MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

IT COOLING

CHILLERS

NR²Z G02 G06

AIR COOLED CHILLERS FOR OUTDOOR INSTALLATION, FROM 40 TO 226 kW

R410A

R454B

melcohit.com

NR²Z G02 G06

QUIETER. GREENER. COOLER.

Air cooled chillers with scroll compressors and low GWP refrigerant. From 40 to 226 kW.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

NR2-G02-Z and NR2-G06-Z are air cooled chillers with scroll compressors designed for delivering the best efficiencies in IT-Cooling applications.

Available with either R410A refrigerant or the low GWP R454B, the new range presents units with two compressors in a single-circuit configuration.

All the main hydraulic and mechanical components are integrated inside the unit, providing the ideal plug & play solution for HVAC plants.

The complete range is Eurovent certified and all the sizes are completely ErP2021 compliant.

IT COOLING APPLICATIONS

- Data centers
- Servers room
- Technological hubs
- Telecommunication installation
- Laboratories
- Technical rooms

PREMIUM EFFICIENCIES IN COOLING

COOLING **NR2-Z** Air cooled chillers

UP TO

	EER	SEPR HT
Standard Units Efficiency	4,21	5,94
Units with Ultra Performance kit UP	4,60	6,22
Units with Noise Reducer kit NR	4,26	5,95

EER: 28/20°C, air 35°C (EN14511 values)
SEPR HT: Regulation (EU) N. 2016/2281

3 ACOUSTIC VERSIONS

Standard	Low sound power levels already in the standard version.	
Compressor sound proofing insulation	Additional compressor sound proofing insulation for even lower sound power levels.	**-1 dB(A)**
NR Kit	The highest level of noise reduction. No compromises in efficiency!	**up to -4 dB(A)**

HEAT RECOVERY CONFIGURATIONS

Standard unit	Unit without heat recovery.	-
Partial heat recovery	A desuperheater on the compressor discharge line recovers approximately 20% of the unit's capacity. **Suitable for DHW production or other secondary uses, such as the integration of an existing boiler.**	**60°C**

NEW GENERATION GREEN REFRIGERANT

R454B

Fully committed to support the creation of a greener tomorrow, Mitsubishi Electric Hydronics & IT Cooling Systems presents the G06 series, chillers and heat pumps with reduced environmental impact.

Thanks to the new generation refrigerant R454B, the environmental impact of NR2-G06-Z is greatly reduced. Combining reduced refrigerant charge with a low GWP refrigerant, these units boast the lowest amount of CO_2eq in the scroll unit market, thus resulting as the perfect choice for any new forward looking installation.

R454B REFRIGERANT

High density, low **GWP refrigerant**. Its physical properties are **similar to R410A**, so the same type of equipment / components can be used.

REDUCED ENVIRONMENTAL IMPACT

- **Low GWP**, only 467
- **Reduced refrigerant charge** (-10% vs R410A)

RELIABILITY

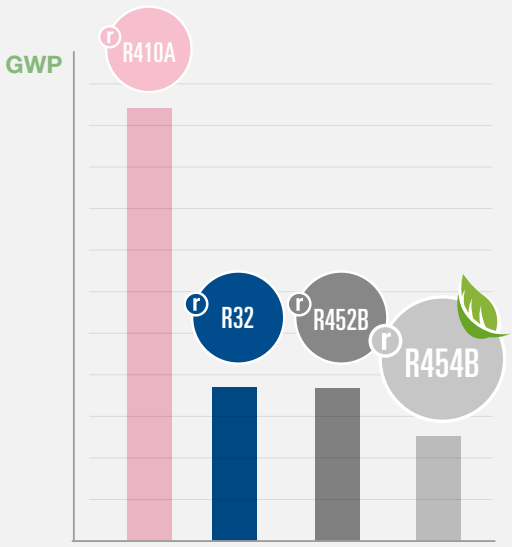
- Use of **well-known components**
- Refrigerant circuit **reliability** is maintained

PERFORMANCE & ENVELOPE

- **Same operating limits** of R410A both in **cooling** and **heating**
- Higher efficiency (full load +3,5%, seasonal +2% vs R410A)

GWP: 467

-76% vs R410A
-31% vs R32



HIGHER EFFICIENCY IN LESS SPACE

+10% COOLING CAPACITY
+7% SEASONAL EFFICIENCY

UP kit

NR2-Z delivers increased cooling capacity and efficiency compared to the previous generation, exceeding the most demanding efficiency thresholds.

UP kit is available for a higher efficiency level while maintaining the same compact footprint as the standard version.

SUPER SILENT OPERATION

AMONG THE MOST SILENT SCROLL CHILLER IN THE MARKET

NR kit

NR2-G02-Z and NR2-G06-Z ranges are key in providing very low noise emissions.

NR Kit is available for an outstanding sound level while maintaining the same performance and footprint as the standard version.

UNYIELDING IN EXTREME CONDITIONS

EXTENDED OPERATING LIMITS

+50°C

-20°C

Designed to ensure complete reliability, NR2-Z operates in all climates from -20°C to +50°C.

NR2-Z can be equipped with highly resistant coil coatings to withstand even the harshest industrial or coastal environmental conditions.

TECHNOLOGICAL CHOICES

W3000+ CONTROL

Management software developed fully in-house

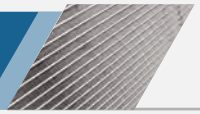
- Proprietary settings for faster adaptive responses to different dynamics
- Enhanced diagnostics thanks to the black box function
- Connectivity with the most commonly used BMS protocols and M-Net Mitsubishi Electric proprietary protocol (Opt.)

Compact keyboard

- Large LCD display and functional keys
- Quick and easy parameter consultation and adjustment by means of a multi-level menu
- KIPlink, the innovative Wi-Fi interface, is available as an option.

Patent-pending solution which optimizes the thermodynamic cycle

New generation full aluminum micro-channel coils for cooling only chillers

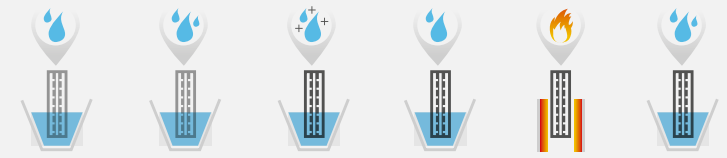


- Long Life Alloy (LLA) for higher corrosion resistance and longer life cycle
- Up to 30% of refrigerant charge reduction vs. traditional solutions
- Lower weight vs. traditional solutions

Al- E-coating treatment (opt.)

