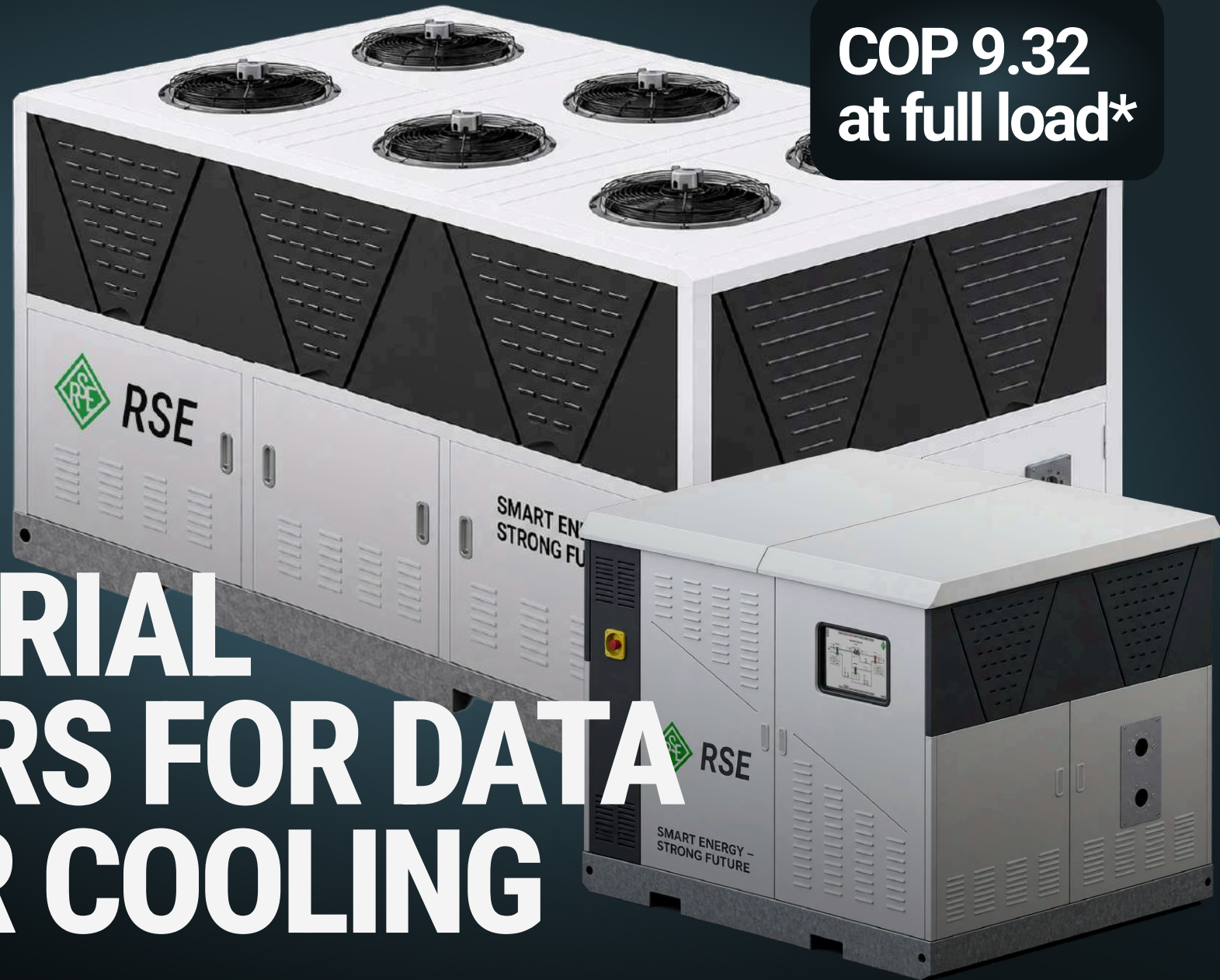




RSE

**COP 9.32
at full load***



INDUSTRIAL CHILLERS FOR DATA CENTER COOLING

NATURAL R290 · OIL-FREE TURBO TECHNOLOGY · INTELLIGENT MULTI-COMPRESSOR CONTROL

*CALCULATED COOLING COP AT SST 86°F / SDT 113°F (30°C / 45°C). SYSTEM PERFORMANCE DEPENDS ON CONFIGURATION AND OPERATING CONDITIONS.

