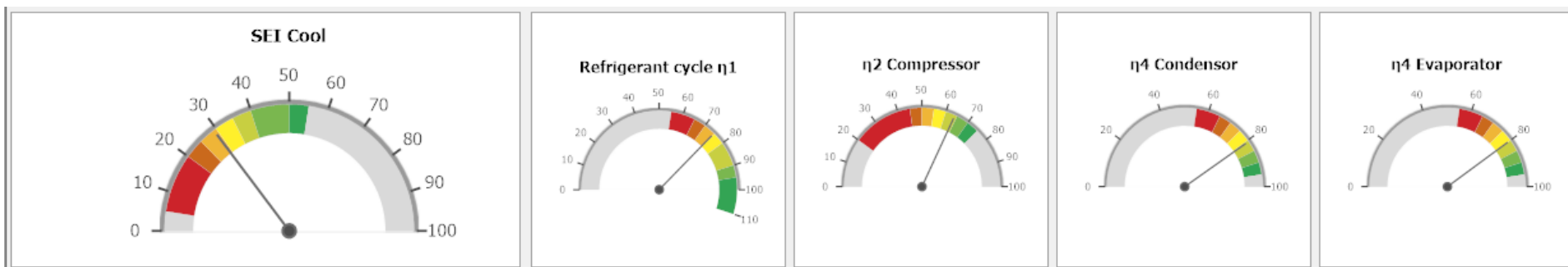




New ClimaCheck *onsite software version 5*

Welcome to the intro of ClimaCheck onsite version 5.



Klas Berglöf, ClimaCheck

klas@climacheck.com



ClimaCheck onsite ver 5

News

There are many updates greatly enhancing the visualisation of the information.

1. **Dashboard** - for SEI with summary for report.
2. **Enhanced graph functions** - with marker and zoom
3. **Enhanced flow chart** – language, unit selection, indicators
4. **System info** input – including selection of SEI configuration
5. **Language handling** in software and templates
6. **Handling of SI and IP units** through one selection in Workbook
7. **Notes** - “global” notes in multiple languages
8. **Updated Refrigerant library**
9. **WiFi and LAN communication** to ClimaCheck PA ProIII

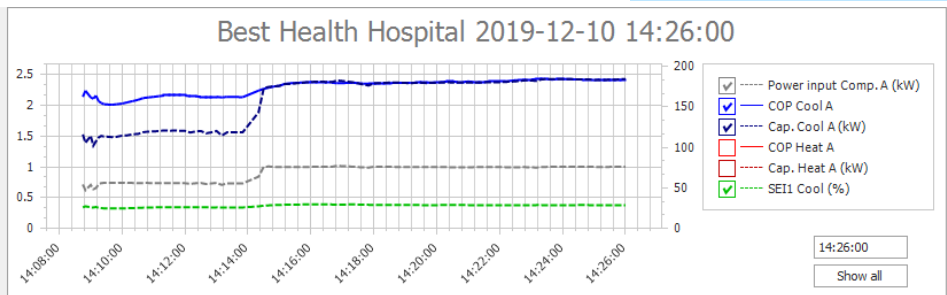
New Dashboard

Visualisation and complete re

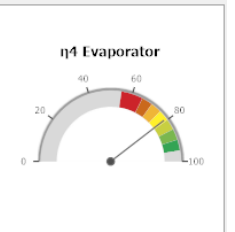
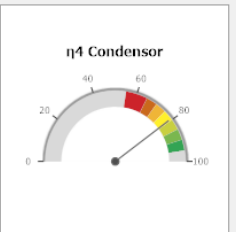
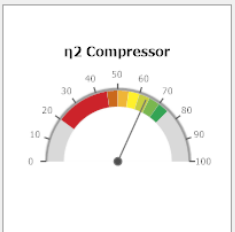
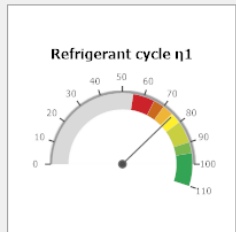
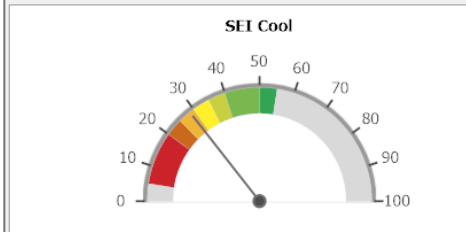
There are many updates greatly enhancing the visualisation of the information.

System Info

System Info :	
Tested Equipment	Best Health Hospital
System type	1 Chiller watercooled water/water (avg./avg.) ...
Manufacturer	SuperChill XRT200
Compressor manufacturer	AMP Semi
Swept Volume (m3/h)	600
Evaporator manufacturer	Alfa Laval DE
Condenser manufacturer	Tecno C300
Expansionvalve manufacturer	Danfoss TKE
Refrigerant	R134A
<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C	



Stability



Performance

SEI1 Cool (%)	28.7
Refer. Temp. Warm A (°C)	0
Refer. Temp. Cold A (°C)	10
Press. Ratio A	5
Cap. Cool A (kW)	184.2
Cap. Heat A (kW)	254.7
Power input Comp. A (kW)	75.9

Refr cycle Effic (%)	75.8
Ref Evap Mid point A (°C)	0.3
Ref Cond Mid point A (°C)	54.7
Press. Ratio A	5
Super heat A (K)	7.3
Sub cool total A (K)	4.1

Comp Isen. eff** A (%)	63.7
Ref Evap Mid point A (°C)	0.3
Ref Cond Mid point A (°C)	54.7
Press. Ratio A	5
Ref Comp A out (°C)	80.9
Power input Comp. A (kW)	75.9

Cond Effic (%)	79.4
Sec. Warm Cond A in (°C)	40.6
Sec. Warm Cond A out (°C)	46.4
Sec. Warm Cond A dT (K)	5.8
SecW Cond A Flow (m3/h)	37.8
Ref Cond Mid point A (°C)	54.7
Appr. Cond - SecW out (K)	8.3
Ref Cond A out (°C)	50.6
Sub Cool Cond A (K)	4.1
Cap. Cond A (kW)	254.7

Evap Effic (%)	79.3
Sec. Cold Evap A in (°C)	10.6
Sec. Cold Evap A out (°C)	9.5
Sec. Cold Evap A dT (K)	1.1
SecC Flow Evap A (m3/h)	144
Ref Evap Mid point A (°C)	0.3
Appr. SecC out - Evap (K)	9.2
Ref Evap A out (°C)	7.6
Super heat Evap A (K)	7.3
Cap. Cool Evap A (kW)	184.2

Maintenance protocol




System info

Entered at start-up – selected info shown in dashboard – graphs – flow chart and tables

