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ULTRACOOL
Energy efficient chillers

November 2019

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ULTRACOOL – ENERGY EFFICIENT CHILLERS

- High energy efficiency
- Ultimate features
- Total connectivity

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CONTENT

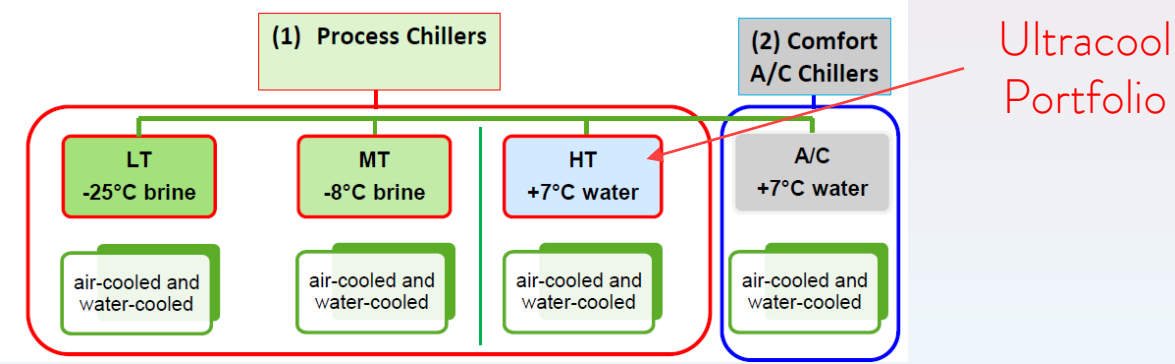
1 Energy efficiency
2 Ultimate features
3 Connectivity
4 Technical data
5 Features – Comparison “New generation“ and “Classic range“
6 Summary – Key buying factors

ENERGY EFFICIENCY

- 2021 EcoDesign ready
- Up to 50% energy savings
- Payback period < 1 year

ENERGY EFFICIENCY
EcoDesign directive

The EcoDesign Directive of the European Parliament, defines limit values for energy efficiency (SEPR values). The values are to be met by High-Temperature (HT) process chillers. This applies to the complete Ultracool portfolio without restrictions.



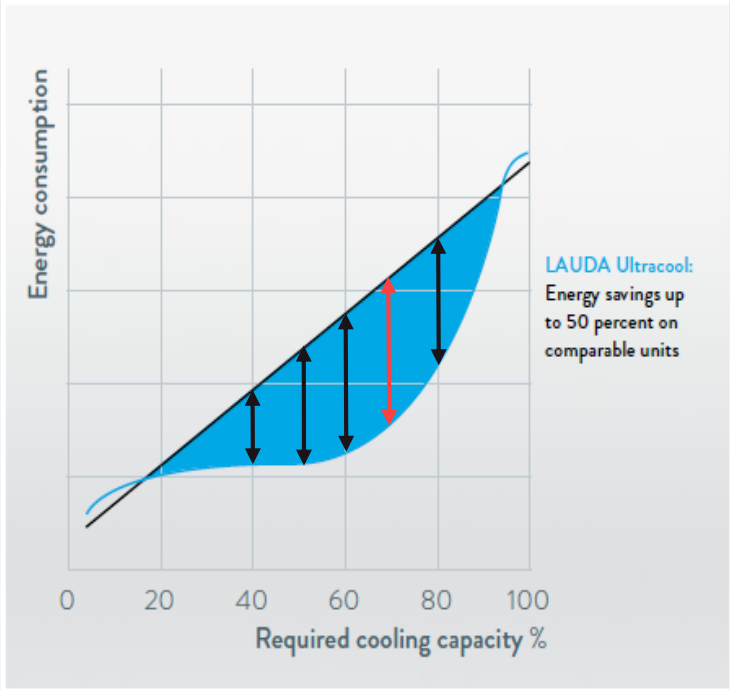
	Cooling capacity	SEPR value from 1 Jan 2018	SEPR value from 1 Jan 2021
Air cooled	< 400 kW	4.5	5.0
Water cooled	< 400 kW	6.5	7.0

SEPR = Seasonal Energy Performance Ratio

ENERGY EFFICIENCY
Energy savings

At frequent **load changes** and **partial load**:

- Up to 50% energy savings (compared to conventional chiller)
- Payback period < 1 year