BUILT FOR MISSION-CRITICAL DATA CENTER COOLING

**COP 9.32
at full load***

Data centers require cooling infrastructure that combines high efficiency, continuous operation and precise capacity control as computing loads change.

RSE's oil-free turbocompressor chillers deliver scalable cooling through a modular multi-compressor architecture and intelligent capacity control.

HIGH FULL-LOAD EFFICIENCY

PRECISE CAPACITY CONTROL

MODULAR MULTI-COMPRESSOR DESIGN

OIL-FREE OPERATION

NATURAL R290 REFRIGERANT



*CALCULATED COOLING COP AT SST 86°F / SDT 113°F (30°C / 45°C). SYSTEM PERFORMANCE DEPENDS ON CONFIGURATION AND OPERATING CONDITIONS.

ENGINEERED BY RSE

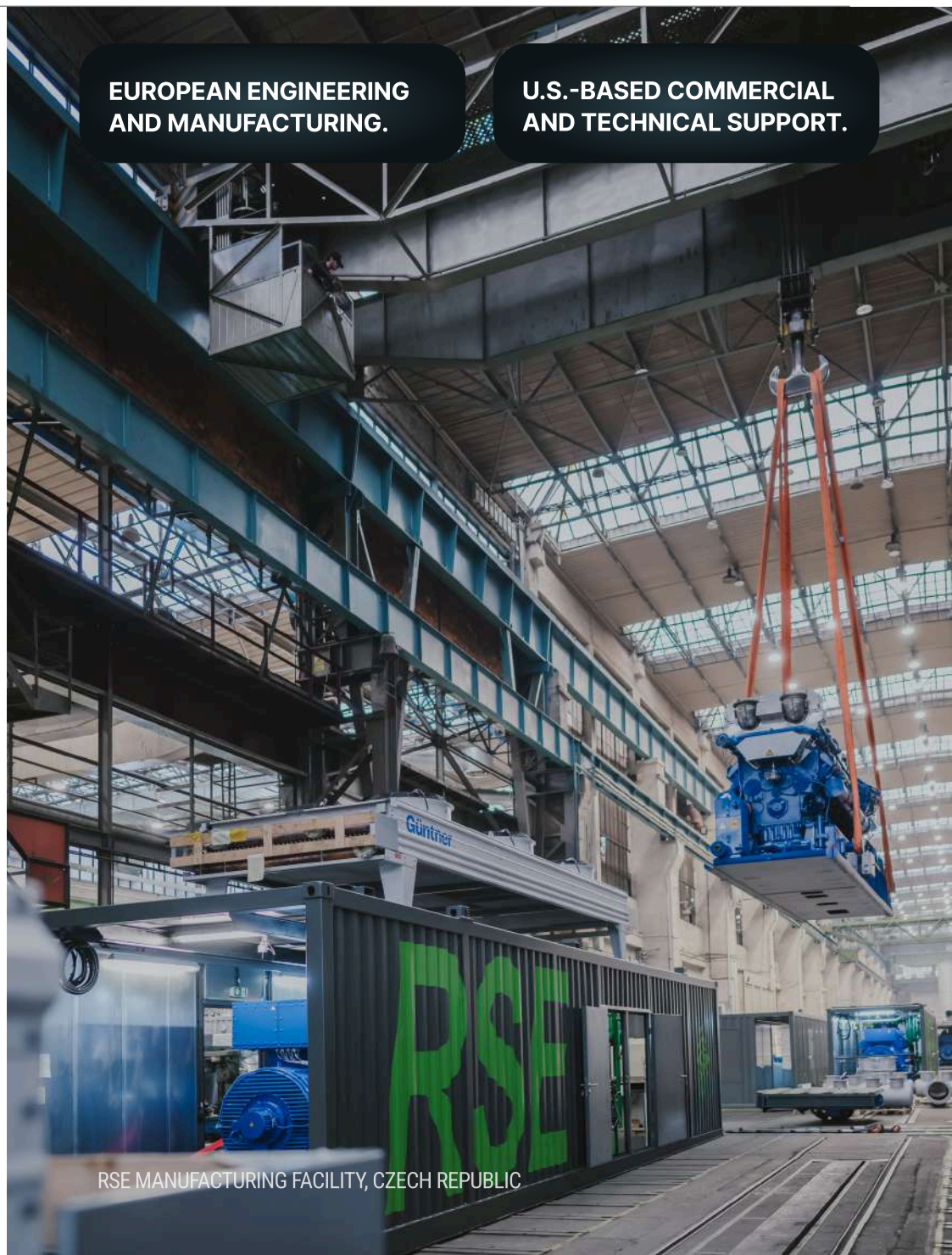
RSE is an engineering and manufacturing company delivering integrated energy solutions for mission-critical infrastructure. Our portfolio includes cogeneration systems, diesel power generation, battery energy storage, industrial heat pumps, chillers and modular boiler systems. We design, manufacture and integrate individual technologies and complete energy systems - from engineering and production to commissioning and lifecycle support.

