200 kW

Brine Model Integr. Pump 3,7 kW

RUAGP561C3R8E

TOSHIBA

150 kW

Water & Brine Model HiHeating Capacity Integr. Pump 2,2 kW **RUAGP421F28E**

200 kW Cooling only Water & Brine Model Integr. Pump 2,2 kW

RUAGP561C28E

180 kW

6

Heating & Cooling Water & Brine Model HiHeating Capacity Integr. Pump 2,2 kW **RUAGP511F28E**



DATA SHEETS 2022/23 UNIVERSAL SMART X

200 KW COOLING ONLY – BRINE, 3,7 KW PUMP Type RUAGP561C3R8E stock model



TECHNICAL KEY FACTS

USX Chiller constructed as universal cold water generator with highest operational and fail-safe reliability. The compact X-design with unique 4-in-1 module concept delivers outstanding Smart Features.

SMART FEATURES



Fits best for

Industry

Process Cooling

✓ Air Handling Units for dehumidification

Hospitals



200 KW COOLING ONLY – BRINE, 3,7 KW PUMP

Type RUAGP561C3R8E stock model

→ Performance Code 70 HP / 200 kW Integrated 3,7 kW pump Basic EER LWT -15 ~ 30 °C

Specified conditions			
AMBIENT CONDITIONS			
Outside Air	*	35	°C DB
Outlet Water	*	7	J°
Inlet Water	*	12	С
CAPACITY CHARACTERISTICS			
Cooling capacity	*	200	kW
Max. cooling capacity	*	206	kW
EFFICIENCY			
SEER	* *	4,75	W/W
EER	*	3,07	W/W
ELECTRIC CHARACTERISITICS			
Power supply ^{2, 3}		380 - 400 / 3 / 50	V / Ph+N / Hz
Operation current ^{2, 3}		95,0	А
Power consumption ^{2, 3}		65,1	kW
Power factor ^{2, 3}		99	%
FLUID CHARACTERISTICS			
Flow rate range ²		150 to 650	L/min
Flow rate ²		631	L/min
Pressure drop ²		163	kPa
External pressure ²		74,2	kPa
Minimum holing water in system		1.581	L

¹) "Integrated heating capcity" represents the capacity including effects of frosting and defrosting.

²) These are characteristics under specified conditions.

EER W/W

3,43

3,72

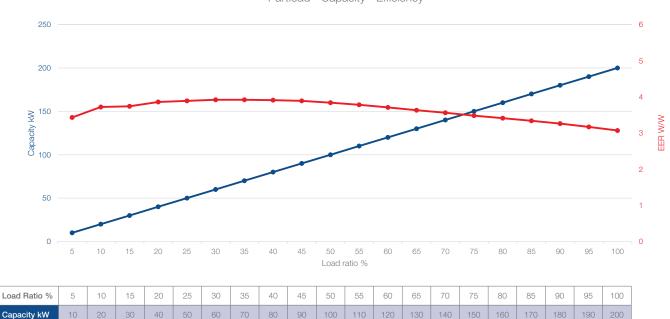
³) The integrated pump part is not included in the electric characteristics.

3,74

3,86

3,89

3,92



3,84

3,78

3,71

3,63

3,56

3,89

3,91

3,92

Partload - Capacity - Efficiency

3,41

3,48

3,34

3,26

3,17

Integrated pump specs				
Rated output	3,7	kW		
Pumping system	Centrifugal Pump			
Starting method	Inverter			
Flow control system	Inverter			
Max. operation current	6,9 x 1	А		
Max. power consumption	4,5 x 1	kW		

Sound pressure level (Measurement position: 1.0 m distance, 1.5 m height)			
Control-box side	69,7	dB(A)	
Air heat-exchanger side	74,0	dB(A)	
Water piping side	68,6	dB(A)	

Sound power level		
Single module	90,9	dB(A)
Overall system	90,9	dB(A)