ENERGY EFFICIENCY

Energy savings – Based on most modern refrigeration technology

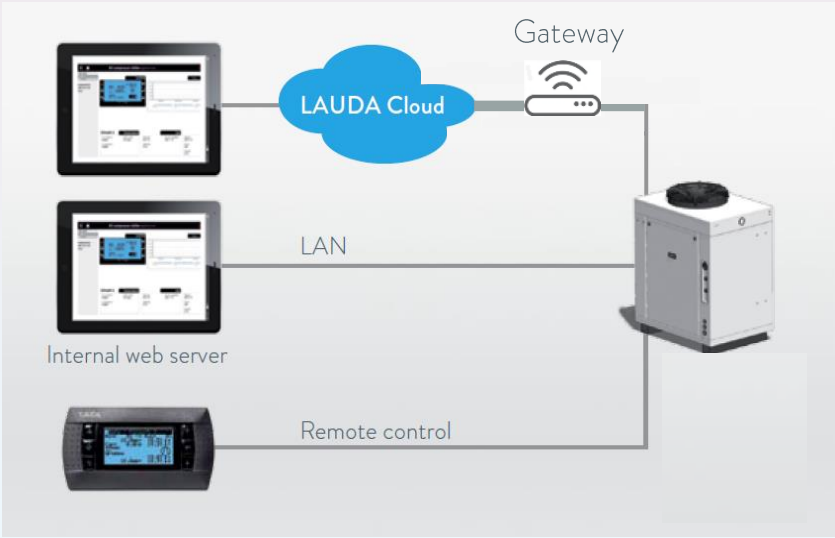
- Variable speed compressor
- Variable speed fan
- Electronic expansion valve
- Microchannel condenser
- Microplates evaporator
- LAUDA software developed to maximize energy efficiency

ULTIMATE FEATURES

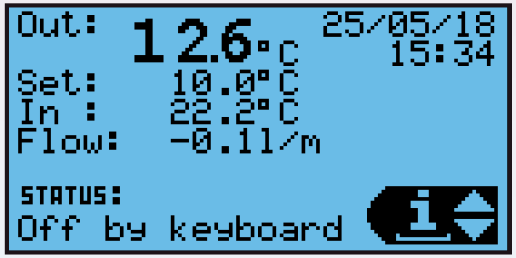
- Reduced footprint and volume up to 38%
- Increased temperature stability up to +/-0,5 K
- Reduced water tank volume up to 80% to minimize installation and maintenance cost
- Extended working temperature range from -10 to +35 °C (instead of -5 to +25 °C)
- Bifrequent power supply as standard (400 V; 3/PE; 50 Hz & 460 V; 3/PE; 60 Hz)
- Variable speed pump option
- Flow meter option

CONNECTIVITY

- Remote LCD control panel (standard)
- Internal webserver to computer or local LAN (standard)
- LAUDA Cloud connectivity (accessory)

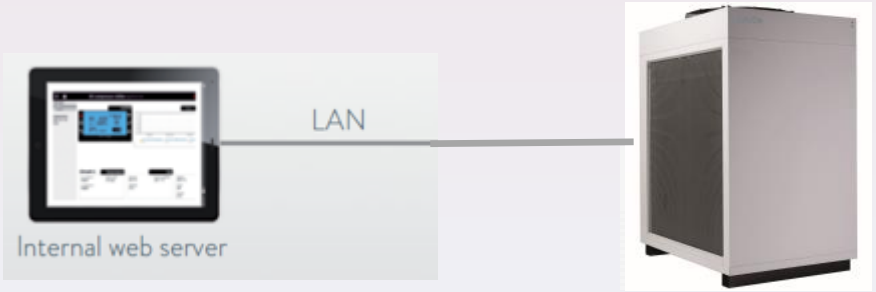


CONNECTIVITY
Remote LCD control panel



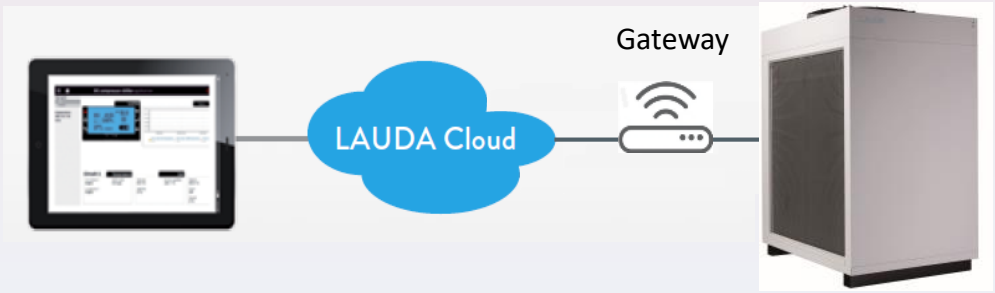
- Complete functionality control
- Ergonomic and user friendly
- 5 m wire connection
- Stand alone and wall mounting possibility

