

**Chillventa Specialist Forums 2022**  
**Chillventa Fachforen 2022**

**CONNECTING  
EXPERTS.**





# How to easily select the best product for your application – with The Sabroe Sales and Selection Tools

**Simon Stubkier, Product Manager Sales Tools, Heat Exchangers and Vessels**

**Johnson Controls Denmark**

# Presenter

**Simon Stubkier**

Product Manager

Sales Tools, Heat Exchangers, and Vessels



Working for Johnson Controls since 2013 with a focus on heat exchangers and tools for configuring refrigerant and heat pump systems.



**135** Years  
of innovation experience

**100,000+** Experts globally



**150** countries offering  
a local service from  
**2000** locations



more than  
**8,700** Active Patents

**4+million**  
Customers globally



**\$78** million  
in charitable contributions  
in the past **5 years**



**40+**  
Named in 40+ leading  
sustainability indices

We are in **90%**  
of the world's most  
iconic buildings



Delivering outcomes in

Airports  
Campuses  
Data Centers  
Healthcare  
Hotels  
Life Sciences  
Schools  
Sports & Entertainment



We have delivered over  
**26M** Metric tonnes  
of CO<sub>2</sub> reduction

Over **\$3.9** billion  
Energy savings  
and more than  
**\$2.1** billion  
Operational savings



**316,000+**  
Volunteers Hours



## Solutions built on industry leading products

We are a leading OEM supplier of reciprocating and screw compressors, chillers for standard and low temperature applications, heat pumps, and control systems.

The power behind **your mission**



Food and beverage



Chemical and petrochemical



Utilities



Pharma and healthcare



Distribution and storage



Leisure and sports



High-tech



Other industries







# Sales Tools: Why do we need them?



# Sales Tools: The link between products and client demands



## Sales Tools: Product Selection made Easy

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### Capacity demand

- Cooling: 1250 kW
- Heating

### Temperature demand

- Source: 12°C/7°C
- Sink: 30°C/35°C

### Requirements

- SEPR
- Max 75 kPa dP

# Sales Tools: Product Selection made Easy

File Configure Info Help Special

Select or create Chiller Project  
project title: CHILLVENTA 2022  
**New project!**

Primary side  
refrigerant: R-717 [Define mixture](#)

Evaporator side  
capacity (kW): 1250.0  
inlet temp. (deg.C): 12.0  
outlet temp. (deg.C): 7.0  
brine: WATER 200 [overview](#)  
☒ freezing temperature (deg.C):  
☐ percentage by weight (%):

Condenser side  
inlet temp. (deg.C): 30.0  
outlet temp. (deg.C): 35.0  
brine: WATER 200 [overview](#)  
☒ freezing temperature (deg.C):  
☐ percentage by weight (%):

Chiller selection completed

Total disp. [XML disp.](#)

General  
chiller type: **PAC**  
**CHILLPAC**  
**SABLIGHT**  
[Info](#)  
[Measures](#)  
max. no. of chillers: 1  
tolerance +/- (%): 1.0

Constraints  
☒ select from all chillers  
☐ select from recip chillers  
☐ select from screw chillers  
☒ line frequency 50 Hz  
☐ line frequency 60 Hz

Selected

Chiller type	No.	Cap.%	remark (truncated)
ChillPAC104S-A	1	21.2	warning(s)
ChillPAC104L-A	1	26.9	warning(s)
ChillPAC104E-A	1	27.7	warning(s)
ChillPAC106S-A	1	32.1	comment(s)
ChillPAC106L-A	1	40.8	comment(s)
ChillPAC106E-A	1	41.4	comment(s)
ChillPAC108S-A	1	42.3	comment(s)
ChillPAC108L-A	1	54.0	comment(s)
ChillPAC108E-A	1	55.6	comment(s)
ChillPAC112S-A	1	64.1	comment(s)
ChillPAC112L-A	1	80.7	comment(s)
ChillPAC112E-A	1	82.7	comment(s)
ChillPAC116S-A	1	84.8	comment(s)
ChillPAC24-A	1	3.3	comment(s)
ChillPAC26-A	1	13.6	comment(s)
ChillPAC28-A	1	17.7	comment(s)
ChillPAC34-A	1	11.0	comment(s)
ChillPAC36-A	1	15.6	comment(s)
ChillPAC38-A	1	20.5	warning(s)

[Select](#) [COMP1](#) [Print](#)