1.5 GW

Realized and
contracted
energy projects

8

International offices
supporting global
projects



OIL-FREE TURBOCOMPRESSOR TECHNOLOGY

At the heart of RSE's MT chiller and heat pump platform is a high-speed, oil-free centrifugal turbocompressor. Its rotor is supported by self-acting gas-dynamic bearings that create a stabilizing film of refrigerant gas during operation - eliminating mechanical contact at operating speed. With no compressor oil circuit and no electromagnetic bearing control system, the technology reduces mechanical losses, wear and maintenance requirements. Variable-speed control continuously adapts compressor output to actual demand, delivering precise capacity control and high efficiency across the operating range.

OIL-FREE CENTRIFUGAL TECHNOLOGY

No compressor oil circuit, oil pumps, filters or separators – reducing maintenance requirements and eliminating oil-related efficiency losses.

PROVEN DURABILITY

Validated through more than 500,000 start-stop cycles.*

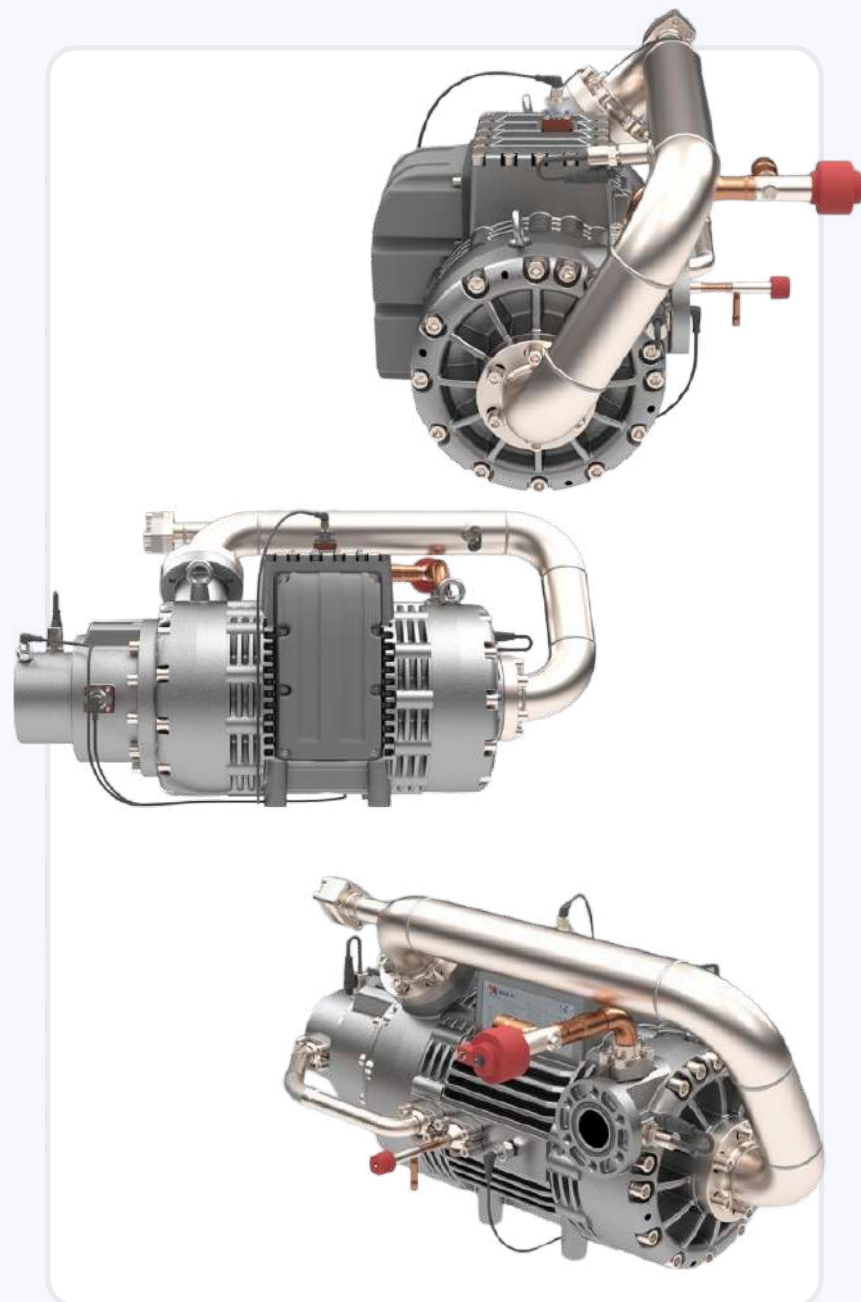
*Based on compressor manufacturer test data.