Physical Data of	Air-Coo	led Chiller
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Dimensions	2.350	mm	Height
	1.000	mm	Width
	3.300	mm	Depth
Shipping Weight	1.337 x 1	kg	
Compressor	Twin Rotary x 4		Type / Pieces
	13,2 x 4	kW	Motor Output
	Inverter		Type of Start
	37 x 4	W	Comp. Heater Wattage
Condenser Coil - Air Side	Plate Fin Coil x 8		
Fan unit	Propeller Fan x 4		Fan / Pieces
	1.230 at max.	m³/min	Air Quantity
	1,2 x 4	kW	Motor Output
Cooler - Water side	Brazed Plate Type x 2		
Refrigerant	8,8 x 4	kg	R32 Charge
	Electric Expansion Valve		Control
Capacity Control Steps	0, 4 ~ 100 (Stepless)	%	
Operation Control Process		Microprocessor control based on leaving water temperature and water temperature difference	
Operating Limit - LWT	-15 ~ 30	°C	
Operating Limit - OAT	-15 ~ 52 DB	°C	
Water Inlet Connection	3" Flange x 1	inch	
Water Outlet Connection	3" Flange x 1	inch	

Fits perfect for ...

Process Cooling



Hospitals



200 KW COOLING ONLY – WATER / BRINE, 2,2 KW PUMP Type RUAGP561C28E stock model



USX Chiller constructed as universal cold water generator with highest operational and fail-safe reliability. The compact X-design with unique 4-in-1 module concept delivers outstanding Smart Features.

SMART FEATURES TECHNICAL KEY FACTS - Air-cooled Chiller in a modular compact design Wide operation range - Flexibility through modular combinability up to 25.600 kW - Wide operating range down to -25°C or Twin rotary compressor up to +52°C outdoor temperature stepless controlled 5 - 100 % - Redundancy through 4 indepedent separate refrigeration circuits Operational reliability $\mathbb{X}\mathbb{X}\mathbb{X}\mathbb{X}$ - Optimal operational safety thanks to 4x TOSHIBA by modular design R32 inverter twin rotary compressors 4x inverter axial fan All year prompt deliverable - Best efficiency through stepless inverter control from Vienna warehouse down to 5 % nominal capacity - Soft start for low starting current Environmentally friendly - Space-saving X-design refrigerant R32 - Electronic expansion valves (PMV) - 8x Air/R32 high efficiency heat exchangers Continuous heating - 2x R32/Water high-efficiency heat exchangers - 2x flange connection PN16 1x flanged dirt trap 150 kW - 25,6 MW performance - 2x temperature sensor range scaled modular - Unit-Controller UC - PWM converter for high electrical power facspace saving X-frame tor and reduction of electrical connected load chassis design - Electrical control cabinet Condensate tray heating WIFI connectivity - Case heating Oil sump heating - Frost protection thermocouple High electric power factor - Mobile system- and energy-monitoring via an APP and WIFI, including non-stop operation recording Silent version High energy efficiency Auto Back-Up function

Fits best for

✓ Offices

Hotels

- ✓ Air Handling Units for dehumidification ✓ Hospitals
 - - Technical Servers
 Technical Cooling

Shopping Centers



200 KW COOLING ONLY – WATER / BRINE, 2,2 KW PUMP

Type RUAGP561C28E stock model

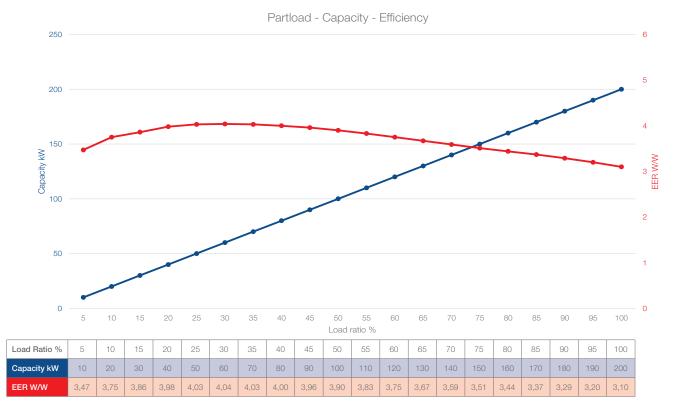
→ Performance Code 70 HP / 200 kW Integrated 2,2 kW pump Basic EER LWT 4 ~ 30 °C