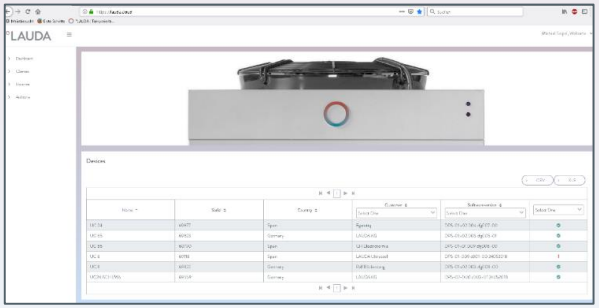
CONNECTIVITY
Internal web server

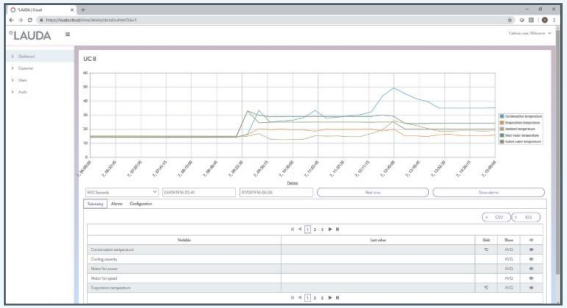


- Connection to computer or internal LAN
- Complete functionality control
- Same user interface as the remote display
- Standard Ethernet connection
- Data capture possibility
- No internet connection required

CONNECTIVITY
LAUDA Cloud



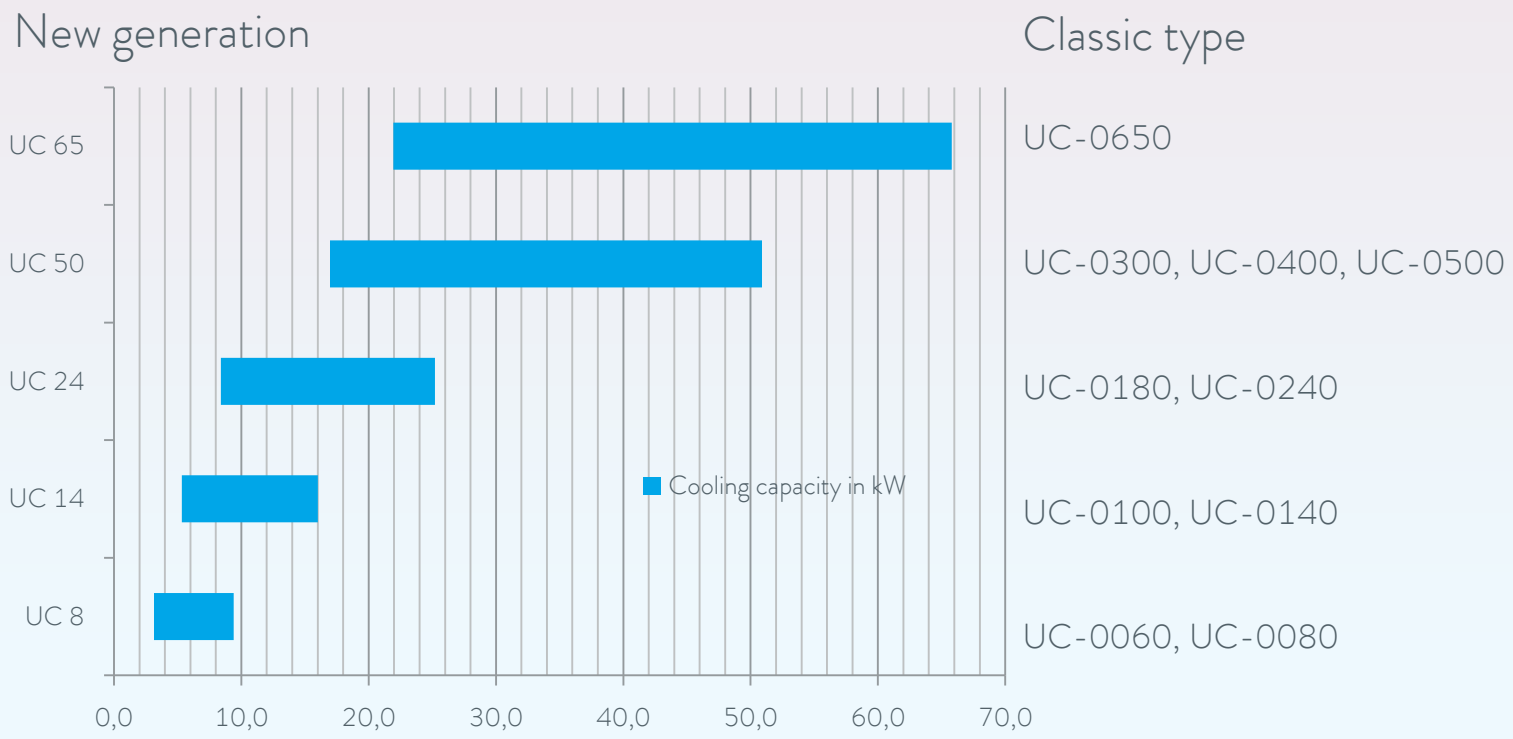




- Gateway for high flexibility
- Storage and evaluation of numerous device parameters
- Support and troubleshooting via remote access from every computer with internet connection
- Software updates possible
- Access level restrictions (customer, service, admin)

