for the calculation, dimensioning and selection.

1 / 1  
4/12/2024

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FRIEDHELM LOH GROUP

一般情報(温度条件、電源仕様)

筐体情報(サイズ、発熱量)

熱計算(必要冷却能力)

選定機器(熱対策機器品番、アクセサリ)

### 3. 屋外用熱計算

※ 屋内用熱計算と共通する部分は省略されます。

# RiTherm 屋外用熱計算

盤外・盤内温度条件の記入

平均風速

盤外最低・最高気温

**New calculation** Back to home

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

|                                      |                                      |  |
|--------------------------------------|--------------------------------------|--|
| Calculation name<br>New calculation  | Average wind speed (m/s)<br>3        | Altitude above sea level<br>0 to 500 m         |
| Min. ambient temperature (°C)<br>10  | Max. ambient temperature (°C)<br>40  | Max. global radiation<br>1120 W/m <sup>2</sup> |
| Min. internal temperature (°C)<br>25 | Max. internal temperature (°C)<br>35 |  |

**情報入力** (next to Max. ambient temperature)

**情報入力** (next to Max. internal temperature)

**盤内最低・最高温度**  
(最低・最高許容／希望温度)

**Create enclosure sets**  
Start by choosing the type of configuration. You can add up to 10 sets by clicking the plus icon.

Select type of configuration

RiTherm version  
Frontend: 1.9.3 | Backend: 1.14.5

Calculate

# RiTherm 屋外用熱計算

筐体情報の記入(その他筐体の場合)

New calculation Back to home

1 Calculation properties  
2 Calculation  
3 Outcome  
4 Devices  
5 Accessories  
6 Summary

Selected enclosure 1 ⓘ

Additional covering type  
 Floor-standing  Roof covered  Floor-standing and roof covered  None

Enclosure model  
Custom enclosure

Dimensions in mm (WxHxD)  
800 2000 600 ⓘ

Material and K-factor  
Sheet steel ▼ 5,5 ⓘ

Wall type  
 Double-walled

Power dissipation (W) **情報入力**  
500

Calculate

RiTherm version  
Frontend: 1.9.3 | Backend: 1.14.5

一重壁 / 二重壁

盤内発熱量の記入

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# RiTherm 屋外用熱計算

## 入力したパラメータと空調結果の概要

空調が必要であることを  
示す色付マーキング

ヒーターが必要であることを  
示す色付マーキング

The screenshot displays the 'Outcome' section of the RiTherm software. On the left, a navigation menu lists: 1 Calculation properties, 2 Calculation, 3 Outcome (highlighted), 4 Devices, 5 Accessories, and 6 Summary. The main content area is titled 'Outcome' and includes a 'Back to home' button. Under 'Set 1' (Single enclosure), it shows 'Simulated temperature without climate control' as 68 °C with a warning icon. Below this, 'Min. ambient temperature' is 10 °C with a warning icon. 'Max. internal temperature' is 35 °C and 'Min. internal temperature' is 25 °C. At the bottom, there are input fields for 'Min. internal temperature (°C)' (25), 'Max. internal temperature (°C)' (35), 'Voltage [V]' (230), and 'Frequency [Hz]' (50), along with a 'Calculate' button and an information icon. A red box highlights the 'Voltage [V]' and 'Frequency [Hz]' fields, with the text '情報入力' (Information Input) next to it. Two warning icons at the top right indicate 'Cooling needed' and 'Heating recommended'. A 'Back' button and a 'Next' button are at the bottom right.

空調しない場合の盤内温度

# RiTherm 屋外用熱計算

## 適切な空調ソリューションの概要

屋外用クーラー

ヒーター

The screenshot displays the 'Devices' configuration page in the RiTherm software. The left sidebar shows a navigation menu with six steps: 1. Calculation properties, 2. Calculation, 3. Outcome, 4. Devices (highlighted), 5. Accessories, and 6. Summary. The main content area is titled 'Devices' and includes a 'Back to home' button. It features a configuration section with 'Enclosure set' (Set 1), 'Cooling solution' (SK3304508 UL Type 3R/4 Blue e), and 'Heater' (SK3105400). Below this, there are tabs for 'Cooling' and 'Heating', with 'Heating' selected. A 'Necessary continuous thermal output (W)' field is set to 943. A table lists the selected heaters:

| ARTICLE NUMBER | CONTINUOUS THERMAL OUTPUT | MOUNTING     | QUANTITY | PREVIEW |
|----------------|---------------------------|--------------|----------|---------|
| 1 SK3105400    | 1.6 kW                    | Wall-mounted | 2        |         |
| 2 SK3105390    | 1.2 kW                    | Wall-mounted | 3        |         |

At the bottom, there are input fields for 'Min. internal temperature (°C)' (25), 'Max. internal temperature (°C)' (35), 'Voltage [V]' (230), and 'Frequency [Hz]' (50). A 'Calculate' button is present. The footer shows 'RiTherm version Frontend: 1.9.3 | Backend: 1.14.5' and navigation buttons 'Back' and 'Next'.

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※ ご注意:

本資料および画像は2024年4月現在のものです。

RiThermはクラウドソリューションのため、バージョンアップは自動的に行われます。

お客様はアップデートする必要なく、常に最新バージョンをご利用いただけます。

Thank you.

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