Specified conditions			
AMBIENT CONDITIONS			
Outside Air	*	35	°C DB
Outlet Water	*	7	О°
Inlet Water	*	12	С°
CAPACITY CHARACTERISTICS			
Cooling capacity	**	200	kW
Max. cooling capacity	*	207	kW
EFFICIENCY			
SEER	*	4,75	W/W
EER	*	3,10	W/W
ELECTRIC CHARACTERISITICS			
Power supply ^{2, 3}		380 - 400 / 3 / 50	V / Ph+N / Hz
Operation current ^{2, 3}		94,1	А
Power consumption ^{2, 3}		64,5	kW
Power factor ^{2, 3}		99	%
FLUID CHARACTERISTICS			
Flow rate range ²		150 to 650	L/min
Flow rate ²		573	L/min
Pressure drop ²		95,9	kPa
External pressure ²		65,0	kPa
Minimum holing water in system		1.434	L

¹) "Integrated heating capcity" represents the capacity including effects of frosting and defrosting.

²) These are characteristics under specified conditions.

³) The integrated pump part is not included in the electric characteristics.



Integrated pump specs				
Rated output	2,2	kW		
Pumping system	Centrifugal Pump			
Starting method	Inverter			
Flow control system	Inverter			
Max. operation current	4,3 x 1	А		
Max. power consumption	2,8 x 1	kW		

Sound pressure level (Measurement position: 1.0 m distance, 1.5 m height)				
Control-box side 69,7 dB(A)				
Air heat-exchanger side 74,0 dB(A)				
Water piping side 68,6 dB(A)				

Sound power level			
Single module	90,9	dB(A)	
Overall system	90,9	dB(A)	

Physical	Data of Air-Cooled Ch	iller
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Dimensions	2.350	mm	Height
	1.000	mm	Width
	3.300	mm	Depth
Shipping Weight	1.318 x 1	kg	
Compressor	Twin Rotary x 4		Type / Pieces
	13,2 x 4	kW	Motor Output
	Inverter		Type of Start
	37 x 4	W	Comp. Heater Wattage
Condenser Coil - Air Side	Plate Fin Coil x 8		
Fan unit	Propeller Fan x 4		Fan / Pieces
	1.230 at max.	m³/min	Air Quantity
	1,2 x 4	kW	Motor Output
Cooler - Water side	Brazed Plate Type x 2		
Refrigerant	8,8 x 4	kg	R32 Charge
	Electric Expansion Valve		Control
Capacity Control Steps	0, 4 ~ 100 (Stepless)	%	
Operation Control Process		Microprocessor control based on leaving water temperature and water temperature difference	
Operating Limit - LWT	4 ~ 30	°C	
Operating Limit - OAT	-15 ~ 52 DB	°C	
Water Inlet Connection	3" Flange x 1	inch	
Water Outlet Connection	3" Flange x 1	inch	

Fits perfect for ...

Offices



Data Centers



150 KW HEATPUMP, HIHEATING – WATER / BRINE, 2,2 KW PUMP Type RUAGP421F28E stock model



USX Chiller constructed as universal cold and warm water generator with highest operational and fail-safe reliability. The compact X-design with unique 4-in-1 module concept delivers outstanding Smart Features.