TECHNICAL DATA

5 capacity ranges correspond to 10 classic types



TECHNICAL DATA
Common data

	"Classic range"	"New generation"
Types	UC-0080 UC-0140 UC-0240 UC-0500 UC-0650	UC 8 UC 14 UC 24 UC 50 UC 65
Working temperature range	-5 °C...25 °C	-10 °C...35 °C
Temperature stability	+/-2 K	+/-0.5 K
Ambient temperature range	-15 °C...45(50) °C	-15 °C...50 °C
Protection rating	IP 54	IP 54

TECHNICAL DATA

Model types

UC-0080
UC-0140
UC-0240

1490 mm

945 mm

715 mm

UC 8
UC 14
UC 24

1250 mm (UC 14, UC 24)
1280 mm (UC 8)

910 mm

720 mm

	UC-0080	UC 8	UC-0140	UC 14	UC-0240	UC 24
Nominal cooling capacity*	9.3 kW	10.2 kW	14.0 kW	15.8 kW	26.3 kW	24.3 kW
SEPR	3.3	6.4	3.0	6.4	3.5	5.6
Pump pressure max. (50/60 Hz)	4.2/4.1 bar	4.2/6.6 bar	4.2/4.1 bar	4.2/6.6 bar	4.2/4.1 bar	4.2/6.6 bar
Pump flow max. (50/60 Hz)	130/125 L/min	130/167 L/min	130/125 L/min	130/167 L/min	130/125 L/min	130/167 L/min
Volume water tank	100 L	35 L	100 L	35 L	100 L	35 L

*at 25 °C ambient temperature and 10 °C water outlet temperature

TECHNICAL DATA

Model types

UC-0500
UC-0650

UC 50
UC 65

	UC-0500	UC 50	UC-0650	UC 65
Nominal cooling capacity*	48.7 kW	51.2 kW	64.4 kW	66.9 kW
SEPR	3.7	5.4	3.9	5.2
Pump pressure max. (50/60 Hz)	4.7/4.8 bar	4.6/6.8 bar	4.7/4.8 bar	5.0/7.2 bar
Pump flow max. (50/60 Hz)	230/300 L/min	230/300 L/min	420/300 L/min	250/300 L/min
Volume water tank	200 L	210 L	300 L	210 L

*at 25 °C ambient temperature and 10 °C water outlet temperature

FEATURES

Comparison “New generation” and “Classic range”

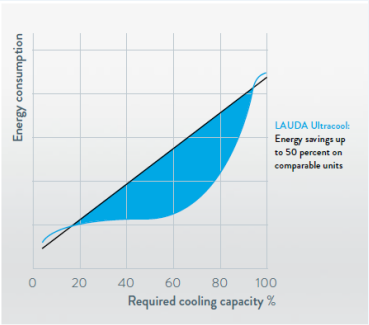
	„New generation“	„Classic range“
Remote control panel	Standard	Option
Speed regulation (for ambient to -15 °C)	Standard	Option
Increased temperature stability (±0.5 K)	Standard	Option
Preheating (by pump)	Standard	Option
Bifrequent power supply	Standard	Option
°C to °F selection	Standard	Option
Operation via internal web server (Ethernet)	Standard	Not available
Variable speed pump	Option	Not available
Cloud connection	Accessory	Not available

SUMMARY

Key buying factors

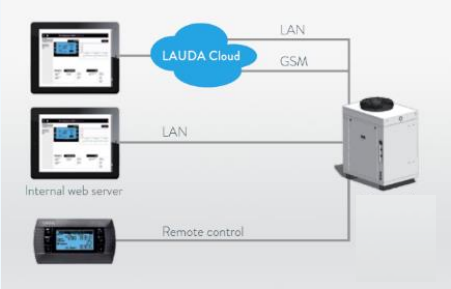
High energy efficiency

- EcoDesign ready
- Energy savings up to 50 %
- Payback period < 1 year



Total connectivity

- Remote LCD panel
- Web server
- LAUDA Cloud (accessory)



Ultimate features

- Reduced footprint and volume
- Increased temperature stability of +/-0,5 K
- Reduced water tank volume up to 80% to minimize installation and maintenance costs
- Extended temperature range from -10 to +35°C
- Bifrequent power supply as standard
- Variable speed pump option
- Flow meter option