System Info :	
Tested Equipment	Best Health Hospital
System type	1 Chiller watercooled water/water (avg./avg.) ...
Manufacturer	SuperChill XRT200
Compressor manufacturer	AMP Semi
Swept Volume (m3/h)	600
Evaporator manufacturer	Alfa Lavla DE
Condenser manufacturer	Tecno C300
Expansionvalve manufacturer	Danfoss TKE
Refrigerant	R134A
<input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C	

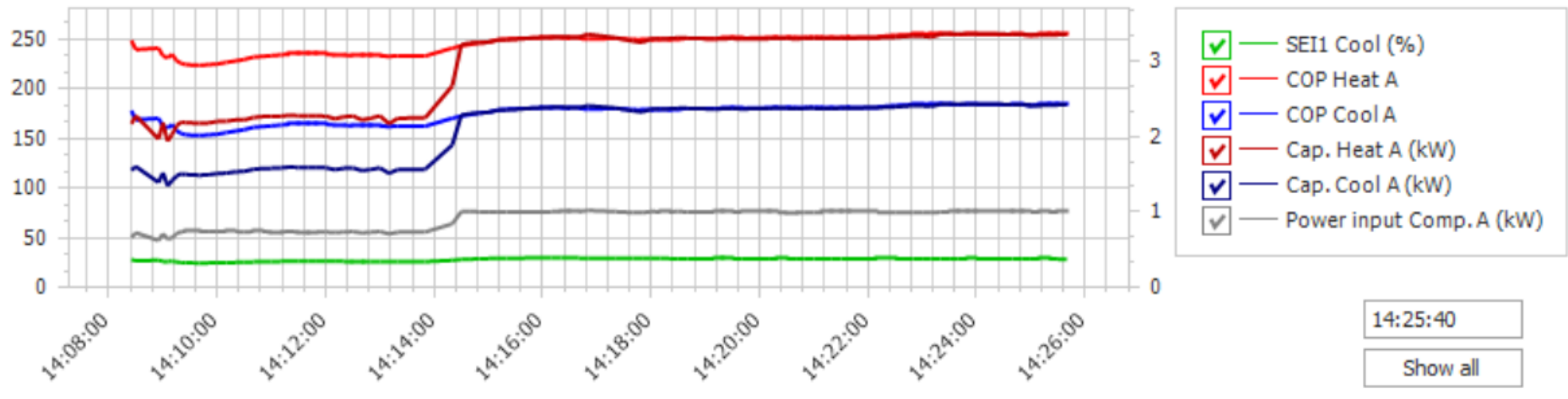
Descript tab

System info entered at start-up

	B	D	E	G	H
2					
3	ClimaCheck Performance Inspection				
5	Protocol		Date	2019-12-05	
6					
7	Owner/User				
8	Address				
9	Contact Person		Tel.		
10					
11	Installed at				
12	Installation address				
13					
14	System Info :				
15	Tested Equipment	Best Health Hospital			
16					
17	System type	1 Chiller watercooled v		2009	
18	Manufacturer	SuperChill	Model	XRT200	
19	Compressor manufacturer	AMP	Model	Semi	
20	Swept Volume (m3/h)	600			
21	Evaporator manufacturer	Alfa Lavla	Model	DE	
22	Condenser manufacturer	Tecno	Model	C300	
23	Expansionvalve manufacturer	Danfoss	Model	TKE	
24	Refrigerant	R134A	Amount		
25					

New Dashboard Graph

Best Health Hospital 2016-01-11 14:25:40



Marker to show values in graph

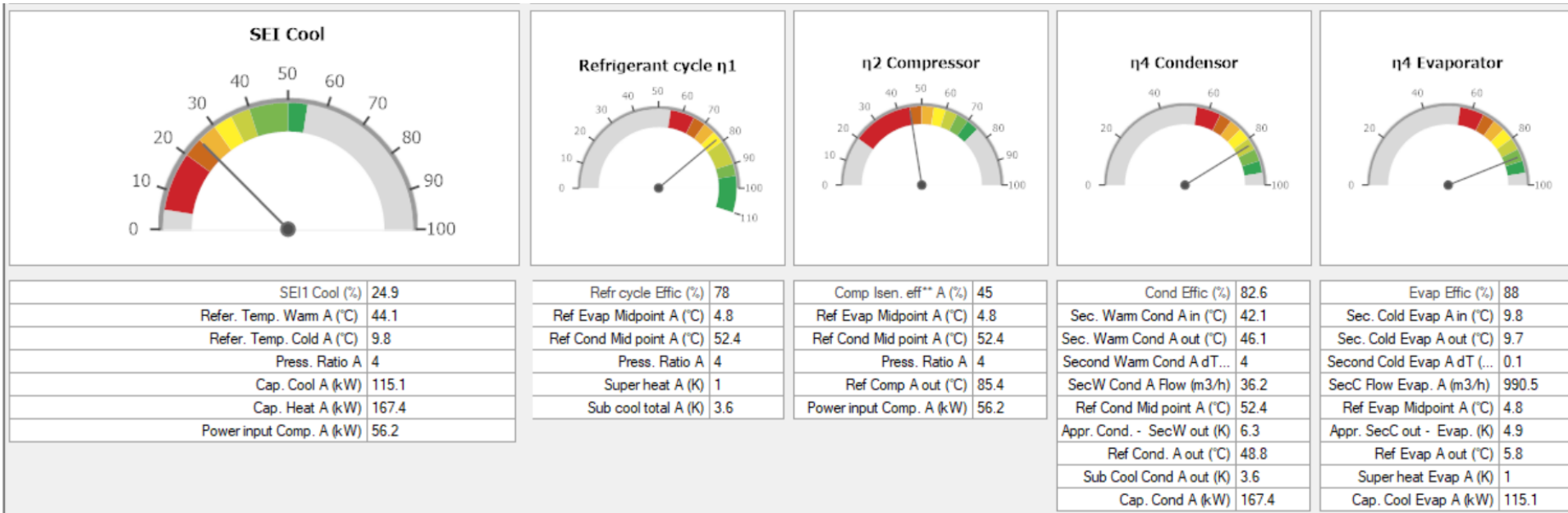
Select time stamp in graph – show in Dashboard

Tick/untick values to show

For multiple circuits show circuit A – B - C

New Dashboard – “performance meters”