SMART FEATURES



TECHNICAL KEY FACTS

- Air-cooled Heatpump chiller in a modular compact design - Flexibility through modular combinability up to 25.600 kW - Wide operating range down to -25°C or up to +52°C outdoor temperature - Redundancy through 4 indepedent separate refrigeration circuits - Optimal operational safety thanks to 4x TOSHIBA R32 inverter twin rotary compressors - 4x inverter axial fan Best efficiency through stepless inverter control down to 5 % nominal capacity - Soft start for low starting current - Space-saving X-design Electronic expansion valves (PMV) - 8x Air/R32 high efficiency heat exchangers - 2x R32/Water high-efficiency heat exchangers - 2x flange connection PN16 - 1x flanged dirt trap - 2x temperature sensor - Unit-Controller UC - PWM converter for high electrical power factor and reduction of electrical connected load - Electrical control cabinet Condensate tray heating Case heating - Oil sump heating - Frost protection thermocouple
- Mobile system- and energy-monitoring via an APP and WIFI, including non-stop operation recording
- Silent version
- Optimised for heating operation at lowest outdoor temperatures down to -25°C
- Leaving water temperature up to +55°C
- With r.H. sensor for optimizing the defrost cycles

Fits best for

- Air Handling Units for dehumidification
 - ✓ Shopping Centers

✓ Hospitals

OfficesHotels



150 KW HEATPUMP, HIHEATING – WATER / BRINE, 2,2 KW PUMP

Type RUAGP421F28E stock model

→ Performance Code 50 HP / 150 kW Integrated 2,2 kW pump Basic EER HiHeating Capacity LWT 4 ~ 30 °C 25 ~ 55 °C

Specified conditions			
AMBIENT CONDITIONS			
Outside Air	*	35	°C DB
Outlet Water	*	7	С°С
Inlet Water	*************************************	12	С°С
Outside Air	N. 19	7	°C DB
Outside Air WB		6	°C WB
Outlet Water		35	°C
Inlet Water	÷.	30	С°
CAPACITY CHARACTERISTICS			
Cooling capacity	● ● ● ●	150	kW
Max. cooling capacity	*	165	kW
Heating capacity	<u>.</u>	150	kW
Integrated heating capacity ¹		150	kW
Max. heating capacity	<u>.</u>	175	kW
EFFICIENCY			
SEER	*	4,88	W/W
SCOP		4,26	W/W
EER	*	3,53	W/W
СОР	<u> </u>	4,53	W/W
ELECTRIC CHARACTERISITICS			
Power supply ^{2, 3}		380 - 400 / 3 / 50	V / Ph+N / Hz
Operation current ^{2, 3}		62,0	А
		48,3	А
Power consumption ^{2, 3}		42,5	kW
		33,1	kW
Power factor ^{2, 3}		99	%
		99	%
FLUID CHARACTERISTICS			
Flow rate range ²		150 to 600	L/min
Flow rate ²		430	L/min
		430	L/min
Pressure drop ²		56,1	kPa
		56,1	kPa
External pressure ²		127	kPa
		127	kPa
Minimum holing water in system		1.075	L

 $^{\mbox{\tiny 1}}$, "Integrated heating capcity" represents the capacity including effects of frosting and defrosting.

²) These are characteristics under specified conditions.

³) The integrated pump part is not included in the electric characteristics.

Integrated pump specs		
Rated output	2.2	kW
Pumping system	Centrifugal Pump	
Starting method	Inverter	
Flow control system	Inverter	
Max. operation current	4,3 x 1	А
Max. power consumption	2,8 x 1	kW

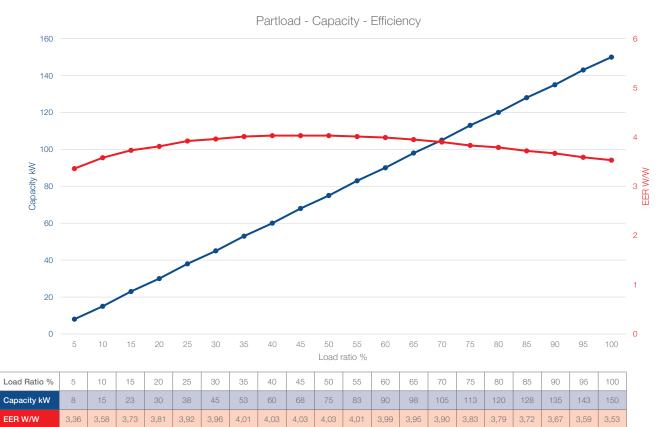
Sound pressure level (Measurement position: 1.0 m distance, 1.5 m height)											
Control-box side	64,7	dB(A)									
Air heat-exchanger side	69,1	dB(A)									
Water piping side	65,9	dB(A)									