- Excellent resistance to UV rays.
- **over 6000 h resistance** as per ASTM B117
- **over 1000 h of surface protection against UV rays** as per ASTM G155-05a

E-coating process



R454B Refrigerant

GWP: 467

-76% vs R410A
-31% vs R32

High density, low GWP refrigerant

- **Composition:** 69% R32 + 31% R1234yf
- **Global Warming Potential:** 467 (IPCC AR5)
- **Safety classification:**
  - A2L midly flammable (ISO 817)
  - Fluid Group 1 (PED)

BEST-IN-CLASS TECHNOLOGICAL CHOICES FOR HIGH-LEVEL PERFORMANCE AND SUPER SILENT OPERATION

FANS

High performing, axial fans:

- External bell mouth for the highest efficiency and one of the best sound power level in the market
- Variable Speed control as standard (DVVF), for large operating limits

UP TO +6% MORE SEASONAL EFFICIENCY

EC AXIAL

EC fans (opt. available for all versions)

- Continuous regulation of air flow
- Reduced power consumption and increased efficiencies at partial loads
- High ESP EC fan option for up to 150 Pa of available static pressure

Plate heat exchange

- Compact, efficient, with low pressure drops
- Made of AISI 316 steel plates, copper-brazed, **fully protected against ice formation** with **closed-cell neoprene external lining**

SCROLL COMPRESSORS

New generation scroll compressors, developed for the use of high density A2L refrigerants (Fluid Group 1 of PED Directive).

- **Tandem configuration** to benefit from **higher seasonal efficiency**
- **Specific oil management solution** for enhanced reliability

HYDRONIC MODULES

The **fully integrated hydronic module** (opt.) includes the pumps, the buffer tank, and all the main hydraulic components, **which optimize of the installation space, time, and costs**.

Pumps

- In-line configuration
- 2-pole motor
- Single or twin pumps
- Low or high head (approx. 100 or 200 kPa).

Pumps + Inverter

- External inverter to adjust the waterflow
- Reduced energy consumption through speed regulation
- Available flow control logics: Constant flow parameter-set, variable flow with VPF and VPF.D systems

Pumps + Buffer tank

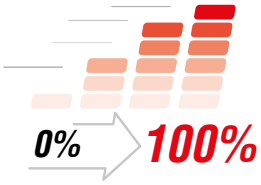
- Up to 250 liter buffer tank
- 20mm insulation lining
- Including: expansion vessel, safety valve, manometer.

EQUIPMENT FOR MISSION CRITICAL APPLICATIONS

FAST RESTART

Ensures a **faster return to the necessary cooling** levels in the shortest time possible, while maintaining the **reliability** of the chiller.

Ensure immediate cooling start-up within 22”



Have the unit running at full load in a shorter time

The units in standard working conditions delivers 100% of cooling capacity within 32” after power is restored.

MULTI MANAGER

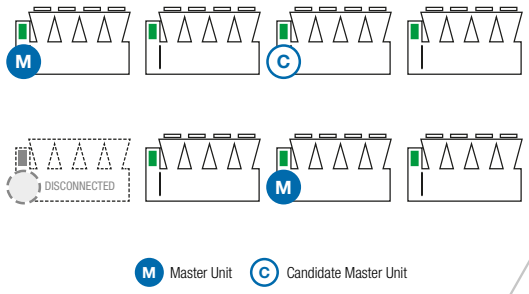
The NR2-Z ranges feature embedded LAN logics for an easy connection between chillers of the same group.

- **Up to 8 chillers connected to the same group.**
- **Load sharing and Sequencing.**
  Logics for the smart distribution of cooling loads among the units.
- **Selectable units’ start-up sequence and group Fast Restart (with Fast Restart option).**
  To avoid simultaneous start-ups of different unit’s compressors in case of dangerous current peaks.
- **Stand by unit management with automatic unit rotation.**
- **Dynamic master with succession priority.**
  One master unit is elected to coordinate the group and if it becomes disconnected the candidate unit takes full control.
- **Resource priority management.**
  For a group of chillers, with different technologies, it is possible to set the usage priority of each unit, making the most of the available cooling resources.

SMART LAN FUNCTIONS

The entire cooling equipment works as one, with one master chiller that coordinates and optimizes the operation of the group.

MASTER SUCCESSION PRIORITY



FURTHER OPTIONS

KIPlink USER INTERFACE

An exclusive product of Mitsubishi Electric Hydronics & IT Cooling Systems.

Based on Wi-Fi technology, KIPlink is an option that allows one to operate the unit directly from a mobile device (smartphone, tablet, or notebook) by simply scanning the QR code positioned on the unit.

- **Easy monitoring of components during maintenance activities**
- **Real-time graphs and trends of the components status and operating performance**
- **Data logger function to check and download history of events**

FURTHER OPTIONS

Set-point adjustment

4-20 mA: Enables remote set-point adjustments (analog input).

Double set-point: Enables the remote switch between 2 set-points (digital input).

Set-point compensation: Automatic adjustment of the set-point on the basis of the outdoor temperature.

Control functions

Night mode: Limits the unit sound level reducing the usage of the resources. Sound power reduction (with factory settings): -3 dB(A).

U.L.C. User Limit Control: Controls a mixing valve (not included) to ensure a safe start-up and operation of the unit even in critical conditions.

Remote probe: Controls the unit's and pump's activation on the base of the water temperature of the buffer tank or hydraulic decoupler.

Demand limit: Limits the unit's power absorption for safety reasons or in temporary situations (digital input).

Electrical

Compressor rephasing: The capacitors on the compressors' line increase the unit's power factor.

Soft-starter: Manages the inrush current enabling lower motor windings' mechanical wear, avoidance of mains voltage fluctuations during starting and favorable sizing for the electrical system.

Connectivity

Serial card interface module to allow integration with BMS protocols:
Modbus / LonWorks / BACnet MS/TP / BACnet over IP / Konnex / Modbus TCP/IP/ SNMP

M-Net interface kit: Interface module to allow the integration of the unit with Mitsubishi Electric proprietary communication protocol M-Net.

Multi Manager options to allow easy connection between a group of chillers

Energy Meter

Energy meter for BMS: Acquires electrical data and the power absorbed by the unit and sends them the BMS for energy metering (Modbus RS485).

Energy meter for W3000: The electrical data acquired is available directely on the unit's control.

