# Technical Data Sheet

Compressor model **HPY12RAa**

Voltage **220-240V 50Hz ~1**

Refrigerant **R600a**

## APPLICATION

| | |
|---|---|
| Application | High-Medium Back Pressure |
| Refrigerant | R600a |
| Evaporating Temp. | -25,0 ºC to 10,0 ºC |
| Expansion | Capillar/Valve |
| Comp. Cooling | Fan cooled |
| Max. ambient temp. | 43,0 ºC |

## COMPRESSOR

| | |
|---|---|
| Displacement | 12,10 cm³ |
| Diameter | 27,00 mm |
| Stroke | 21,13 mm |
| Net Weight | 10,50 Kg |
| Oil type | ISO VG 46 MINER |
| Oil charge | 350 cm³ |

## MOTOR

| | |
|---|---|
| Nominal Power | 1/5 hp |
| Voltage/Frequency | 220-240V 50Hz |
| Voltage range | 187-264 V |
| Type | CSIR |
| Phase number | 1 PH |
| Locked Rotor Amps (LRA) | 12,50 A |
| Max. Cont. Current (MCC) | 2,30 A |
| Main W. resist. at 25ºC | 9,95 Ω |
| Start W. resist. at 25ºC | 18,60 Ω |

## NOMINAL PERFORMANCE

| | ASHRAE | CECOMAF |
|---|---|---|
| Cooling Capacity | 595 kCal/h | 583 W |
| COP | 2,50 W/W | 2,15 W/W |
| EER | 2,15 kCal/Wh | 1,86 kCal/Wh |
| Input Power | 277 W | 270 W |
| Current | 1,82 A | 1,80 A |

## APPROVALS

## TEST CYCLE CONDITIONS

| | **ASHRAE** | **CECOMAF** |
|---|---|---|
| | **HMBP (D)** | **HMBP (C)** |
| Evaporating temp. ($T_e$) | 7,2 ºC | 5,0 ºC |
| Condensing temp. ($T_c$) | 55,0 ºC | 55,0 ºC |
| Liquid temp. ($T_{liq.}$) | 46,0 ºC | 55,0 ºC |
| Ambient temp. ($T_{amb.}$) | 35,0 ºC | 32,0 ºC |
| Suction temp. ($T_{suction}$) | 35,0 ºC | 32,0 ºC |
| Voltage/Frequency | 220 V 50 Hz | 220 V 50 Hz |

## ELECTRICAL COMPONENTS

| | | | | |
|---|---|---|---|---|
| Starting capacitor | 47- 56 µF 330 V | | | |
| Relay | Option 1 | | | |
| Reference | 2014 127. | | | |
| Pick-Up | 4,80 A | | | |
| Drop-Out | 4,10 A | | | |
| Protector | Option 1 | Option 2 | Option 3 | |
| Reference | MST63AMK | T0069 | AE26FHY | |
| Current | 7,10 A | 7,10 A | 7,10 A | |
| Time check | 7,5-14 seg | 7,5-14 seg | 7,5-14 seg | |
| Disc temp. (Open/Close) | 105,00 / 61,00 ºC | 105,00 / 62,00 ºC | 105,00 / 62,00 ºC | |

This product is approved for R290 and R600a regarding explosion safety according to standard EN 60335-1 and EN 60335-2-34