GAS-DYNAMIC BEARINGS

A stabilizing film of refrigerant gas supports the rotor during operation, minimizing mechanical contact, friction and wear.

PRECISE CAPACITY CONTROL

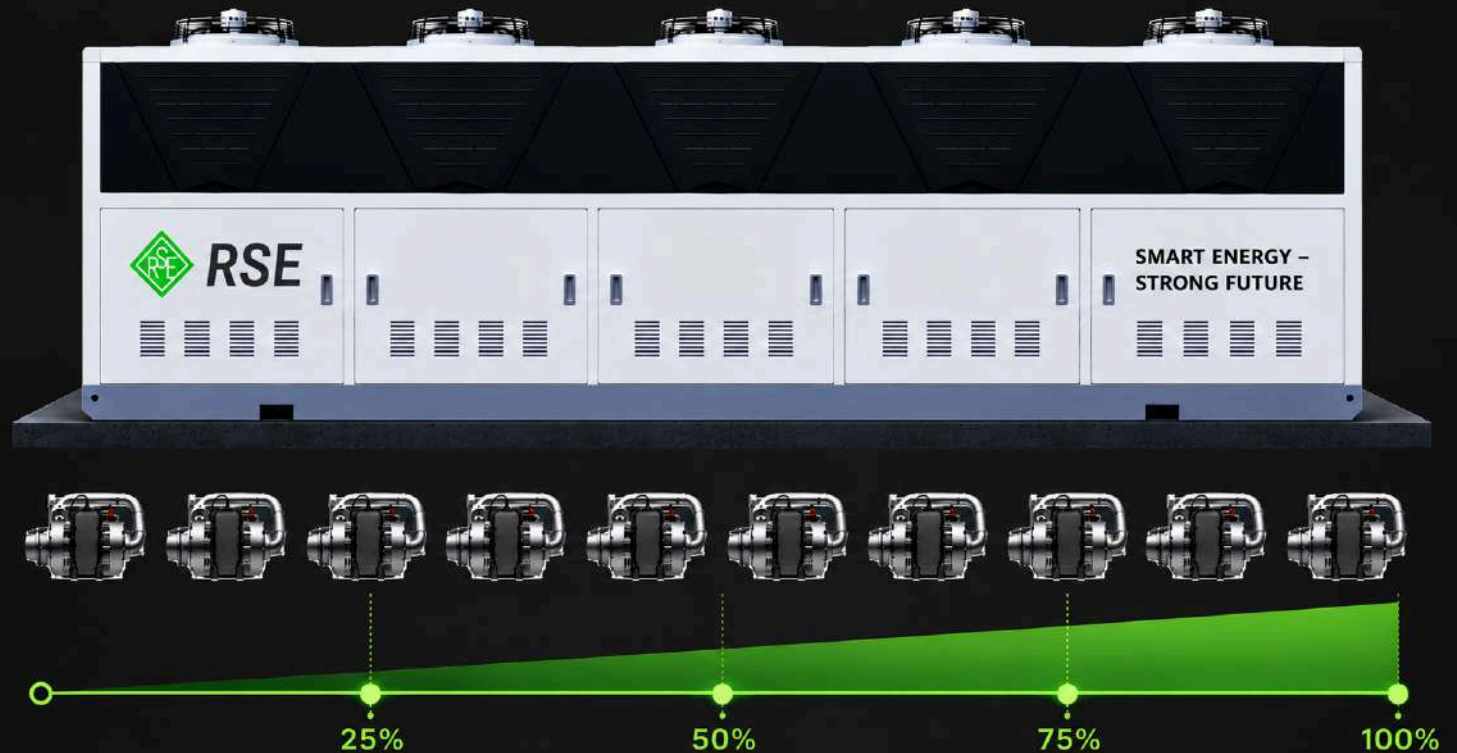
Variable-speed operation continuously adapts compressor output to actual cooling demand