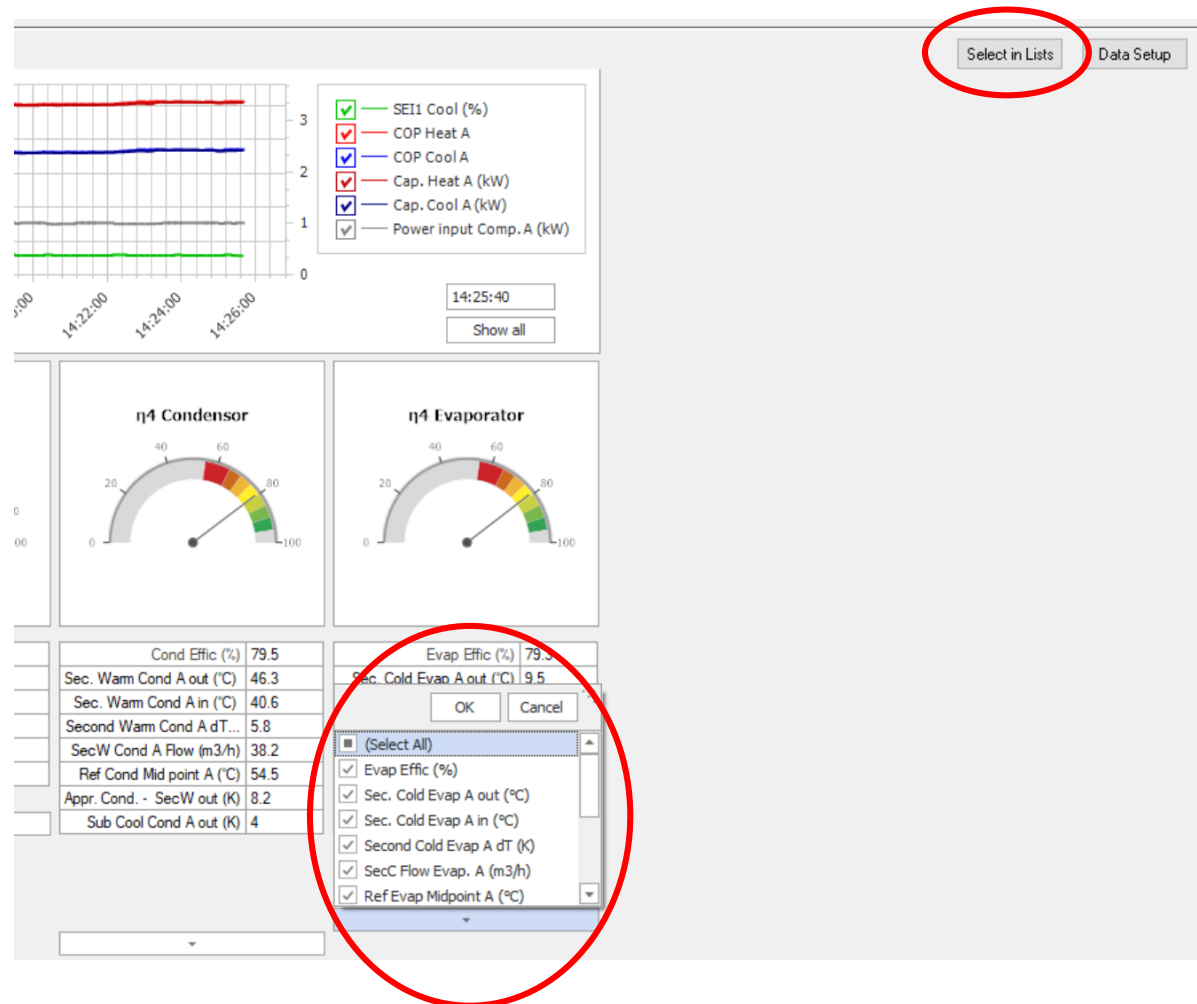
Visualisation and complete report



Select What variables to be shown

New Dashboard

Customise list of values



Select in list > tick what you want to see

New Dashboard

Customise what you want to see

Dashboard setup

Variable	Name	SEI list	O	Recycle...	O	Compr...	O	Conde...	O	Evapora...	O	In C...	Right Y...	Cha...	Color
CC_EP_Comp_?	Power input Comp. ? (kW)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solid	Grey
CC_RCOP_Cool_?	COP Cool ?	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Solid	Blue
CC_RCap_Cool_?	Cap. Cool ? (kW)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solid	Dark Blue
CC_RCOP_Heat_?	COP Heat ?	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Solid	Red
CC_RCap_Heat_?	Cap. Heat ? (kW)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solid	Green
CC_SEI1_Cool_SP	SEI1 Cool (%)	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solid	Light Green
CC_TT_Indoor	Indoor temp. (°C)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue
CC_TT_Indoor_F	Indoor temp. (°F)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue
CC_RhT_Indoor	Indoor rel. Hum (%)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue
CC_TT_Outdoor	Outdoor temp (°C)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue
CC_TT_Outdoor_F	Outdoor temp (°F)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue
CC_RhT_Outdoor	Outdoor rel. Hum (%)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	Solid	Blue

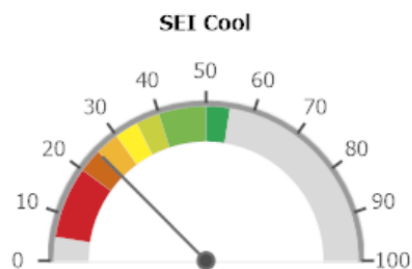
Settings for IP Units Reset to default Save as default OK

Refr cycle Effic (%)	75.8	Comp Isen. eff** A (%)	63.2	Cond Effic (%)	79.5	Evap Effic (%)	79.3
Super heat A (K)	7.2	Ref Comp A out (°C)	81	Sec. Warm Cond A out (°C)	46.3	Sec. Cold Evap A out (°C)	9.5
Sub cool total A (K)	4	Ref Evap Midpoint A (°C)	0.3	Sec. Warm Cond A in (°C)	40.6	Sec. Cold Evap A in (°C)	10.6
Ref Evap Midpoint A (°C)	0.3	Ref Cond Mid point A (°C)	54.5	Second Warm Cond A dT...	5.8	Second Cold Evap A dT (...)	1
Ref Cond Mid point A (°C)	54.5	Press. Ratio A	5	SecW Cond A Flow (m3/h)	38.2	SecC Flow Evap. A (m3/h)	154
Press. Ratio A	5	Power input Comp. A (kW)	76.3	Ref Cond Mid point A (°C)	54.5	Ref Evap Midpoint A (°C)	0.3
				Appr. Cond. - SecW out (K)	8.2	Appr. SecC out - Evap. (K)	9.2
				Sub Cool Cond A out (K)	4	Super heat Evap A (K)	7.2

Save as your own template

New Dashboard

SEI and sub efficiencies with KPIs



Refrigerant cycle η_1



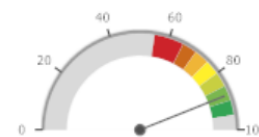
η_2 Compressor



η_4 Condensor



η_4 Evaporator



SEI1 Cool (%)	24.9
Refer. Temp. Warm A (°C)	44.1
Refer. Temp. Cold A (°C)	9.8
Press. Ratio A	4
Cap. Cool A (kW)	115.1
Cap. Heat A (kW)	167.4
Power input Comp. A (kW)	56.2