# Technical Data Sheet

cubigel compressors

## ASHRAE

| Tc °C | Te °C | Cooling Capacity kCal/h | Consumption W | Current A | COP W/W | EER kCal/Wh |
|---|---|---|---|---|---|---|
| 40 | -25 | 165 | 158 | 1,49 | 1,21 | 1,04 |
| 40 | -20 | 219 | 171 | 1,52 | 1,49 | 1,28 |
| 40 | -15 | 284 | 184 | 1,55 | 1,80 | 1,54 |
| 40 | -10 | 361 | 197 | 1,58 | 2,13 | 1,83 |
| 40 | -5 | 450 | 210 | 1,62 | 2,49 | 2,14 |
| 40 | 0 | 549 | 223 | 1,66 | 2,86 | 2,46 |
| 40 | 5 | 660 | 236 | 1,69 | 3,25 | 2,80 |
| 40 | 7,2 | 713 | 242 | 1,71 | 3,43 | 2,95 |
| 40 | 10 | 783 | 249 | 1,73 | 3,65 | 3,14 |
| 45 | -25 | 152 | 158 | 1,49 | 1,12 | 0,96 |
| 45 | -20 | 202 | 173 | 1,52 | 1,36 | 1,17 |
| 45 | -15 | 263 | 188 | 1,56 | 1,63 | 1,40 |
| 45 | -10 | 336 | 203 | 1,60 | 1,93 | 1,66 |
| 45 | -5 | 420 | 218 | 1,64 | 2,25 | 1,93 |
| 45 | 0 | 516 | 232 | 1,68 | 2,58 | 2,22 |
| 45 | 5 | 623 | 247 | 1,73 | 2,93 | 2,52 |
| 45 | 7,2 | 674 | 254 | 1,75 | 3,09 | 2,66 |
| 45 | 10 | 741 | 262 | 1,77 | 3,29 | 2,83 |
| 50 | -25 | 140 | 159 | 1,49 | 1,02 | 0,88 |
| 50 | -20 | 185 | 175 | 1,53 | 1,23 | 1,06 |
| 50 | -15 | 243 | 192 | 1,57 | 1,47 | 1,26 |
| 50 | -10 | 311 | 208 | 1,61 | 1,74 | 1,49 |
| 50 | -5 | 391 | 225 | 1,66 | 2,02 | 1,74 |
| 50 | 0 | 483 | 242 | 1,71 | 2,32 | 2,00 |
| 50 | 5 | 585 | 258 | 1,76 | 2,64 | 2,27 |
| 50 | 7,2 | 634 | 265 | 1,78 | 2,78 | 2,39 |
| 50 | 10 | 700 | 275 | 1,81 | 2,96 | 2,55 |
| 55 | -25 | 127 | 159 | 1,49 | 0,93 | 0,80 |
| 55 | -20 | 169 | 177 | 1,53 | 1,11 | 0,95 |
| 55 | -15 | 222 | 196 | 1,58 | 1,32 | 1,13 |
| 55 | -10 | 286 | 214 | 1,63 | 1,55 | 1,34 |
| 55 | -5 | 362 | 232 | 1,68 | 1,81 | 1,56 |
| 55 | 0 | 449 | 251 | 1,74 | 2,08 | 1,79 |
| 55 | 5 | 548 | 269 | 1,79 | 2,37 | 2,04 |
| 55 | 7,2 | 595 | 277 | 1,82 | 2,50 | 2,15 |
| 55 | 10 | 658 | 287 | 1,85 | 2,66 | 2,29 |
| 60 | -25 | 114 | 159 | 1,49 | 0,83 | 0,72 |
| 60 | -20 | 152 | 179 | 1,54 | 0,98 | 0,85 |
| 60 | -15 | 201 | 200 | 1,59 | 1,17 | 1,01 |
| 60 | -10 | 261 | 220 | 1,65 | 1,38 | 1,19 |
| 60 | -5 | 333 | 240 | 1,70 | 1,61 | 1,39 |
| 60 | 0 | 416 | 260 | 1,76 | 1,86 | 1,60 |
| 60 | 5 | 510 | 280 | 1,83 | 2,12 | 1,82 |
| 60 | 7,2 | 556 | 289 | 1,86 | 2,24 | 1,92 |
| 60 | 10 | 616 | 300 | 1,90 | 2,39 | 2,06 |