MULTI-COMPRESSOR ARCHITECTURE

- Intelligent cascade control
- Capacity matched to demand
- Modular capacity scaling

Individual compressor modules are activated and speed-controlled according to actual cooling demand, allowing the system to deliver only the capacity required.



COOLING CAPACITY FOLLOWS THE LOAD – NOT THE OTHER WAY AROUND

NATURAL R290. ENGINEERED SAFETY.

R290 is a natural refrigerant combining strong thermodynamic performance with ultra-low global warming potential and zero ozone depletion potential. In RSE units, its use is supported by integrated refrigerant detection, strategic sensor placement and an automated safety response sequence.



CONTINUOUS PROPANE DETECTION

The integrated Evikon E2630-LEL sensor continuously monitors propane concentration inside the refrigeration compartment.



STRATEGIC SENSOR PLACEMENT

The sensor is positioned at the lowest point of the refrigeration compartment, where propane may accumulate because it is heavier than air.



AUTOMATED SAFETY RESPONSE

When predefined thresholds are reached, the control system automatically activates ventilation, generates an alarm and initiates a controlled compressor shutdown.

**FROM REFRIGERANT DETECTION TO AUTOMATED SYSTEM RESPONSE –
SAFETY IS ENGINEERED INTO THE UNIT**

ONE CORE ARCHITECTURE. TWO PRODUCT LINES.

RSE industrial chillers and heat pumps are built on a shared modular platform combining natural R290 refrigerant, oil-free centrifugal turbocompressors, gas-dynamic bearings and intelligent multi-compressor control.

INDUSTRIAL CHILLERS

High-efficiency cooling for industrial and mission-critical applications.

290 kW–
3.5 MW



INDUSTRIAL HEAT PUMPS

High-efficiency heating for industrial processes, district energy and thermal infrastructure.

350 kW–
4.10 MW



COOLING AND HEATING. ENGINEERED ON ONE PLATFORM.

ONE CHILLER PLATFORM. THREE OPERATING RANGES.

HP/MT 290

290–2,900 kW cooling capacity

SST: +5°C to +35°C

SDT: up to +57°C

60–600 kW electrical input

HP/MT 350

350–3,500 kW cooling capacity

SST: –7°C to +35°C

SDT: up to +57°C

60–600 kW electrical input

HP/MT 450

300–3,000 kW cooling capacity

SST: –15°C to +35°C

SDT: up to +65°C

150–1,500 kW electrical input

*Capacity and electrical input ranges are based on cascades of identical compressor modules. Final performance depends on the selected operating point and system configuration.

SELECT THE OPERATING RANGE. SCALE THE REQUIRED CAPACITY.

MEET THE RSE HP/MT 350 OIL-FREE R290 CHILLER

The RSE 350 platform is configured for either cooling or heating according to project requirements. Operating mode is defined by the selected unit configuration.

302.3 kW

Nominal cooling capacity*

60 kW

Turbocompressor power

8.8 kg R290

Refrigerant charge

-7°C

Minimum cold-water
supply temperature

64 dB(A) sound
power level

3PE ~ 400V/440V/480V
configuration available

25 m³/h cooling-
side flow rate



CONFIGURED FOR COOLING. ENGINEERED FOR PERFORMANCE.

RSE 350 HP/MT PERFORMANCE

COP 9.32
at full load*

Power level	Cooling capacity QC (kW)	Power input P (kW)	COP cooling	Heating capacity QH (kW)	Discharge temp. (°C)
100 %	428.9	46.0	9.32	474.9	60.2
70 %	392.8	39.9	9.84	432.7	61.1
50 %	341.4	30.2	11.30	371.6	57.9
40 %	282.2	24.2	11.66	306.4	57.5
30 %	212.8	18.1	11.76	230.9	57.4