Refrigerant circuit

Compressor suction and discharge valves: Installed for each compressor tandem, the valves simplify maintenance activities.
The user can work on the isolated valve for periodic maintenance or replacement, without removing the refrigerant from the circuit.

Dual pressure relief valves with switch: One valve is isolated from the refrigerant circuit while the other is in service.
The userr can work on the isolated valve for periodic maintenance or replacement, without removing the refrigerant from the circuit.

Refrigerant leak detector

Leak detector: Factory installed device. In case of a gas leak detection it raises an alarm.

Leak detector + compressor off: Factory installed device. In case of a gas leak detection it raises an alarm and stops the units.

Hydraulic

Water flow switch: Designed to protect the unit when the water flow across the evaporator is not sufficient and falls outside of the operating parameters.

Structure

Anti-intrusion grilles: Perimeter metal grilles to protect against the intrusion of solid bodies into the unit structure.

Spring or rubber type anti-vibration mountings: Reduce vibrations, keeping noise transmission to a minimum.

Forklift lifting brackets: additional option available for an easier lifting of the units.

Packing

Standard or nylon packing: The unit is provided with plastic supports, with or without a protective nylon layer.

Container slides or packing: The unit is provided with metal slides to load it in a conrtainer, with or without a protective nylon layer.

Wooden cage packing: The unit is provided with a robust wooden cage, with or without a protective nylon layer.

NR²Z G02

0042 - 0222
Air cooled chillers
for outdoor installation
(from 43 to 226 kW)

COOLING PLATES SCROLL AXIAL

R410A

NR2-G02-Z

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	59,63	70,87	79,98	89,55	98,72	118,1	136,3	149,7	167,5	191,9	220,6	249,4	275,4	304,1
Total power input	(1)	kW	15,13	18,40	19,74	22,45	25,80	28,63	33,80	39,71	47,01	51,45	57,68	68,44	70,56	82,65
EER	(1)	kW/kW	3.947	3.853	4.061	3.996	3.826	4.129	4.033	3.771	3.564	3.726	3.823	3.646	3.901	3.682
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	42,90	50,80	57,20	65,00	72,10	85,30	99,10	109,7	123,5	137,3	161,1	184,0	196,6	220,9
EER	(2)(3)	kW/kW	2.960	2.910	2.940	3.170	3.080	2.990	3.230	3.070	2.900	2.730	3.010	2.930	2.840	2.710
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		5,72	5,77	5,51	5,57	5,60	5,60	5,57	5,39	5,33	5,64	5,59	5,66	5,75	5,63
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	46,86	55,56	62,16	70,87	78,55	92,69	108,0	119,4	134,1	148,7	175,2	199,7	213,1	238,2
Total power input	(6)	kW	14,54	17,61	19,82	20,72	23,70	28,92	31,16	36,28	43,28	51,14	54,11	63,77	70,21	82,88
EER	(6)	kW/kW	3.234	3.159	3.141	3.425	3.312	3.208	3.462	3.289	3.097	2.910	3.238	3.130	3.036	2.873
23°C/15°C																
Cooling capacity	(7)	kW	53,25	63,20	69,84	80,27	88,72	104,3	122,2	134,7	151,0	172,2	198,0	224,8	239,2	274,8
Total power input	(7)	kW	14,91	18,10	20,83	21,63	24,81	30,30	32,55	38,07	45,27	50,02	56,09	66,33	72,93	80,46
EER	(7)	kW/kW	3.577	3.492	3.356	3.718	3.577	3.442	3.748	3.535	3.333	3.444	3.529	3.391	3.281	3.414
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	2.057	2.438	2.744	3.117	3.460	4.092	4.751	5.261	5.920	6.579	7.721	8.815	9.418	10,58
Pressure drop at the heat exchanger	(2)(3)	kPa	50,4	36,7	46,5	51,9	52,0	52,1	41,5	50,9	51,3	48,0	54,1	49,3	42,8	54,0
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	8,10	8,10	8,50	10,5	10,6	11,8	13,9	15,2	16,5	16,8	23,3	23,2	24,3	24,4
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	49	50	49	51	52	52	52	52	52	53	54	55	55	56
Sound power level in cooling	(9)(10)	dB(A)	81	82	81	83	84	84	84	84	84	85	86	87	87	88
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:
1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
3 ▸ Values in compliance with EN14511
4 ▸ Seasonal energy efficiency ratio
5 ▸ Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 ▸ Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
7 ▸ Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NR²Z G06

0042 - 0222
Air cooled chillers
for outdoor installation
(from 40 to 212 kW)

COOLING · PLATES · SCROLL · AXIAL · R454B

NR2-G06-Z

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	56,66	67,50	73,81	84,06	93,53	108,8	129,0	142,1	159,1	176,1	209,4	238,3	255,1	293,1
Total power input	(1)	kW	14,03	16,96	19,49	19,71	23,01	28,47	31,03	36,76	42,67	49,26	51,57	60,86	67,82	74,00
EER	(1)	kW/kW	4.050	3.971	3.785	4.269	4.065	3.818	4.161	3.861	3.726	3.572	4.058	3.913	3.763	3.961
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	40,40	48,50	54,00	60,80	68,00	79,60	93,10	103,5	116,2	129,3	151,7	173,9	186,6	208,3
EER	(2)(3)	kW/kW	2.920	2.970	3.120	3.380	3.260	3.090	3.290	3.110	2.990	2.870	3.150	3.100	3.000	2.900
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		5,87	5,94	5,73	5,77	5,66	5,70	5,60	5,42	5,40	5,63	5,59	5,73	5,72	5,76
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	44,25	52,95	58,79	66,32	74,07	86,64	101,6	112,7	126,4	140,4	165,2	189,1	202,8	226,6
Total power input	(6)	kW	13,84	16,41	17,62	18,17	21,10	26,15	28,72	33,74	39,41	45,72	48,54	56,86	63,23	73,18
EER	(6)	kW/kW	3.203	3.226	3.341	3.643	3.512	3.318	3.540	3.344	3.208	3.072	3.406	3.323	3.209	3.096
23°C/15°C																
Cooling capacity	(7)	kW	50,45	60,23	66,38	75,20	83,84	97,84	115,3	127,5	142,8	158,3	187,3	213,8	229,1	256,7
Total power input	(7)	kW	14,02	16,78	18,57	18,97	22,09	27,37	29,93	35,30	41,14	47,64	50,22	59,05	65,72	76,75
EER	(7)	kW/kW	3.607	3.583	3.570	3.958	3.792	3.569	3.856	3.612	3.474	3.326	3.731	3.624	3.487	3.342
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	1.938	2.323	2.590	2.916	3.261	3.817	4.462	4.965	5.573	6.198	7.268	8.331	8.937	9.979
Pressure drop at the heat exchanger	(2)(3)	kPa	44,8	33,3	41,4	45,4	46,2	45,3	36,6	45,4	45,5	42,6	47,9	44,1	38,5	48,0
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	7,60	7,60	8,00	9,90	10,0	11,1	13,1	14,3	15,5	15,8	21,9	22,7	22,8	22,9
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	49	50	49	51	52	52	52	52	52	53	54	55	55	56
Sound power level in cooling	(9)(10)	dB(A)	81	82	81	83	84	84	84	84	84	85	86	87	87	88
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:
1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
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4 ▸ Seasonal energy efficiency ratio
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8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R454B [GWP_{100} 466] fluorinated greenhouse gases.