Sound power level		
Single module	83,8	dB(A)
Overall system	83,8	dB(A)

Physical Data of Air-Cooled Chiller			
Dimensions	2.350	mm	Height
	1.000	mm	Width
	3.300	mm	Depth
Shipping Weight	1.351 x 1	kg	
Compressor	Twin Rotary x 4		Type / Pieces
	9,0 x 4	kW	Motor Output
	Inverter		Type of Start
	37 x 4	W	Comp. Heater Wattage
Condenser Coil - Air Side	Plate Fin Coil x 8		
Fan unit	Propeller Fan x 4		Fan / Pieces
	1.230 at max.	m³/min	Air Quantity
	1,2 x 4	kW	Motor Output
Cooler - Water side	Brazed Plate Type x 2		
Refrigerant	8,8 x 4	kg	R32 Charge
	Electric Expansion Valve		Control
Capacity Control Steps	0,5 ~ 100 (Stepless)	%	
Operation Control Process			n leaving water temperature and ture difference
Operating Limit - LWT	4 ~ 30	°C	*
Operating Limit - LWT	25 ~ 55	°C	i i i i i i i i i i i i i i i i i i i
Operating Limit - OAT	-15 ~ 52 DB	°C	*
Operating Limit - OAT	-15 ~ 21 DB	°C	
Water Inlet Connection	2-1/2" Flange x 1		
Water Outlet Connection	2-1/2" Flange x 1		

TOSHIBA

COOLING



HEATING



180 KW HEATPUMP, HIHEATING – WATER / BRINE, 2,2 KW PUMP Type RUAGP511F28E stock model



USX Chiller constructed as universal cold and warm water generator with highest operational and fail-safe reliability. The compact X-design with unique 4-in-1 module concept delivers outstanding Smart Features.

SMART FEATURES TECHNICAL KEY FACTS - Air-cooled Heatpump chiller in a modular Wide operation range compact design - Flexibility through modular combinability up to 25.600 kW Twin rotary compressor -- Wide operating range down to -25°C or stepless controlled 5 - 100 % up to +52°C outdoor temperature - Redundancy through 4 indepedent separate Operational reliability refrigeration circuits by modular design - Optimal operational safety thanks to 4x TOSHIBA R32 inverter twin rotary compressors All year prompt deliverable 4x inverter axial fan from Vienna warehouse Best efficiency through stepless inverter control down to 5 % nominal capacity Environmentally friendly - Soft start for low starting current refrigerant R32 - Space-saving X-design - Electronic expansion valves (PMV) Continuous heating - 8x Air/R32 high efficiency heat exchangers - 2x R32/Water high-efficiency heat exchangers 2x flange connection PN16 150 kW - 25,6 MW performance - 1x flanged dirt trap range scaled modular - 2x temperature sensor Unit-Controller UC space saving X-frame - PWM converter for high electrical power facchassis design tor and reduction of electrical connected load - Electrical control cabinet WIFI connectivity Condensate tray heating Case heating - Oil sump heating High electric power factor - Frost protection thermocouple - Mobile system- and energy-monitoring via an APP and WIFI, including non-stop operation recording High energy efficiency - Silent version - Optimised for heating operation at lowest outdoor Auto Back-Up function temperatures down to -25°C

- Leaving water temperature up to +55°C
- With r.H. sensor for optimizing the defrost cycles

