

# HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

## Performance data

### Application: Refrigeration & AC

|                                    |                  |                                      |                     |
|------------------------------------|------------------|--------------------------------------|---------------------|
| Refrigerant                        | R22              | Compressor refrigeration capacity    | 2.50 kW             |
| Reference temperature              | Dew point        | Evaporator refrigeration capacity    | 2.50 kW             |
| Power supply                       | 50 Hz, 400 V     | Power consumption                    | 1.88 kW             |
| Supply frequency                   | 50 Hz            | Current draw (400 V)                 | 4.35 A              |
| Evaporating temperature            | -35.0 °C         | Coefficient of performance (COP/EER) | 1.33                |
| <i>Evaporating pressure (abs.)</i> | <i>1.32 bar</i>  | Condensing capacity                  | 4.10 kW             |
| Condensing temperature             | 40.0 °C          | Mass flow                            | 0.014 kg/s          |
| <i>Condensing pressure (abs.)</i>  | <i>15.33 bar</i> | Discharge end temperature            | -- °C <sup>1)</sup> |
| Suction gas temperature            | 20 °C            |                                      |                     |
| Subcooling (outside cond.)         | 0 K              |                                      |                     |
| Usable superheat                   | 100%             |                                      |                     |

*Preliminary capacity data.*

- 1) The information about the discharge end temperature is a purely calculated value. Among other things, the heat dissipation of the compressor is not taken into account. In reality, the deviations from the actually measured discharge end temperature can vary depending on e.g. the ambient temperature, superheat, etc. The displayed discharge end temperature is limited to a minimum value of 60°C, which is indicated by a preceding "<" sign.

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 1 of 9

VAP 11.12.0

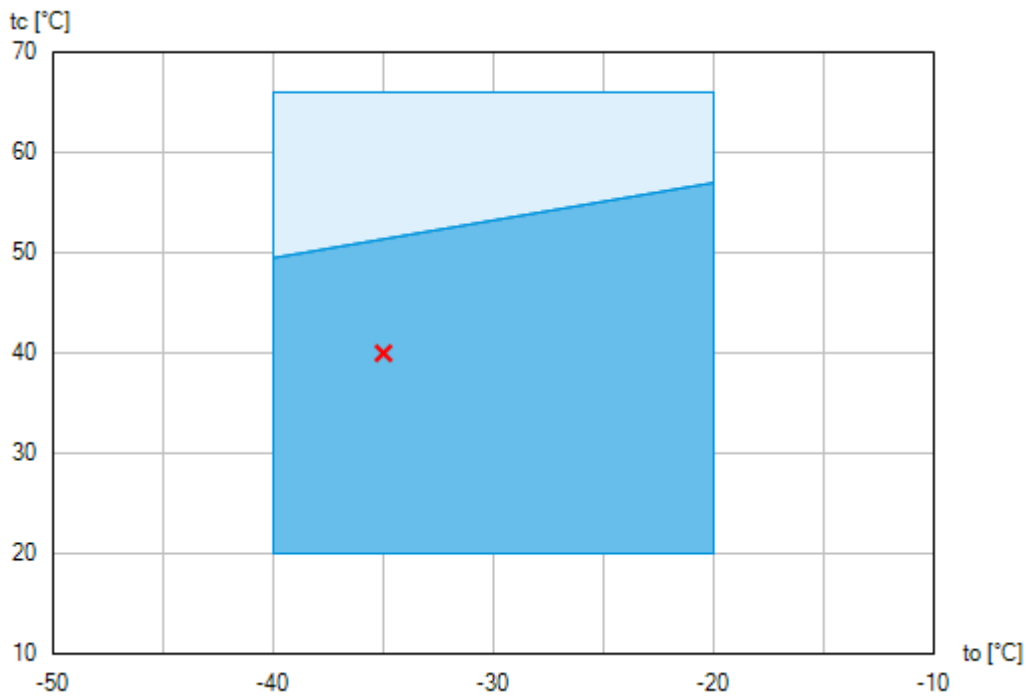
# HA34e/215-4



Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

## Operating limits



-  Unlimited application range
-  Reduced suction gas temperature ( $\Delta t_{oh} < 20K$ )

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation. Axis values refer to dew point (saturated vapour line).