Certified data in EUROVENT

NR²Z G02

0042 - 0222

Air cooled chillers
for outdoor installation
(from 43 to 226 kW)

COOLING PLATES SCROLL AXIAL

R410A

NR2-G02-Z + UP kit

UP kit

Air cooled chiller with
Ultra Performance Kit

TOP LEVEL EFFICIENCY

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

VPF VARIABLE PRIMARY FLOW

EEV ELECTRONIC EXPANSION VALVE

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	61,19	72,95	79,98	91,47	100,9	118,1	138,8	152,8	172,4	191,9	226,6	257,5	275,4	304,1
Total power input	(1)	kW	13,94	16,96	19,74	20,87	23,82	28,63	33,21	38,45	44,56	51,45	55,43	64,80	70,56	82,65
EER	(1)	kW/kW	4.403	4.288	4.061	4.378	4.239	4.129	4.181	3.969	3.865	3.726	4.090	3.974	3.901	3.682
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	43,60	51,90	58,00	65,60	72,70	86,10	100,1	110,8	125,4	140,1	163,5	187,0	200,7	225,7
EER	(2)(3)	kW/kW	3.200	3.190	3.230	3.400	3.330	3.270	3.260	3.140	3.040	2.930	3.120	3.080	3.040	2.940
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		5,92	5,99	5,68	5,71	5,74	5,80	5,50	5,35	5,37	5,70	5,57	5,67	5,80	5,71
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	47,73	56,81	63,35	71,77	79,48	93,83	109,3	120,9	136,6	152,4	178,3	203,6	218,4	244,6
Total power input	(6)	kW	13,56	16,35	18,18	19,42	22,05	26,55	30,99	35,60	41,59	48,26	52,70	61,21	66,70	77,68
EER	(6)	kW/kW	3.507	3.463	3.478	3.701	3.614	3.526	3.526	3.396	3.284	3.155	3.383	3.327	3.274	3.148
23°C/15°C																
Cooling capacity	(7)	kW	54,45	64,85	71,75	81,63	90,23	106,0	124,1	136,9	154,5	172,2	202,5	230,7	247,1	274,8
Total power input	(7)	kW	13,82	16,73	19,01	20,19	22,98	27,67	32,17	37,10	43,19	50,02	54,25	63,22	68,88	80,46
EER	(7)	kW/kW	3.942	3.886	3.779	4.040	3.922	3.827	3.854	3.690	3.576	3.444	3.736	3.650	3.586	3.414
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	2.090	2.487	2.784	3.149	3.491	4.133	4.800	5.316	6.010	6.713	7.833	8.960	9.612	10,81
Pressure drop at the heat exchanger	(2)(3)	kPa	52,1	38,2	47,8	52,9	52,9	53,1	42,4	52,0	52,9	49,9	55,7	51,0	44,5	56,3
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	8,10	8,10	8,50	10,5	10,6	11,8	13,9	15,2	16,5	16,8	23,3	23,2	24,3	24,4
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	53	53	53	54	55	55	57	57	57	58	59	59	59	60
Sound power level in cooling	(9)(10)	dB(A)	85	85	85	86	87	87	89	89	89	90	91	91	91	92
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:

1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
3 ▸ Values in compliance with EN14511
4 ▸ Seasonal energy efficiency ratio
5 ▸ Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 ▸ Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
7 ▸ Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NR²Z G06

0042 - 0222
Air cooled chillers
for outdoor installation
(from 40 to 212 kW)

COOLING · PLATES · SCROLL · AXIAL · R454B

NR2-G06-Z + UP kit

UP kit

Air cooled chiller with
Ultra Performance Kit

TOP LEVEL EFFICIENCY · EUROVENT CERTIFIED PERFORMANCE · VPF VARIABLE PRIMARY FLOW · EEV ELECTRONIC EXPANSION VALVE

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	57,98	69,14	75,77	85,64	95,58	111,7	131,5	144,7	163,2	182,0	214,0	243,8	262,5	293,1
Total power input	(1)	kW	12,70	15,25	17,72	18,36	21,29	25,89	30,57	35,62	40,63	46,14	50,04	58,03	63,89	74,00
EER	(1)	kW/kW	4.567	4.546	4.282	4.652	4.488	4.313	4.297	4.065	4.020	3.948	4.280	4.203	4.108	3.961
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	41,10	49,20	54,60	61,40	68,80	80,60	94,10	104,4	117,8	131,4	153,6	176,1	189,5	211,4
EER	(2)(3)	kW/kW	3.160	3.250	3.420	3.620	3.520	3.380	3.310	3.170	3.120	3.050	3.230	3.220	3.160	3.100
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		6,11	6,22	5,91	5,91	5,80	5,89	5,49	5,36	5,39	5,67	5,52	5,72	5,73	5,82
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	45,04	53,89	59,68	67,16	75,15	88,03	102,9	114,0	128,5	143,3	167,7	192,0	206,6	230,4
Total power input	(6)	kW	12,85	15,11	16,21	17,09	19,71	24,07	28,71	33,23	38,09	43,42	47,74	55,04	60,49	69,04
EER	(6)	kW/kW	3.516	3.570	3.685	3.930	3.812	3.651	3.585	3.434	3.373	3.302	3.516	3.491	3.415	3.339
23°C/15°C																
Cooling capacity	(7)	kW	51,50	61,50	67,75	76,39	85,36	99,91	117,2	129,4	145,9	162,6	190,8	217,9	234,6	261,6
Total power input	(7)	kW	12,86	15,28	16,99	17,76	20,54	25,03	29,70	34,49	39,46	44,92	49,05	56,72	62,39	71,72
EER	(7)	kW/kW	3.992	4.020	3.988	4.292	4.166	3.996	3.946	3.751	3.694	3.621	3.894	3.843	3.760	3.649
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	1.970	2.360	2.621	2.948	3.301	3.867	4.512	5.009	5.650	6.301	7.363	8.438	9.077	10,13
Pressure drop at the heat exchanger	(2)(3)	kPa	46,3	34,4	42,4	46,4	47,3	46,5	37,5	46,2	46,7	44,0	49,2	45,2	39,7	49,4
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	7,60	7,60	8,00	9,90	10,0	11,1	13,1	14,3	15,5	15,8	21,9	22,7	22,8	22,9
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	53	53	53	54	55	55	57	57	57	58	59	59	59	60
Sound power level in cooling	(9)(10)	dB(A)	85	85	85	86	87	87	89	89	89	90	91	91	91	92
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:
1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
3 ▸ Values in compliance with EN14511
4 ▸ Seasonal energy efficiency ratio
5 ▸ Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 ▸ Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
7 ▸ Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R454B [GWP_{100} 466] fluorinated greenhouse gases.