Refr cycle Effic (%)	78
Ref Evap Midpoint A (°C)	4.8
Ref Cond Mid point A (°C)	52.4
Press. Ratio A	4
Super heat A (K)	1
Sub cool total A (K)	3.6

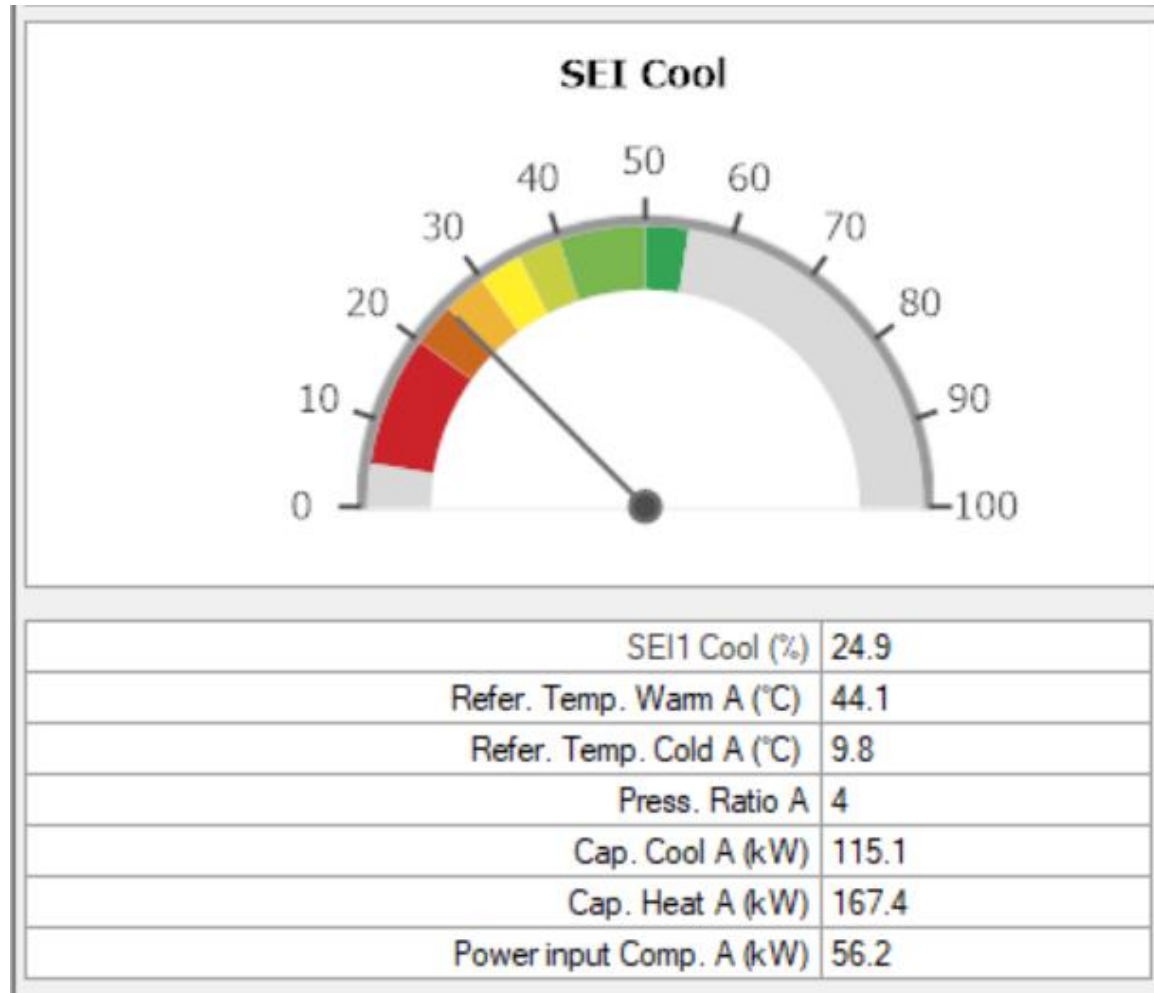
Comp Isen. eff** A (%)	45
Ref Evap Midpoint A (°C)	4.8
Ref Cond Mid point A (°C)	52.4
Press. Ratio A	4
Ref Comp A out (°C)	85.4
Power input Comp. A (kW)	56.2

Cond Effic (%)	82.6
Sec. Warm Cond A in (°C)	42.1
Sec. Warm Cond A out (°C)	46.1
Second Warm Cond A dT...	4
SecW Cond A Flow (m3/h)	36.2
Ref Cond Mid point A (°C)	52.4
Appr. Cond. - SecW out (K)	6.3
Ref Cond. A out (°C)	48.8
Sub Cool Cond A out (K)	3.6
Cap. Cond A (kW)	167.4

Evap Effic (%)	88
Sec. Cold Evap A in (°C)	9.8
Sec. Cold Evap A out (°C)	9.7
Second Cold Evap A dT (...)	0.1
SecC Flow Evap. A (m3/h)	990.5
Ref Evap Midpoint A (°C)	4.8
Appr. SecC out - Evap. (K)	4.9
Ref Evap A out (°C)	5.8
Super heat Evap A (K)	1
Cap. Cool Evap A (kW)	115.1

New Dashboard

SEI with KPIs



New Dashboard

Sub efficiencies with KPI

Refrigerant cycle η_1



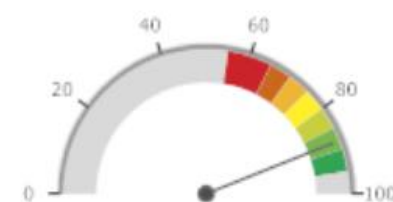
η_2 Compressor



η_4 Condensor



η_4 Evaporator



Refr cycle Effic (%)	78
Ref Evap Midpoint A (°C)	4.8
Ref Cond Mid point A (°C)	52.4
Press. Ratio A	4
Super heat A (K)	1
Sub cool total A (K)	3.6