Fits best for

- ✓ Air Handling Units for dehumidification ✓ Hospitals
 - ✓ Shopping Centers

OfficesHotels



180 KW HEATPUMP, HIHEATING -WATER / BRINE, 2,2 KW PUMP

Type RUAGP511F28E stock model

LWT 4~30°C * 25~55°C *

Specified conditions			
AMBIENT CONDITIONS			
Outside Air	*	35	°C DB
Outlet Water	*	7	°C
Inlet Water		12	°C
Outside Air DB		7	°C DB
Outside Air WB		6	°C WB
Outlet Water		35	°C
Inlet Water		30	°C
CAPACITY CHARACTERISTICS			
Cooling capacity	*	180	kW
Max. cooling capacity	*	192	kW
Heating capacity		180	kW
Integrated heating capacity ¹		180	kW
Max. heating capacity		205	kW
EFFICIENCY			
SEER	*	4,77	W/W
SCOP		4,35	W/W
EER	*	3,26	W/W
СОР		4,26	W/W
ELECTRIC CHARACTERISITICS			
Power supply ^{2, 3}		380 - 400 / 3 / 50	V / Ph+N / Hz
Operation current ^{2, 3}		80,5	Α
		61,6	Α
Power consumption ^{2, 3}		55,2	kW
		42,3	kW
Power factor ^{2, 3}		99	%
		99	%
FLUID CHARACTERISTICS			
Flow rate range ²		150 to 600	L/min
Flow rate ²		516	L/min
		516	L/min
Pressure drop ²		78,9	kPa
		78,9	kPa
External pressure ²		92,2	kPa
		92,2	kPa
Minimum holing water in system		1.290	L

"Integrated heating capcity" represents the capacity including effects of frosting and defrosting.
 These are characteristics under specified conditions.

³) The integrated pump part is not included in the electric characteristics.

Integrated pump specs	Integrated pump specs											
Rated output	2.2	kW										
Pumping system	Centrifugal Pump											
Starting method	Inverter											
Flow control system	Inverter											
Max. operation current	4,3 x 1	А										
Max. power consumption	2,8 x 1	kW										

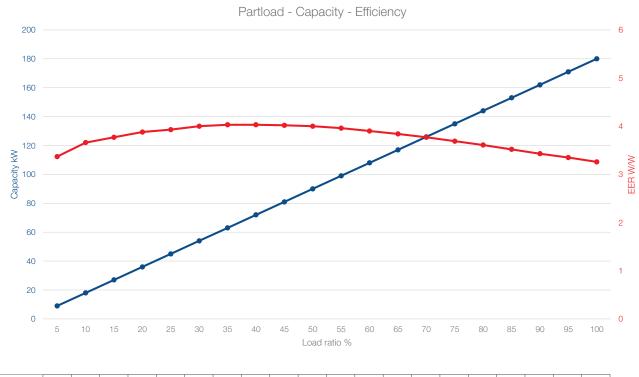
Sound pressure level (Measurement position: 1.0 m distance, 1.5 m height)											
Control-box side	68,2	dB(A)									
Air heat-exchanger side	71,2	dB(A)									
Water piping side	68,3	dB(A)									

Sound power level		
Single module	87,4	dB(A)
Overall system	87,4	dB(A)

Physical Data of Air-Cooled Chiller			
Dimensions	2.350	mm	Height
	1.000	mm	Width
	3.300	mm	Depth
Shipping Weight	1.351 x 1	kg	
Compressor	Twin Rotary x 4		Type / Pieces
	11,2 x 4	kW	Motor Output
	Inverter		Type of Start
	37 x 4	W	Comp. Heater Wattage
Condenser Coil - Air Side	Plate Fin Coil x 8		
Fan unit	Propeller Fan x 4		Fan / Pieces
	1.230 at max.	m³/min	Air Quantity
	1,2 x 4	kW	Motor Output
Cooler - Water side	Brazed Plate Type x 2		
Refrigerant	8,8 x 4	kg	R32 Charge
	Electric Expansion Valve		Control
Capacity Control Steps	0,4 ~ 100 (Stepless)	%	
Operation Control Process			n leaving water temperature and ture difference
Operating Limit - LWT	4 ~ 30	°C	*
Operating Limit - LWT	25 ~ 55	°C	** ** **
Operating Limit - OAT	-15 ~ 52 DB	°C	*
Operating Limit - OAT	-15 ~ 21 DB	°C	<u>*</u>
Water Inlet Connection	2-1/2" Flange x 1		
Water Outlet Connection	2-1/2" Flange x 1		