Certified data in EUROVENT

NR²Z G02

0042 - 0222
Air cooled chillers
for outdoor installation
(from 43 to 226 kW)

COOLING PLATES SCROLL AXIAL R410A

NR2-G02-Z + NR kit

NR kit — Air cooled chiller with Noise Reducer Kit

LOW NOISE — EUROVENT CERTIFIED PERFORMANCE — VPF VARIABLE PRIMARY FLOW — EEV ELECTRONIC EXPANSION VALVE

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	58,71	72,95	79,98	88,13	97,19	118,1	134,5	147,4	172,4	191,9	216,6	257,5	275,4	304,1
Total power input	(1)	kW	15,11	16,96	19,74	22,33	25,81	28,63	34,54	40,73	44,56	51,45	59,15	64,80	70,56	82,65
EER	(1)	kW/kW	3.887	4.288	4.061	3.951	3.767	4.129	3.899	3.622	3.865	3.726	3.665	3.974	3.901	3.682
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	42,30	50,10	56,60	64,20	71,30	84,30	98,20	108,4	121,8	135,3	159,0	181,6	193,9	217,4
EER	(2)(3)	kW/kW	2.940	2.870	2.890	3.170	3.070	2.950	3.150	2.980	2.780	2.610	2.910	2.820	2.730	2.590
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		5,78	5,79	5,52	5,64	5,63	5,62	5,56	5,37	5,28	5,58	5,55	5,62	5,72	5,58
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	46,25	54,68	61,38	69,95	77,60	91,56	106,9	117,9	132,2	146,3	172,8	196,7	209,7	244,6
Total power input	(6)	kW	14,46	17,63	19,97	20,52	23,60	29,04	31,72	37,06	44,48	52,85	55,27	65,35	72,14	77,68
EER	(6)	kW/kW	3.193	3.108	3.070	3.410	3.288	3.159	3.372	3.178	2.971	2.766	3.125	3.012	2.908	3.148
23°C/15°C																
Cooling capacity	(7)	kW	52,50	62,14	71,75	79,11	87,51	106,0	120,8	132,8	148,4	172,2	194,9	221,0	247,1	274,8
Total power input	(7)	kW	14,86	18,13	19,01	21,47	24,76	27,67	33,20	38,97	46,64	50,02	57,40	68,12	68,88	80,46
EER	(7)	kW/kW	3.523	3.431	3.779	3.679	3.528	3.827	3.639	3.405	3.185	3.444	3.395	3.245	3.586	3.414
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	2.032	2.401	2.715	3.079	3.422	4.046	4.708	5.201	5.843	6.484	7.620	8.699	9.288	10,42
Pressure drop at the heat exchanger	(2)(3)	kPa	49,2	35,6	45,5	50,6	50,8	50,9	40,8	49,8	50,0	46,6	52,7	48,1	41,6	52,3
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	8,10	8,10	8,50	10,5	10,6	11,8	13,9	15,2	16,5	16,8	23,3	23,2	24,3	24,4
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	45	46	45	47	48	48	48	48	48	50	50	51	51	52
Sound power level in cooling	(9)(10)	dB(A)	77	78	77	79	80	80	80	80	80	82	82	83	83	84
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:
1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
3 ▸ Values in compliance with EN14511
4 ▸ Seasonal energy efficiency ratio
5 ▸ Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 ▸ Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
7 ▸ Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NR²Z G06

0042 - 0222
Air cooled chillers
for outdoor installation
(from 40 to 212 kW)