BY JOHNSON  
CONTROLS

## Sabroe

### Refrigeration Plant Computation

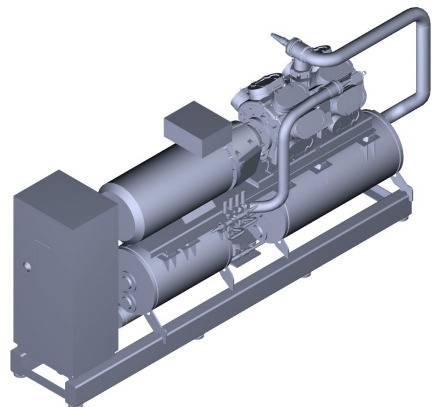
Version 32.51

File	: ChillPAC_116	Ref	: JDCE	Page	: 6
Date	: 2022/09/22	Time	: 08:43:56		
User	: JCI - HOLME - R&D				
Prog	: COMP1/004504	Print	: def. not found		

#### ChillPAC UNIT DATA - ChillPAC116LV-A

plant load percentage	100.0	%
plant cooling capacity	1405.0	kW
plant heating capacity	1643.2	kW
total shaft power consumption	252.1	kW
total line power consumption	0.0	kW
shaft cooling power ratio	5.57	
shaft heating power ratio	6.52	
line cooling power ratio	0.00	
line heating power ratio	0.00	

unit approx. refrigerant charge	54.	kg
unit approx. evaporator brine/water charge	112.	kg
unit approx. condenser water charge	72.	kg
number of vibration dampers	6	
chiller unit expansion valve	1 x HFI-070FD	
unit expansion valve load	61.3	%
Sound level (max)	*	dB(A)





**PORT CONFIGURATION**

H11-CT1-P1

HOT SIDE

Temperature In 50 °C Flow In kg/s Pressure In bar

Temperature Out 60 °C Capacity 750 kW

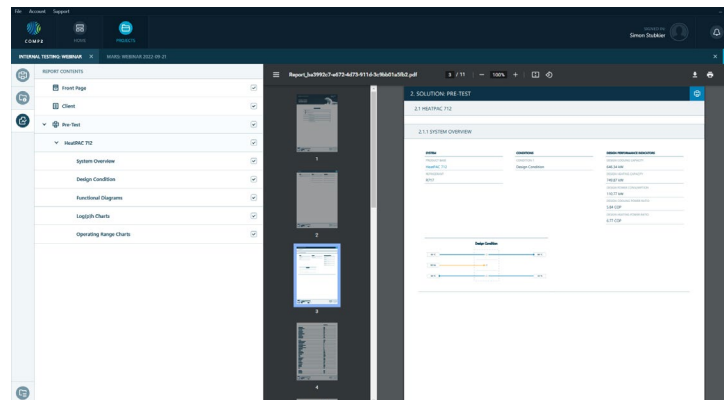
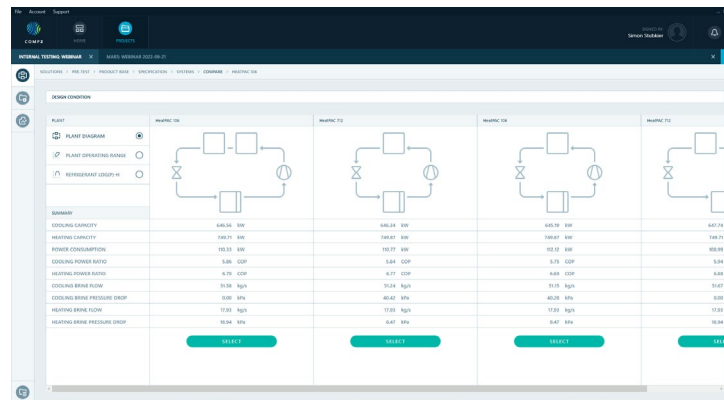
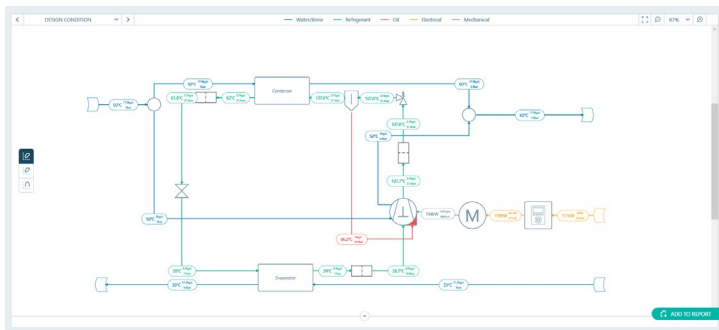
Frequency 50 Hz Voltage 400 V