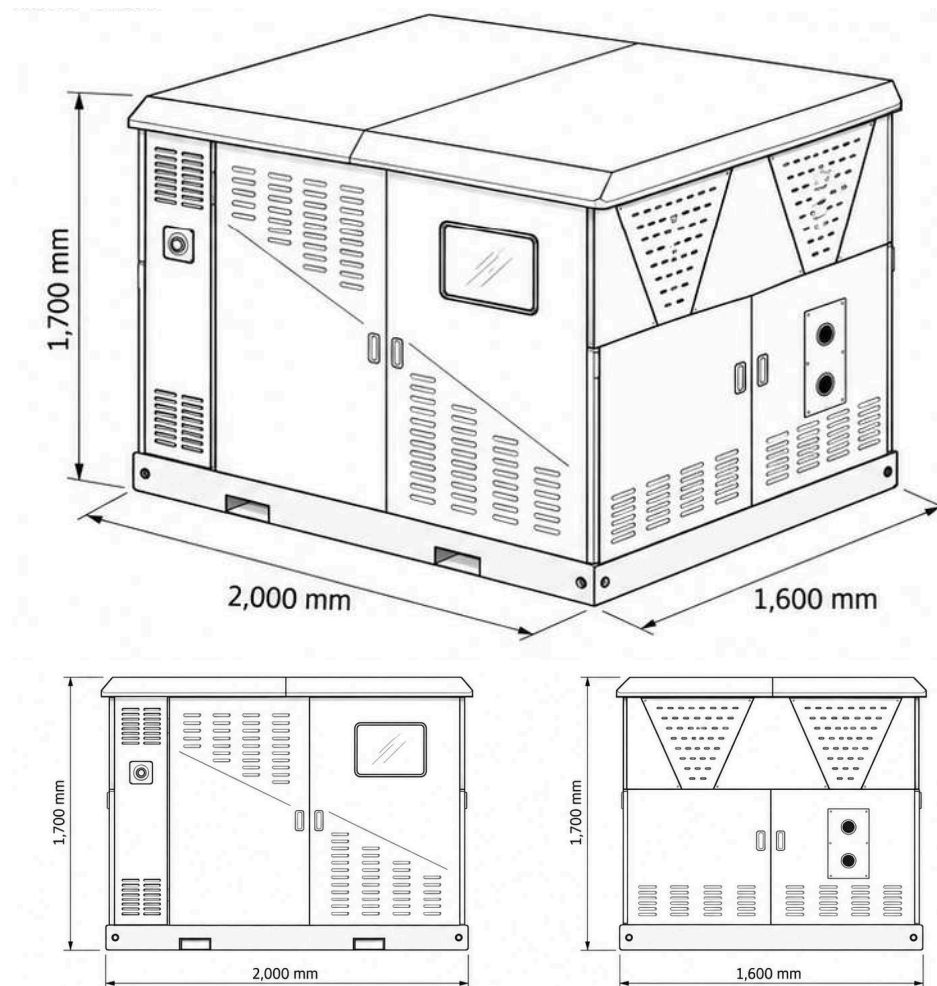
$$\begin{array}{ccccc} 428.9 \text{ KW} & \div & 46.0 \text{ KW} & = & 9.32 \\ \text{Cooling capacity} & & \text{Power input} & & \text{COP} \end{array}$$

SST 86°F / SDT 113°F
SST 30°C / SDT 45°C

*At SST 86°F / SDT 113°F (30°C / 45°C) operating conditions.

RSE 350 HP/MT – TECHNICAL DATA

Parameter	Value
Unit type	Chiller
Operating mode	Cooling
Nominal cooling capacity	302.3 kW
Cooling operating point	W10/W7
Cooling-side flow rate	25 m ³ /h
Minimum cold-water supply temperature	-7°C
Turbocompressor power	60 kW
Nominal current	120 A
Electrical connection	400/440/460/480 V, 50/60 Hz
Resistance to short-term voltage dips	up to 50 ms
Refrigerant	R290
Refrigerant charge	8.8 kg
Sound power	64 dB(A)
Unit weight	1,216 kg



Nominal cooling performance according to EN 14511
at W10/W7 operating conditions.

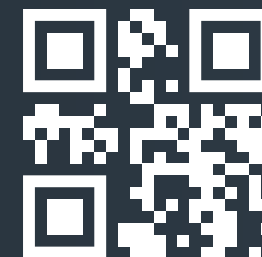


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All technical specifications and parameters are provided for informational purposes and may be changed by the manufacturer without prior notice.
Actual performance depends on operating conditions.

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