COOLING · PLATES · SCROLL · AXIAL · R454B

NR2-G06-Z + NR kit

NR

Air cooled chiller with
Noise Reducer Kit

LOW NOISE · EUROVENT CERTIFIED PERFORMANCE · VPF VARIABLE PRIMARY FLOW · EEV ELECTRONIC EXPANSION VALVE

Model			0042	0052	0062	0072	0082	0092	0102	0112	0122	0142	0162	0182	0202	0222
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE																
COOLING ONLY (GROSS VALUE)																
Cooling capacity	(1)	kW	55,89	66,30	75,77	83,29	92,48	111,7	127,4	140,2	156,4	182,0	206,3	234,1	262,5	293,1
Total power input	(1)	kW	14,10	17,15	17,72	19,54	22,97	25,89	31,63	37,63	43,91	46,14	53,00	62,88	63,89	74,00
EER	(1)	kW/kW	3.965	3.855	4.282	4.272	4.022	4.313	4.032	3.729	3.563	3.948	3.892	3.722	4.108	3.961
COOLING ONLY (EN14511 VALUE)																
Cooling capacity	(2)(3)	kW	39,90	47,70	53,50	60,40	67,40	78,60	92,20	102,5	114,9	127,4	150,1	171,6	183,9	206,1
EER	(2)(3)	kW/kW	2.900	2.930	3.090	3.410	3.270	3.050	3.210	3.030	2.890	2.760	3.050	2.980	2.870	2.780
Cooling energy class			-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPR HT	(4)(5)		5,91	5,95	5,75	5,87	5,72	5,73	5,59	5,41	5,35	5,58	5,56	5,70	5,68	5,70
COOLING ONLY (GROSS VALUE)																
16°C/10°C																
Cooling capacity	(6)	kW	43,71	52,11	58,17	65,84	73,42	85,47	100,6	111,6	124,8	138,2	163,3	186,4	199,6	224,0
Total power input	(6)	kW	13,78	16,46	17,72	17,92	20,95	26,21	29,16	34,37	40,37	47,07	49,66	58,42	65,20	75,78
EER	(6)	kW/kW	3.167	3.158	3.288	3.676	3.512	3.263	3.445	3.244	3.089	2.934	3.286	3.192	3.061	2.955
23°C/15°C																
Cooling capacity	(7)	kW	49,80	59,21	65,53	74,58	83,00	96,35	114,0	126,0	140,7	155,4	184,8	210,4	224,9	261,6
Total power input	(7)	kW	14,03	16,90	18,74	18,77	21,99	27,51	30,45	36,06	42,24	49,16	51,49	60,84	67,96	71,72
EER	(7)	kW/kW	3.557	3.503	3.503	3.968	3.773	3.502	3.738	3.490	3.334	3.159	3.588	3.461	3.307	3.649
EXCHANGERS																
HEAT EXCHANGER USER SIDE IN REFRIGERATION																
Water flow	(2)	l/s	1.916	2.288	2.566	2.897	3.234	3.769	4.421	4.918	5.508	6.109	7.191	8.223	8.809	9.871
Pressure drop at the heat exchanger	(2)(3)	kPa	43,8	32,3	40,6	44,8	45,4	44,2	36,0	44,5	44,4	41,4	46,9	42,9	37,4	47,0
REFRIGERANT CIRCUIT																
Compressors nr.		N°	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	7,60	7,60	8,00	9,90	10,0	11,1	13,1	14,3	15,5	15,8	21,9	22,7	22,8	22,9
NOISE LEVEL																
Sound Pressure	(8)	dB(A)	45	46	45	47	48	48	48	48	48	50	50	51	51	52
Sound power level in cooling	(9)(10)	dB(A)	77	78	77	79	80	80	80	80	80	82	82	83	83	84
SIZE AND WEIGHT																
A	(11)	mm	1825	1825	1825	2395	2395	2395	2825	2825	2825	2825	3980	3980	3980	3980
B	(11)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195	1195
H	(11)	mm	1865	1865	1865	1865	1865	1865	1980	1980	1980	1980	1980	1980	1980	1980
Operating weight	(11)	kg	500	510	550	630	630	640	770	770	850	920	1130	1170	1180	1220

Notes:
1 ▸ Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C.
2 ▸ Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C
3 ▸ Values in compliance with EN14511
4 ▸ Seasonal energy efficiency ratio
5 ▸ Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 ▸ Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
7 ▸ Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
8 ▸ Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 ▸ Sound power on the basis of measurements taken in compliance with ISO 9614.
10 ▸ Sound power level in cooling, outdoors.
11 ▸ Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain R454B [GWP_{100} 466] fluorinated greenhouse gases.

Certified data in EUROVENT

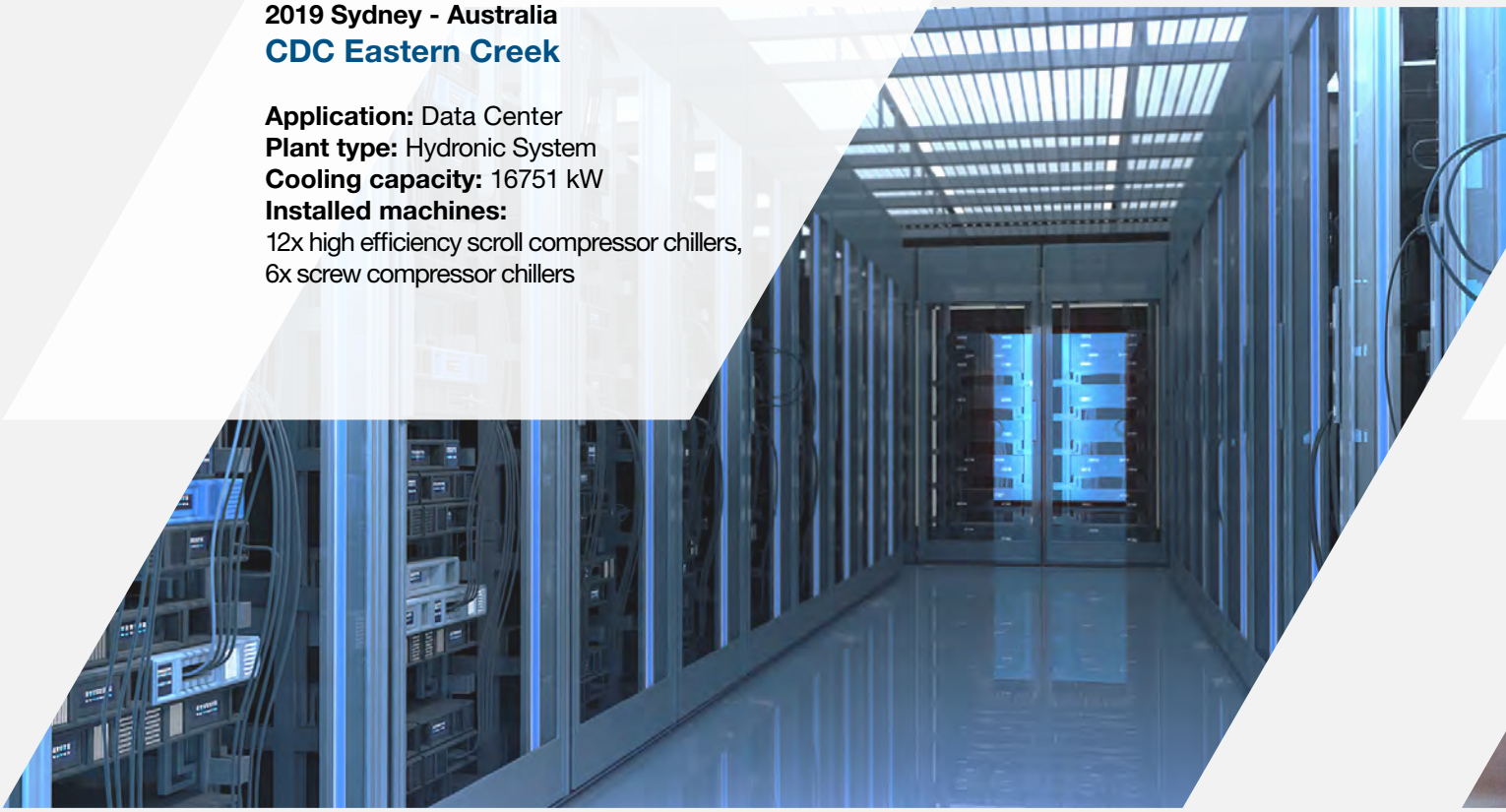
“BY FAR THE BEST PROOF IS EXPERIENCE”