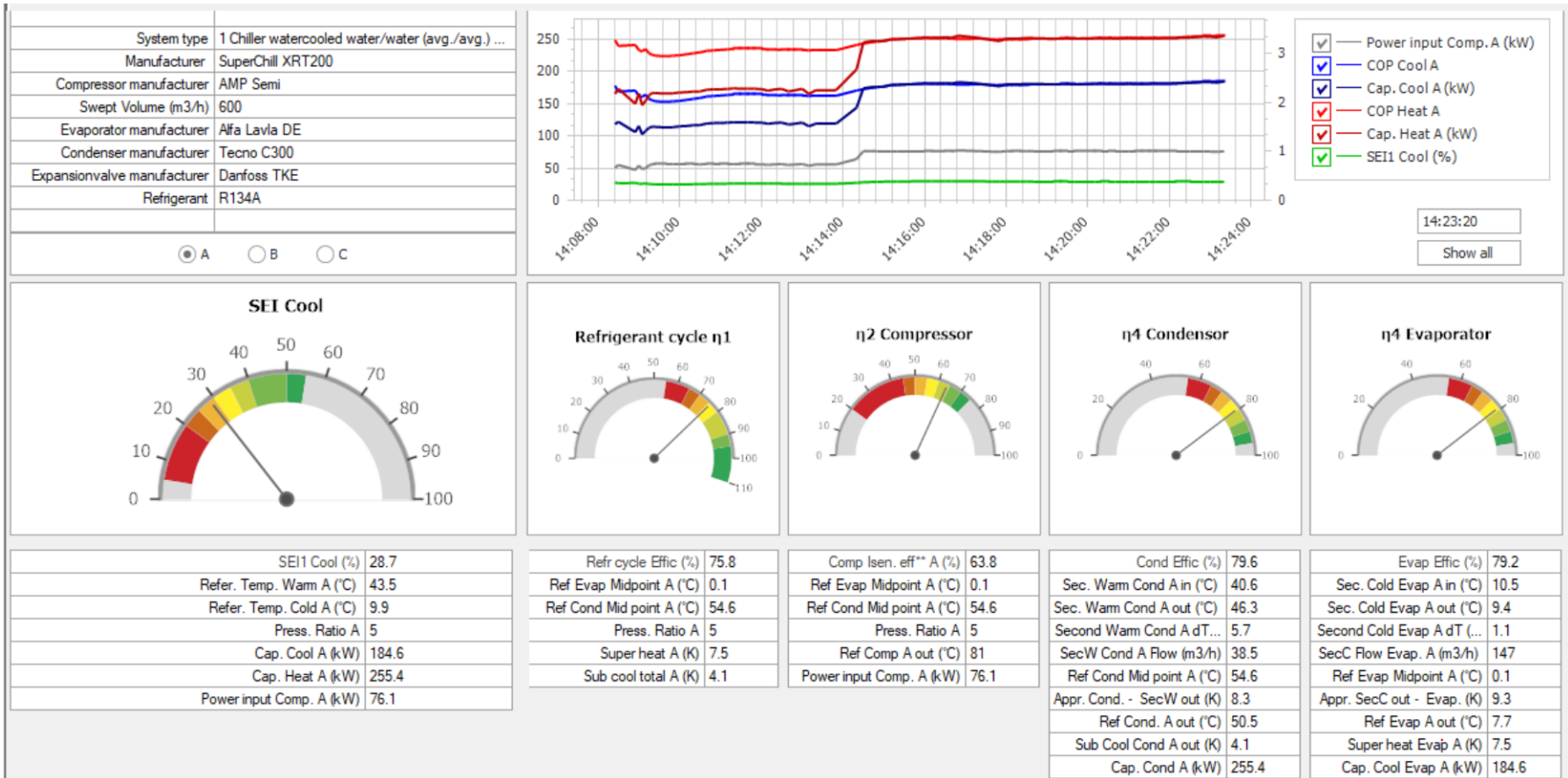
Comp Isen. eff** A (%)	45
Ref Evap Midpoint A (°C)	4.8
Ref Cond Mid point A (°C)	52.4
Press. Ratio A	4
Ref Comp A out (°C)	85.4
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Sub Cool Cond A out (K)	3.6
Cap. Cond A (kW)	167.4

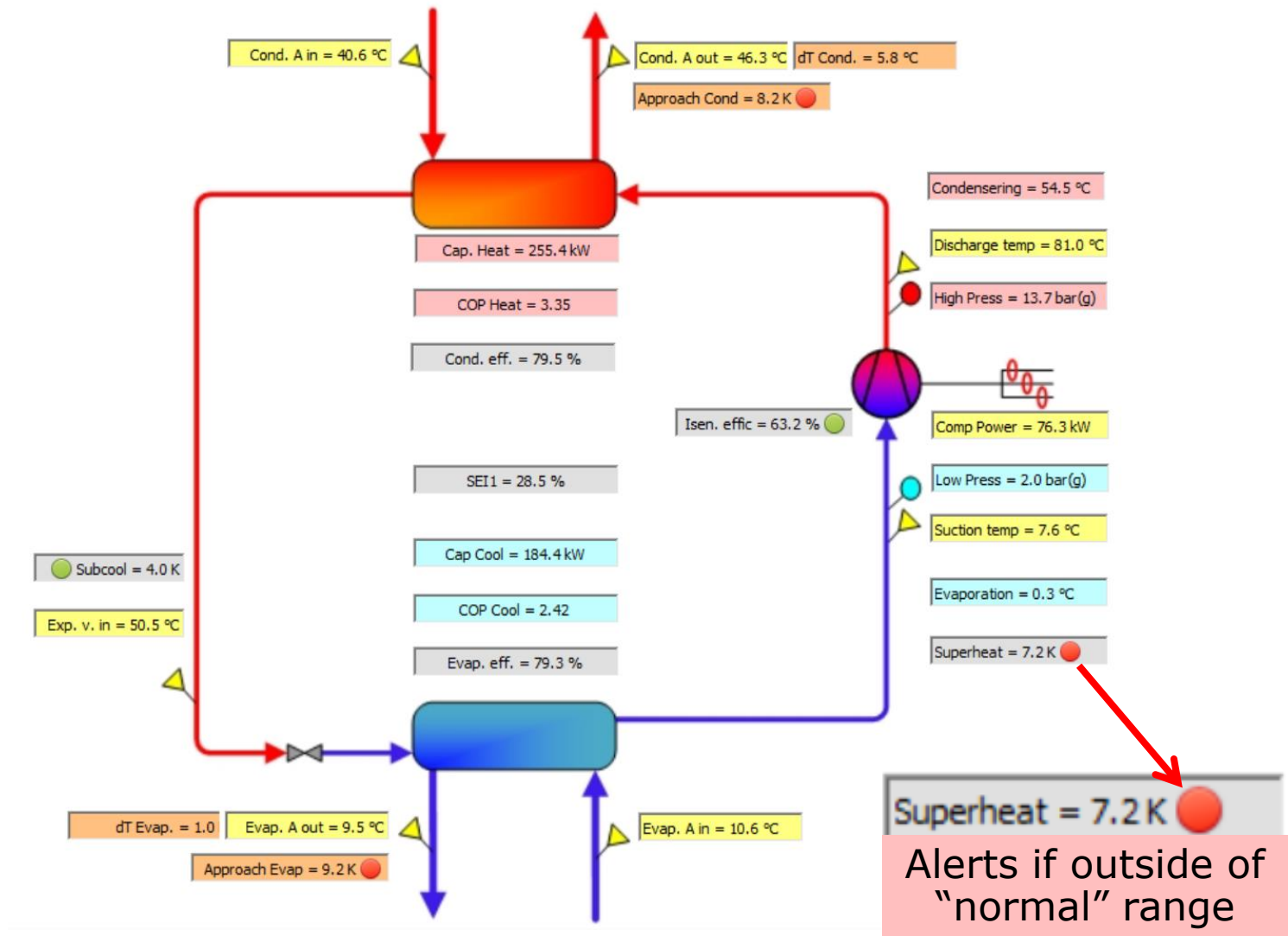
Evap Effic (%)	88
Sec. Cold Evap A in (°C)	9.8
Sec. Cold Evap A out (°C)	9.7
Second Cold Evap A dT (...)	0.1
SecC Flow Evap. A (m3/h)	990.5
Ref Evap Midpoint A (°C)	4.8
Appr. SecC out - Evap. (K)	4.9
Ref Evap A out (°C)	5.8
Super heat Evap A (K)	1
Cap. Cool Evap A (kW)	115.1