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 2 of 9

VAP 11.12.0

# HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

## Technical data

|  |                                  |
|--|----------------------------------|
| Number of cylinders / Bore / Stroke                          | 4 / 41,5 mm / 40 mm              |
| Displacement 50/60 Hz (1450/1740 1/min)                      | 18,80 / 22,60 m <sup>3</sup> /h  |
| Voltage <sup>1)</sup>  | 220-240V Δ / 380-420V Y -3- 50Hz |
|  | 265-290V Δ / 440-480V Y -3- 60Hz |
| Max. working current <sup>2)</sup>                           | 12.1 / 7.0 A                     |
| Max. power consumption <sup>2)</sup>                         | 4.0 kW                           |
| Starting current (rotor blocked) <sup>2)</sup>               | 87.0 / 50.0 A                    |
| Motor protection   | INT69 G                          |
| Protection terminal box / HA-fan                             | IP 66 / IP 44                    |
| Voltage HA-fan   | 230 V - 1 - 50/60 Hz, 38 W       |
| Weight   | 94 kg                            |
| Frequency range <sup>3)</sup>                                | 25 - 70 Hz                       |
| Max. permissible overpressure (g) (LP/HP) <sup>4)</sup>      | 19 / 28 bar                      |
| Connection suction line SV                                   | 22 mm - 7/8 "                    |
| Connection discharge line DV                                 | 16 mm - 5/8 "                    |
| Lubrication  | Oil pump                         |
| Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A | BOCKlub E55                      |
| Oil type R22   | BOCKlub A46                      |
| Oil charge   | 1,3 Ltr.                         |
| Dimensions Length / Width / Height                           | 578 / 303 / 318 mm               |

1) Tolerance ( $\pm 10\%$ ) relates to the mean value of the voltage range. Other voltages and current types on request

All data are based on voltage rms values

2) - The stated value for the max. power consumption is valid for the adjusted power supply.

- Starting current (rotor blocked):

- Part winding (PW) motors: Winding 1 / Winding 1+2
- Delta/Star ( $\Delta/Y$ ) motors:  $\Delta$  / Y

- Take account of the max. operating current / max. power consumption for designing motor contractors, feed lines, fuses and motor protection switches. Motor contractors: Consumption category AC3.

3) The maximum permissible working current of the compressor ( $I_{max}$ ) must not be exceeded. Take account of the guidelines for use of frequency inverter (see compressor assembly instruction or selection software).

4) LP = Low pressure  
HP = High pressure

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 3 of 9

VAP 11.12.0

# HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

## Performance data table

Application: Refrigeration & AC

Reference temperature: Dew point

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 20 °C

Subcooling (outside cond.): 0 K

| tc [°C] |        | to [°C] |       |       |       |       |  |  |  |  |  |  |
|---------|--------|---------|-------|-------|-------|-------|--|--|--|--|--|--|
|         |        | -20.0   | -25.0 | -30.0 | -35.0 | -40.0 |  |  |  |  |  |  |
| 15.0    | Q [W]  |         |       |       |       |       |  |  |  |  |  |  |
|         | P [kW] |         |       |       |       |       |  |  |  |  |  |  |
|         | I [A]  |         |       |       |       |       |  |  |  |  |  |  |
| 20.0    | Q [W]  | 7860    | 6240  | 4860  | 3690  | 2710  |  |  |  |  |  |  |
|         | P [kW] | 2.35    | 2.20  | 2.03  | 1.83  | 1.62  |  |  |  |  |  |  |
|         | I [A]  | 4.86    | 4.69  | 4.50  | 4.30  | 4.09  |  |  |  |  |  |  |
| 25.0    | Q [W]  | 7410    | 5850  | 4520  | 3390  | 2460  |  |  |  |  |  |  |
|         | P [kW] | 2.51    | 2.31  | 2.10  | 1.87  | 1.63  |  |  |  |  |  |  |
|         | I [A]  | 5.04    | 4.81  | 4.58  | 4.33  | 4.09  |  |  |  |  |  |  |
| 30.0    | Q [W]  | 6950    | 5450  | 4180  | 3100  | 2200  |  |  |  |  |  |  |
|         | P [kW] | 2.65    | 2.41  | 2.15  | 1.89  | 1.62  |  |  |  |  |  |  |
|         | I [A]  | 5.20    | 4.92  | 4.64  | 4.35  | 4.08  |  |  |  |  |  |  |
| 35.0    | Q [W]  | 6490    | 5050  | 3830  | 2800  | 1930  |  |  |  |  |  |  |
|         | P [kW] | 2.77    | 2.49  | 2.19  | 1.89  | 1.59  |  |  |  |  |  |  |
|         | I [A]  | 5.34    | 5.01  | 4.68  | 4.36  | 4.06  |  |  |  |  |  |  |
| 40.0    | Q [W]  | 6030    | 4660  | 3490  | 2500  | 1670  |  |  |  |  |  |  |
|         | P [kW] | 2.87    | 2.55  | 2.22  | 1.88  | 1.54  |  |  |  |  |  |  |
|         | I [A]  | 5.47    | 5.09  | 4.71  | 4.35  | 4.01  |  |  |  |  |  |  |
| 45.0    | Q [W]  | 5570    | 4260  | 3150  | 2200  | 1410  |  |  |  |  |  |  |
|         | P [kW] | 2.96    | 2.60  | 2.22  | 1.85  | 1.48  |  |  |  |  |  |  |
|         | I [A]  | 5.58    | 5.14  | 4.71  | 4.32  | 3.96  |  |  |  |  |  |  |
| 50.0    | Q [W]  | 5110    | 3870  | 2800  | 1900  | 1140  |  |  |  |  |  |  |
|         | P [kW] | 3.04    | 2.63  | 2.21  | 1.80  | 1.41  |  |  |  |  |  |  |
|         | I [A]  | 5.67    | 5.17  | 4.70  | 4.27  | 3.88  |  |  |  |  |  |  |
| 55.0    | Q [W]  | 4650    | 3470  | 2460  | 1610  | 876   |  |  |  |  |  |  |
|         | P [kW] | 3.09    | 2.64  | 2.18  | 1.74  | 1.31  |  |  |  |  |  |  |
|         | I [A]  | 5.74    | 5.19  | 4.67  | 4.20  | 3.79  |  |  |  |  |  |  |