Sir Francis Bacon
British Philosopher (1561 - 1626)

2019 Sydney - Australia

CDC Eastern Creek

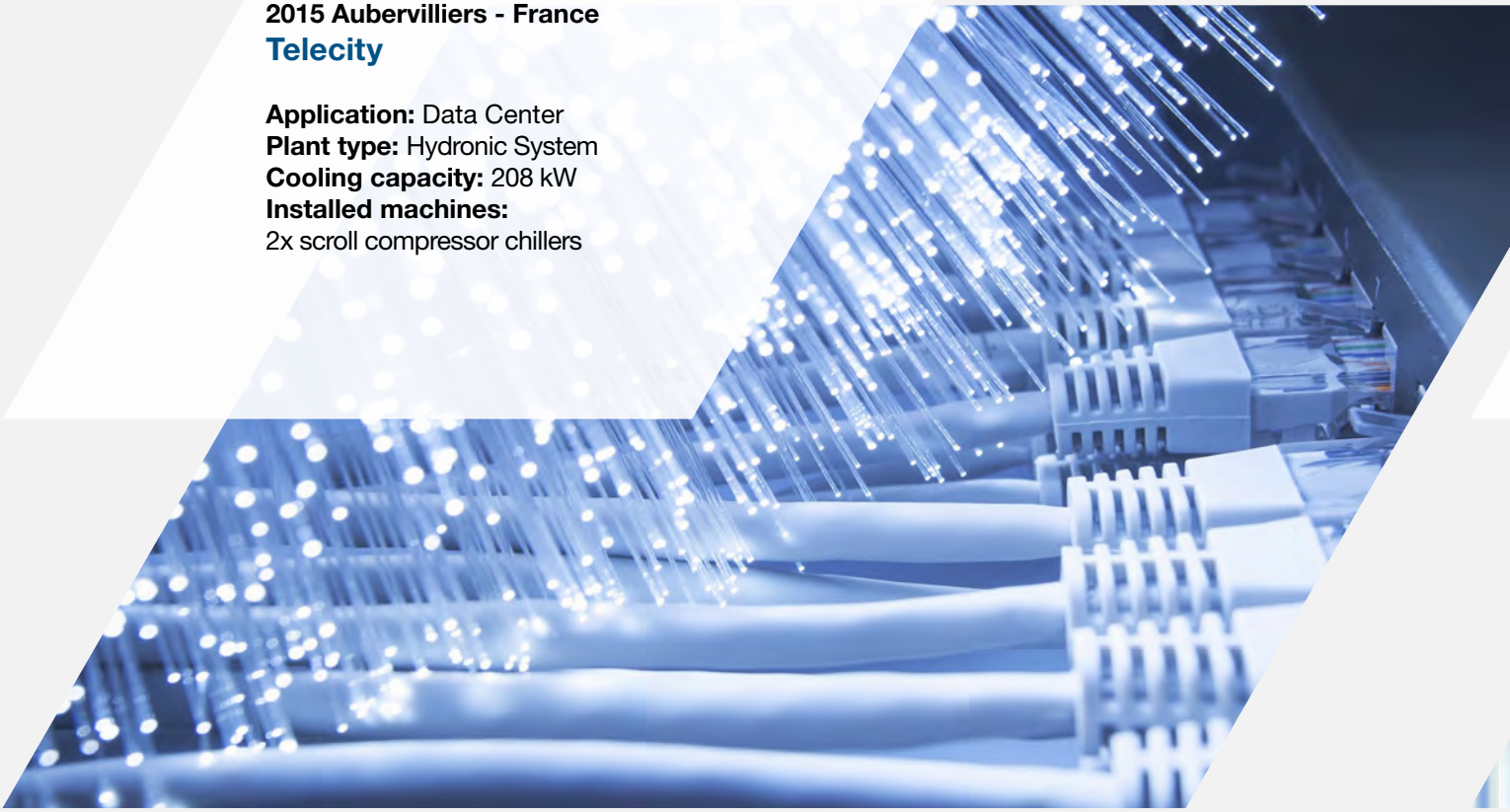
Application: Data Center
Plant type: Hydronic System
Cooling capacity: 16751 kW
Installed machines:
12x high efficiency scroll compressor chillers,
6x screw compressor chillers



2015 Aubervilliers - France

Telecity

Application: Data Center
Plant type: Hydronic System
Cooling capacity: 208 kW
Installed machines:
2x scroll compressor chillers