New Dashboard

Visualisation and complete report

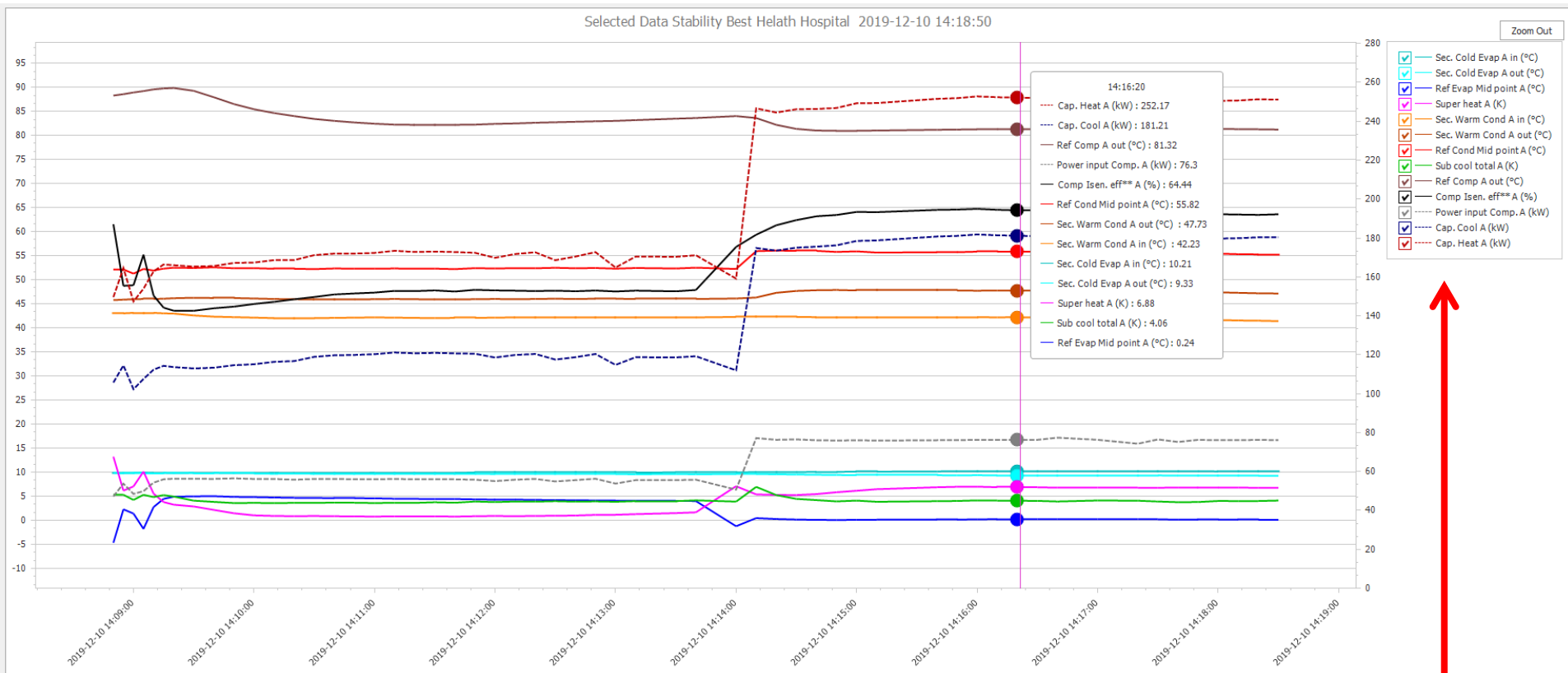


New Flow chart



New Graphs

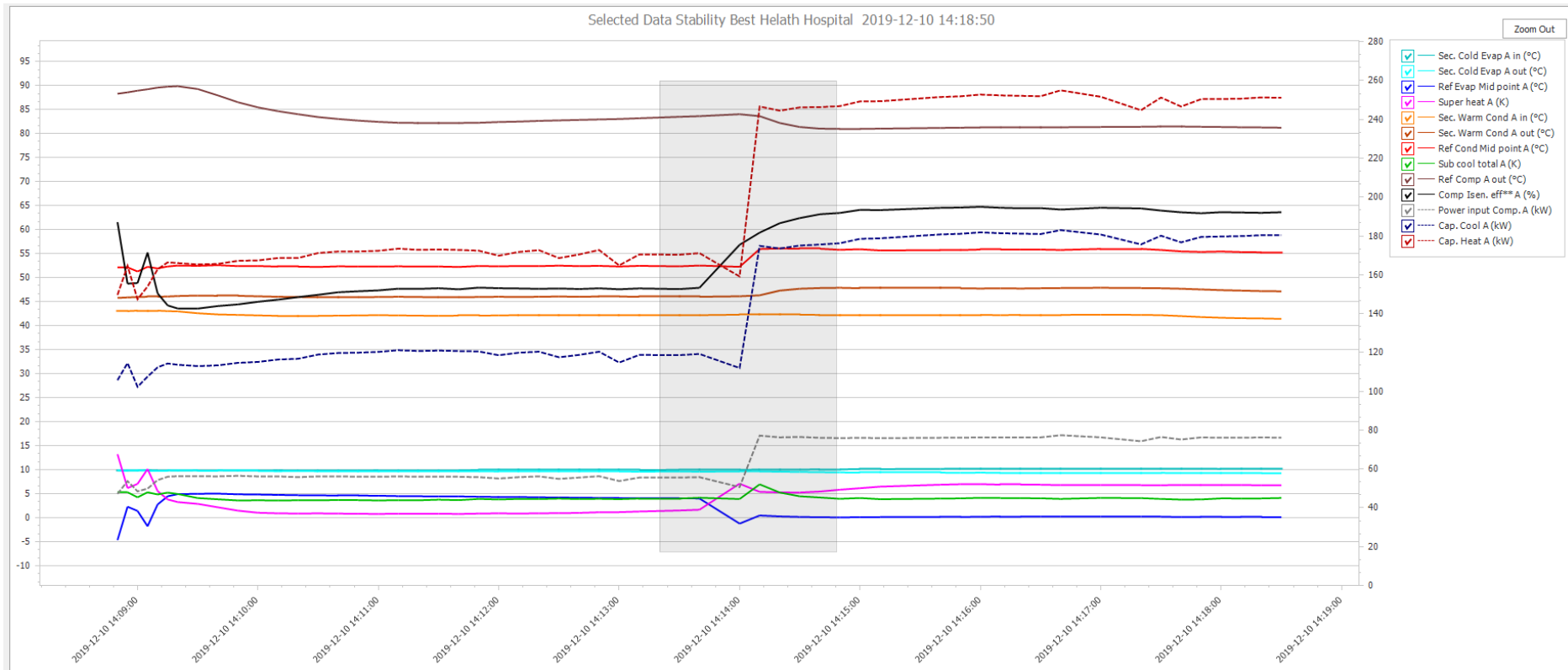
Marker – Zoom – Select



Two Y-axes and tick/untick to select what is shown