*Preliminary capacity data.*



Reduced suction gas temperature ( $\Delta t_{oh} < 20K$ )

- to Evaporating temperature
- tc Condensing temperature
- Q Compressor refrigeration capacity
- P Power consumption
- I Current draw

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 4 of 9

VAP 11.12.0

## HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

---

### Scope of supply

Semi-hermetic four cylinder reciprocating compressor with drive motor  
Single-section compressor housing with hermetically integrated electric motor

Winding protection with PTC resistor sensors and electronic trigger unit INT69 G  
115-230 V AC, 50/60 Hz, IP00

Motor is cooled by an integrated ventilator with air deflection hood.  
230 V - 1 - 50/60 Hz, 38 W, 0,17 A

Oil pump

Possibility for connection of oil pressure safety switch MP55

Possibility of connection of oil level controllers ESK, Traxoil, AC+R or CARLY <sup>1)</sup>

Oil charge:

HA: **BOCK**lub A46

HAX: **BOCK**lub E55

Sight glass

Suction and discharge line valve

Inert gas charge

### Accessories

Digital capacity regulator DCR14 230 V - 1 - 50/60 Hz, IP65  
1 digital capacity regulator = 50% residual capacity

Cylinder cover prepared for digital capacity regulator

Oil sump heater  
110-240 V - 1 - 50/60 Hz, 50-120 W, IP66  
PTC heater self-regulating

Oil pressure safety switch MP55 230 V - 1 - 50/60 Hz, IP20 <sup>2)</sup>

USB converter for INT69 G Diagnose <sup>2)</sup>

Thermal protection thermostat per cylinder cover <sup>3)</sup>

INT69 G Diagnose 115-230 V AC, 50/60 Hz, IP00 (INT69 G not applicable)

DP-Modbus Gateway 115-230 V AC, 50/60 Hz, IP00 including adapter cable <sup>2)</sup>

Modbus-LAN Gateway 230 V AC, 50/60 Hz, IP00 <sup>2)</sup>

Step protection

4 anti-vibration pads enclosed

Special voltage and/or frequency (on request)