COLD SIDE

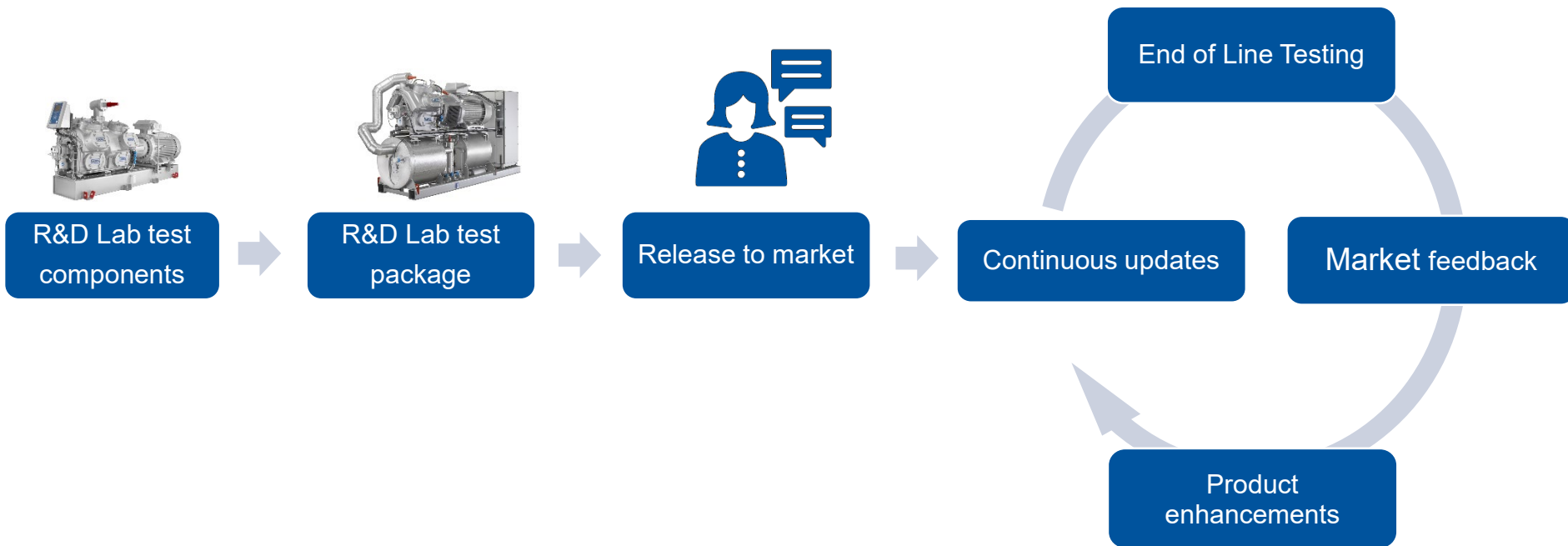
Temperature Out 30 °C Capacity kW

Temperature In 33 °C Pressure In 5 bar Flow In kg/s

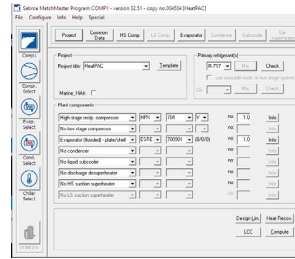
BACK Reset diagram CONFIGURE PORTS DONE



## Inhouse software team, R&D test center and EOL test center



# Where did we start and where are we heading?



```
Directory of C:\Minion
08/14/2023 08:52 AM <DIR> .
08/14/2023 08:52 AM <DIR> ..
10/02/2019 02:13 PM <DIR> .adms
08/17/2023 08:28 PM <DIR> appcompnt
08/16/2023 08:52 AM <DIR> appswitch
08/03/2023 02:04 PM <DIR> AppHealthness
08/17/2023 02:06 PM <DIR> assembly
08/14/2023 08:52 AM <DIR> beavior
08/17/2023 10:12 PM 77,824 bfrc.exe
12/07/2019 03:01 PM <DIR> Boot
10/07/2019 02:06 PM <DIR> Branding
08/16/2023 06:56 AM <DIR> Chetapp
10/07/2019 03:06 PM <DIR> Containers
08/17/2023 07:06 AM <DIR> CUC
08/17/2023 10:38 PM <DIR> Cursors
12/07/2019 03:01 PM <DIR> debag
08/02/2023 07:53 AM <DIR> diagnostics
12/07/2019 03:28 PM <DIR> digltag
08/17/2023 08:02 PM <DIR> 48,806 dmsl1.log
08/17/2023 02:03 PM <DIR> 4,856 DcInstall.log
08/06/2023 06:22 AM <DIR> dm2
1986-198622 06:54 AM 4,842,904 evolverp.exe
```



## Want to know more? Visit us at booth 329 in hall 7

### **Specialist forum: Wed 11-11:20 Hall 7A Booth 7A-616**

Refrigeration is driving our civilization, but the new world requires a new environmental destination

### **Specialist forum: Thu 11:40-12 Hall 7A Booth 7A-616**

How you can use digitalization in industrial refrigeration to reduce carbonization and total cost of ownership

### **Specialist forum: Wed 15-15:20 Hall 4A Booth 4A-401**

Driving decarbonization with Sabroe heat pumps

### **Specialist forum: Wed 11:40-12 Hall 9 Booth 9-550**

District heating with R-717 heat pumps using river water



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