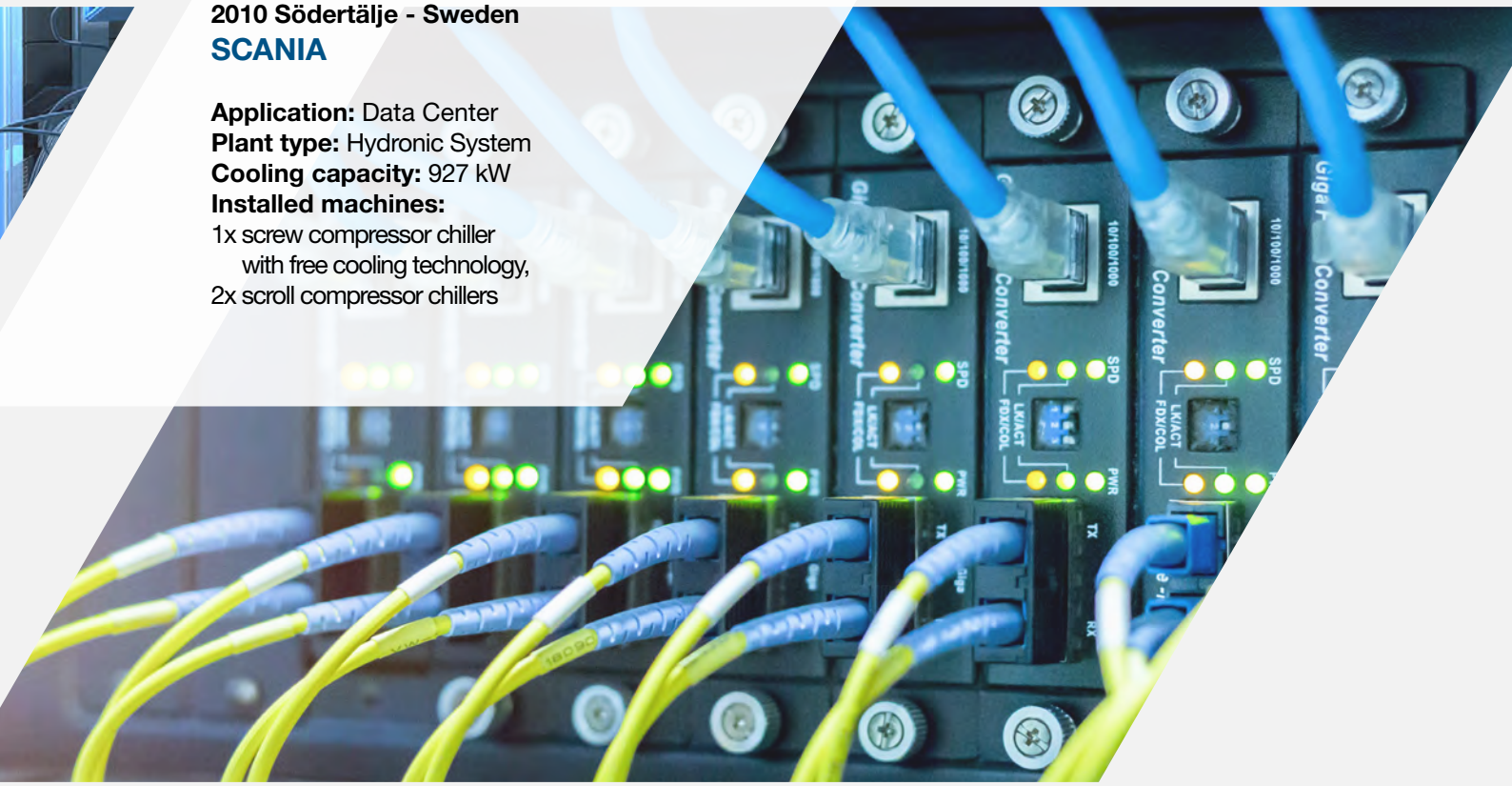


Every project is characterised by different needs and system specifications for various climates. All these projects share high energy efficiency, maximum integration, and total reliability resulting from the RC brand experience.

2010 Södertälje - Sweden

SCANIA

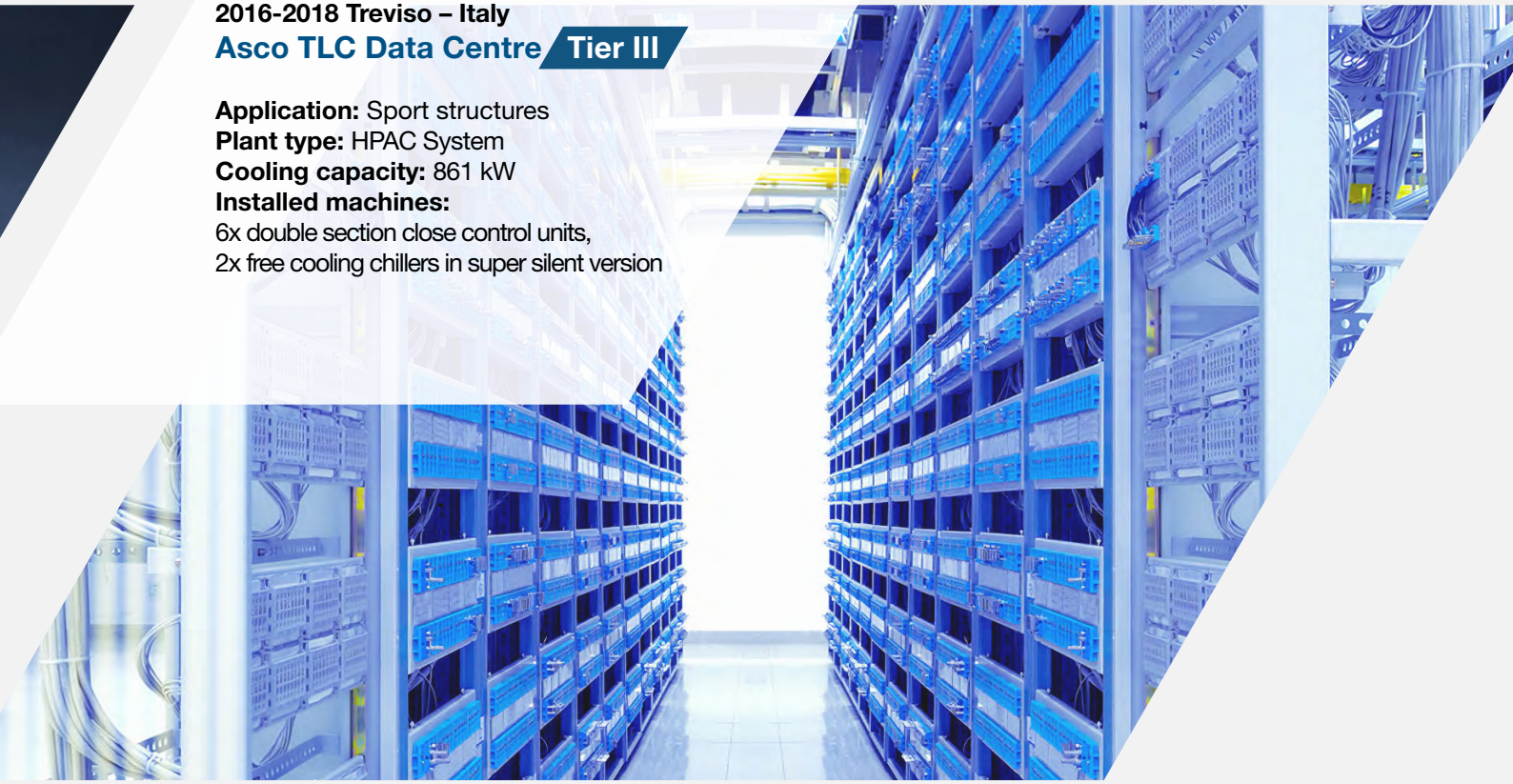
Application: Data Center
Plant type: Hydronic System
Cooling capacity: 927 kW
Installed machines:
1x screw compressor chiller
with free cooling technology,
2x scroll compressor chillers



2016-2018 Treviso – Italy

Asco TLC Data Centre Tier III

Application: Sport structures
Plant type: HPAC System
Cooling capacity: 861 kW
Installed machines:
6x double section close control units,
2x free cooling chillers in super silent version



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for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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