Subject to change without notice

---

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 5 of 9

VAP 11.12.0

## HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

**Subject: Предварительный расчет**

---

- 
- 1) Only with additional adapter possible
  - 2) Enclosure
  - 3) Mounted

Subject to change without notice

---

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 6 of 9

VAP 11.12.0

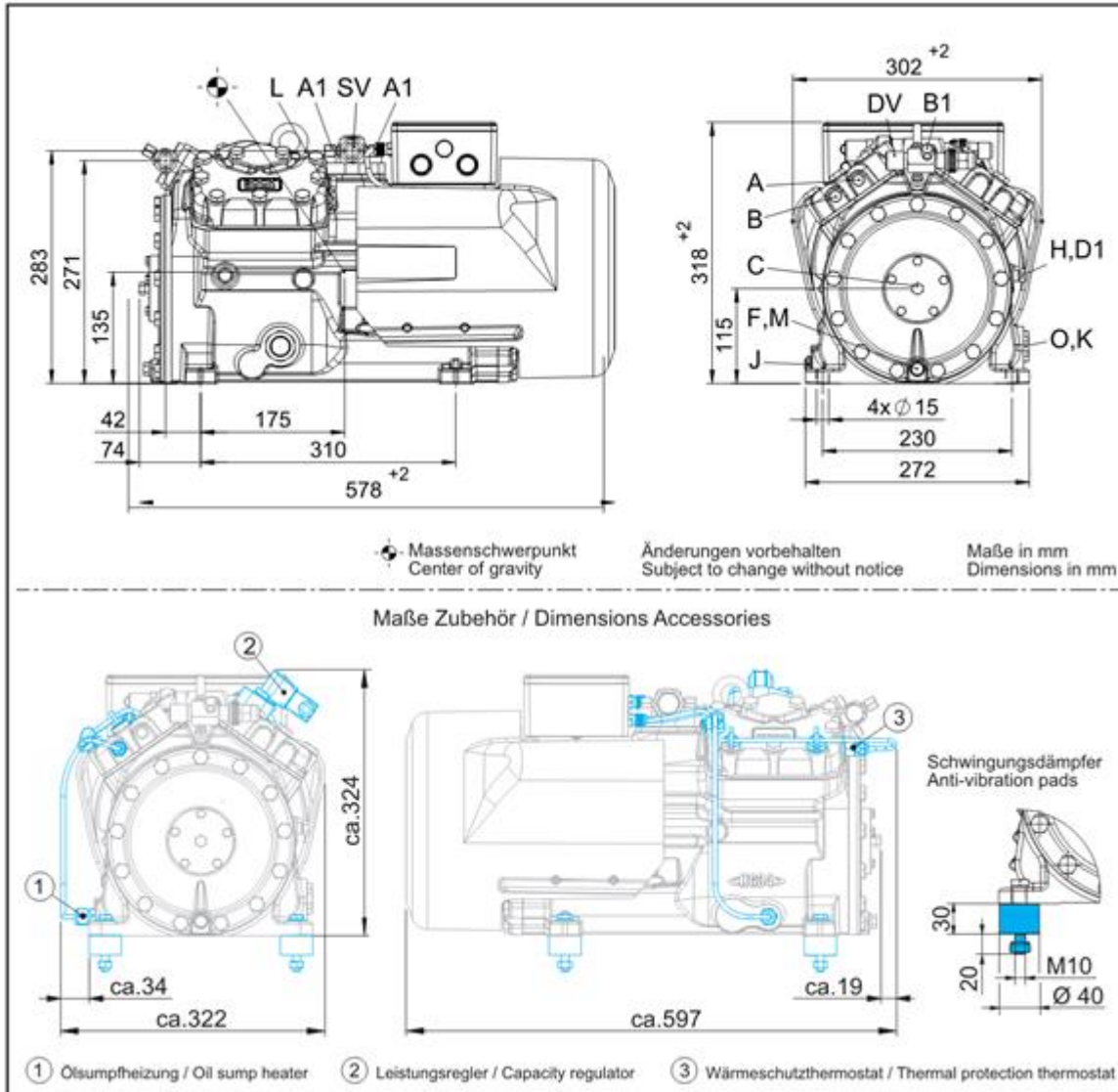
# HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

## Dimensions and connections



Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 7 of 9

VAP 11.12.0

## HA34e/215-4

Engine: 220-240V Δ / 380-420V Y -3- 50Hz

Refrigerant: R22

**Subject: Предварительный расчет**

|    |  |                   |
|----|--|-------------------|
| SV | Suction line valve, tube ø <sup>1)</sup>   | 22 mm - 7/8 "     |
| DV | Discharge line valve, tube ø <sup>1)</sup> | 16 mm - 5/8 "     |
| A  | Connection suction side, not lockable      | 1/8 " NPTF        |
| A1 | Connection suction side, lockable          | 7/16 " UNF        |
| B  | Connection discharge side, not lockable    | 1/8 " NPTF        |
| B1 | Connection discharge side, lockable        | 7/16 " UNF        |
| D1 | Connection oil return from oil separator   | 1/4 " NPTF        |
| E  | Connection oil pressure gauge              | 1/8 " NPTF        |
| F  | Oil drain                                  | M 12 x 1.5        |
| H  | Oil charge plug                            | 1/4 " NPTF        |
| J  | Connection oil sump heater                 | 3/8 " NPTF        |
| K  | Sight glass                                | 1 1/8 " - 18 UNEF |
| L  | Connection thermal protection thermostat   | 1/8 " NPTF        |
| M  | Oil strainer                               | M 12 x 1.5        |
| O  | Connection oil level regulator             | 1 1/8 " - 18 UNEF |

1) Brazing connection

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 8 of 9

VAP 11.12.0



## HA34e/215-4

Engine: 220-240V  $\Delta$  / 380-420V Y -3- 50Hz

Refrigerant: R22

Subject: Предварительный расчет

---

### Product photo



---

Subject to change without notice

To: Промышленная Холодильная  
Компания info@phk-holod.ru

From:

13.02.2023  
Page 9 of 9

VAP 11.12.0