New Graphs

Zoom

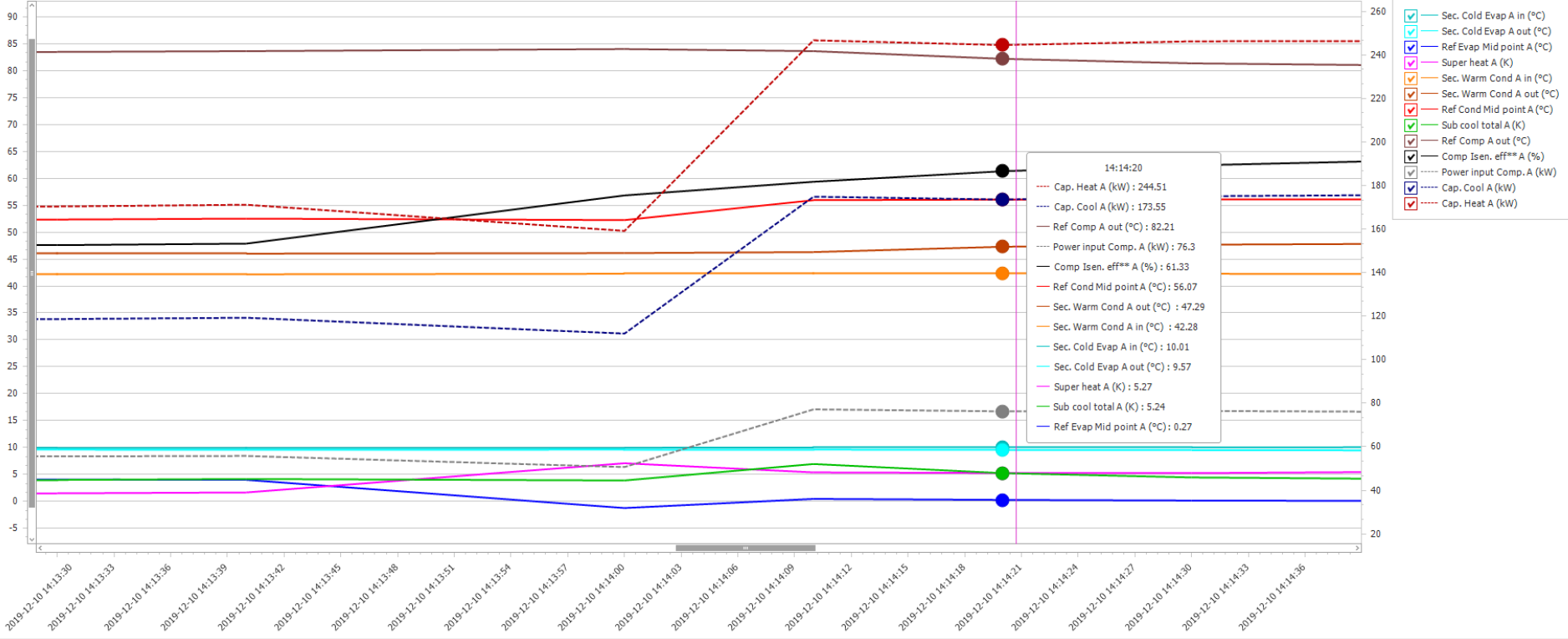


Zoom with Shift + left button

Zoomed in

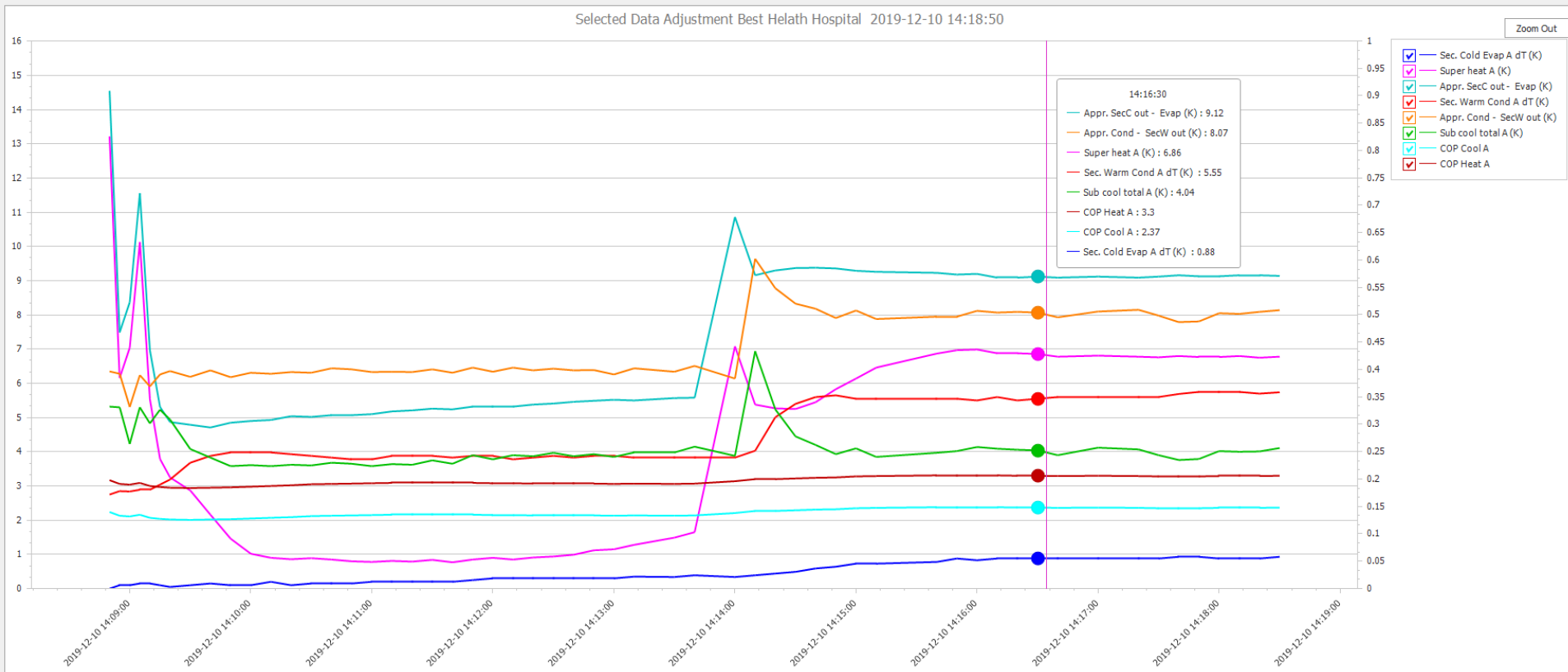
Selected Data Stability Best Helath Hospital 2019-12-10 14:18:50