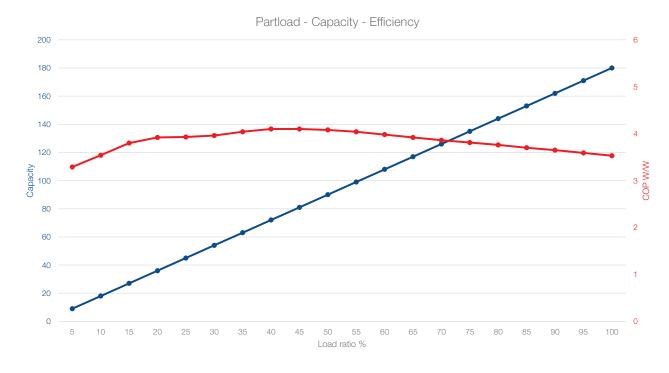
TOSHIBA

COOLING



Load F	Ratio %	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Capac	ity kW	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
EER W	v/w	3,37	3,66	3,77	3,88	3,93	4,00	4,03	4,03	4,02	4,00	3,96	3,90	3,84	3,77	3,69	3,61	3,52	3,43	3,35	3,26

HEATING



Load Ratio %	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Capacity kW	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
COP W/W	4,39	4,70	4,93	5,03	5,09	5,16	5,19	5,20	5,19	5,15	5,08	4,99	4,91	4,82	4,73	4,63	4,53	4,44	4,35	4,26



Automotive Factory

I NAME I

The customer is an industrial company in the automotive manufacturing industry. The customer's original gas absorption chiller needed to be replaced after nearly 20 years of operation to save energy, easily control temperature, and reduce operating costs. Using the highly efficient USX reduced ongoing costs and provided risk diversification with a backup for each module.



We will advise you personally YOUR CERTIFIED TOSHIBA PARTNER

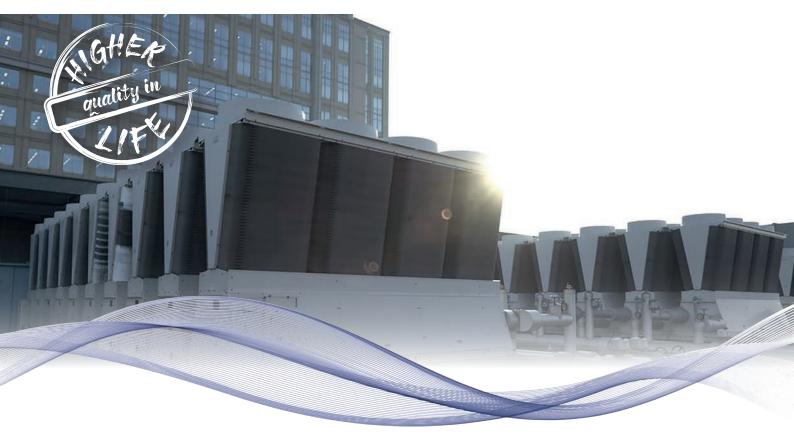
TOSHIBA specialist partner:



TOSHIBA is proud of its network of qualified specialist companies in the refrigeration and air conditioning industry. With a TOSHIBA air conditioning system, you not only get top product quality, you also receive professional advice, planning, installation and service. Rely on a perfect climate from a specialist!

From small to huge

With the commercial applications for industry and trade, TOSHIBA covers the entire range. Contact your TOSHIBA specialist partner or visit our website for detailed information.



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