Zoom Out



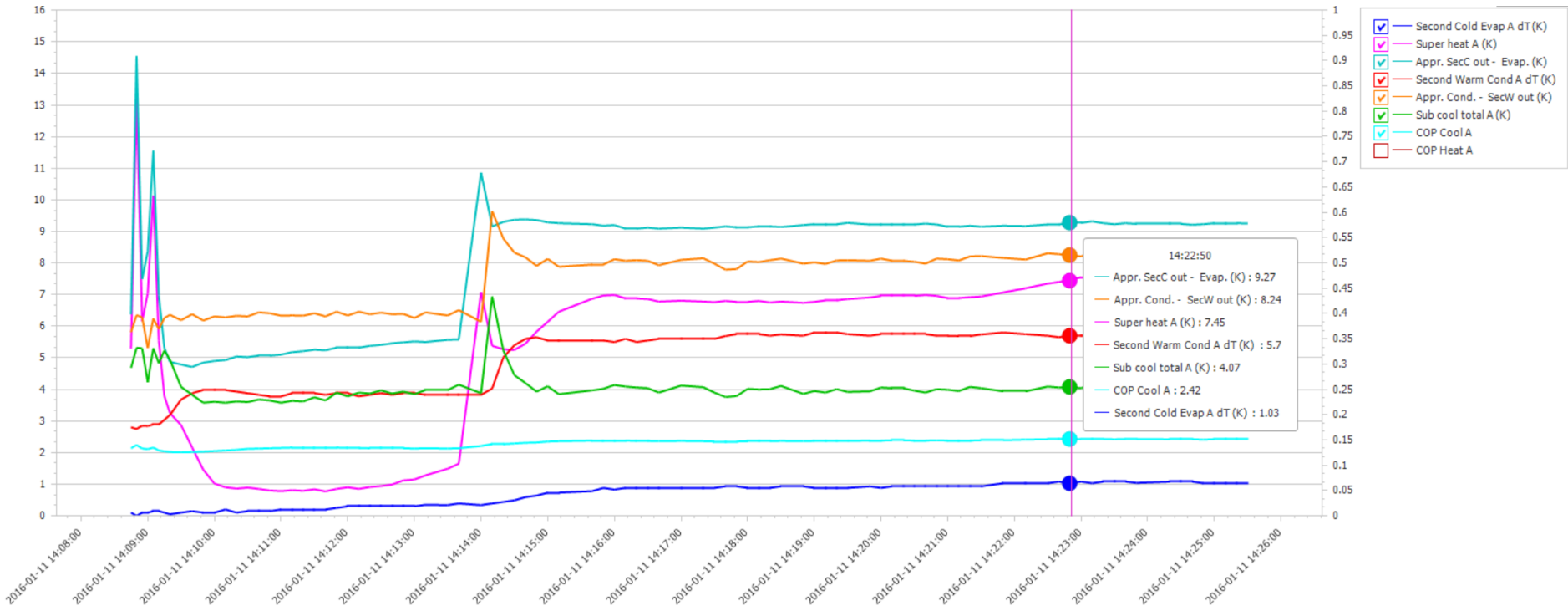
New Graphs

Zoom – move “window”



Zoom with Shift + left button

Graph Adjust



Updated refrigerant data base

AMMONIA	NITROGEN	R12	R125	R170	R290	RE143A
ARGON	OXYGEN	R1216	R1270	R21	R32	RE245CB2
BUTANE	PENTANE	R123	R13	R218	R365MFC	RE245FA2
C12	PROPANE	R1233ZD	R134A	R22	R40	RE347MCC
CO2	PROPYLEN	R1233ZDE	R14	R227EA	R41	WATER
DME	R11	R1234YF	R141B	R23	R600A	
ETHANE	R113	R1234ZE	R142B	R236EA	R717	
HEXANE	R114	R1234ZEE	R143A	R236FA	R718	
ISOBUTAN	R115	R1234ZEEZ	R152A	R245CA	RC318	
METHANE	R116	R124	R161	R245FA	RE134	

AIR	R404A	R407H	R414A	R419B	R424A	R433B	R441A	R449A	R454A	R460B	R510A
DR3	R405A	R408A	R414B	R420A	R425A	R433C	R442A	R449B	R454B	R500	R511A
DR55	R406A	R409A	R415A	R421A	R426A	R434A	R443A	R449C	R454C	R501	R512A
R401A	R407A	R409B	R415B	R421B	R427A	R435A	R444A	R450A	R455A	R502	R513A
R401B	R407B	R410A	R416A	R422A	R428A	R436A	R444B	R451A	R456A	R503	R513B
R401C	R407C	R410B	R417A	R422B	R429A	R436B	R445A	R451B	R457A	R504	R515A
R402A	R407D	R411A	R417B	R422C	R430A	R437A	R446A	R452A	R458A	R507A	
R402B	R407E	R411B	R417C	R422D	R431A	R438A	R447A	R452B	R459A	R508A	
R403A	R407F	R412A	R418A	R422E	R432A	R439A	R447B	R452C	R459B	R508B	
R403B	R407G	R413A	R419A	R423A	R433A	R440A	R448A	R453A	R460A	R509A	

HFO data added and many new mixtures