## CECOMAF

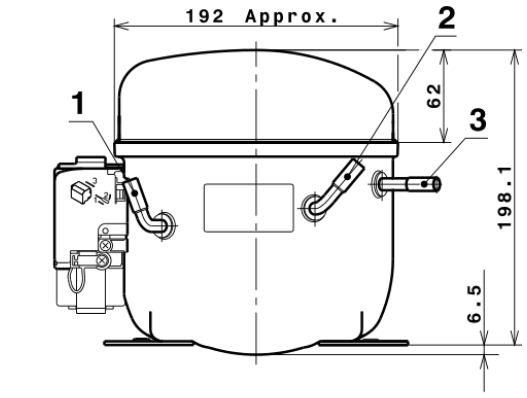
| Tc °C | Te °C | Cooling Capacity W | Consumption W | Current A | COP W/W | EER kCal/Wh |
|---|---|---|---|---|---|---|
| 40 | -25 | 178 | 159 | 1,49 | 1,12 | 0,97 |
| 40 | -20 | 237 | 172 | 1,52 | 1,38 | 1,19 |
| 40 | -15 | 308 | 185 | 1,55 | 1,66 | 1,44 |
| 40 | -10 | 391 | 198 | 1,59 | 1,97 | 1,70 |
| 40 | -5 | 486 | 211 | 1,62 | 2,30 | 1,99 |
| 40 | 0 | 594 | 224 | 1,66 | 2,64 | 2,29 |
| 40 | 5 | 713 | 238 | 1,70 | 3,00 | 2,59 |
| 40 | 7,2 | 770 | 243 | 1,71 | 3,16 | 2,73 |
| 40 | 10 | 845 | 251 | 1,74 | 3,37 | 2,91 |
| 45 | -25 | 164 | 159 | 1,49 | 1,03 | 0,89 |
| 45 | -20 | 218 | 174 | 1,53 | 1,25 | 1,08 |
| 45 | -15 | 284 | 189 | 1,56 | 1,50 | 1,30 |
| 45 | -10 | 362 | 204 | 1,60 | 1,78 | 1,53 |
| 45 | -5 | 453 | 219 | 1,64 | 2,07 | 1,79 |
| 45 | 0 | 555 | 234 | 1,69 | 2,38 | 2,05 |
| 45 | 5 | 670 | 249 | 1,73 | 2,69 | 2,33 |
| 45 | 7,2 | 724 | 255 | 1,75 | 2,84 | 2,45 |
| 45 | 10 | 797 | 263 | 1,78 | 3,02 | 2,61 |
| 50 | -25 | 150 | 159 | 1,49 | 0,94 | 0,81 |
| 50 | -20 | 199 | 176 | 1,53 | 1,13 | 0,97 |
| 50 | -15 | 260 | 193 | 1,57 | 1,35 | 1,16 |
| 50 | -10 | 333 | 209 | 1,62 | 1,59 | 1,37 |
| 50 | -5 | 419 | 226 | 1,66 | 1,85 | 1,60 |
| 50 | 0 | 516 | 243 | 1,71 | 2,13 | 1,84 |
| 50 | 5 | 626 | 260 | 1,76 | 2,41 | 2,08 |
| 50 | 7,2 | 678 | 267 | 1,79 | 2,54 | 2,20 |
| 50 | 10 | 748 | 276 | 1,82 | 2,71 | 2,34 |
| 55 | -25 | 135 | 160 | 1,49 | 0,85 | 0,73 |
| 55 | -20 | 179 | 178 | 1,54 | 1,01 | 0,87 |
| 55 | -15 | 236 | 197 | 1,58 | 1,20 | 1,04 |
| 55 | -10 | 304 | 215 | 1,63 | 1,41 | 1,22 |
| 55 | -5 | 385 | 234 | 1,69 | 1,65 | 1,42 |
| 55 | 0 | 478 | 252 | 1,74 | 1,90 | 1,64 |
| 55 | 5 | 583 | 270 | 1,80 | 2,15 | 1,86 |
| 55 | 7,2 | 633 | 279 | 1,83 | 2,27 | 1,96 |
| 55 | 10 | 700 | 289 | 1,86 | 2,42 | 2,09 |
| 60 | -25 | 121 | 160 | 1,49 | 0,75 | 0,65 |
| 60 | -20 | 160 | 180 | 1,54 | 0,89 | 0,77 |
| 60 | -15 | 212 | 201 | 1,59 | 1,06 | 0,91 |
| 60 | -10 | 275 | 221 | 1,65 | 1,25 | 1,08 |
| 60 | -5 | 351 | 241 | 1,71 | 1,46 | 1,26 |
| 60 | 0 | 439 | 261 | 1,77 | 1,68 | 1,45 |
| 60 | 5 | 539 | 281 | 1,83 | 1,92 | 1,65 |
| 60 | 7,2 | 587 | 290 | 1,86 | 2,02 | 1,75 |
| 60 | 10 | 651 | 302 | 1,90 | 2,16 | 1,87 |

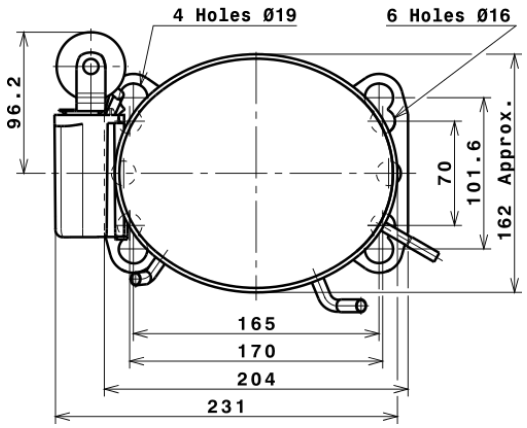
### EN12900

| X | Cooling Capacity (W) | Consumption (W) | Current (A) | Mass Flow (kg/h) |
|---|---|---|---|---|
| 1 | 898,1867952431 | 154,4901925093 | 1,4298185560 | 8,4477507298598 |
| 2 | 30,2580421440 | -0,1815670370 | -0,0009632923 | 0,3113347990704 |
| 3 | -7,9213855474 | 1,8824169495 | 0,0059938314 | -0,033352794194971 |
| 4 | 0,2362493276 | 0,0007634070 | 0,0000595796 | 0,0035522796825689 |
| 5 | -0,2014102504 | 0,0725583690 | 0,0002333014 | -0,00057246073755997 |

| Equation | $x_1 + x_2Te + x_3Tc + x_4Te^2 + x_5TeTc$ |
|---|---|

## COMPRESSOR DIMENSIONS

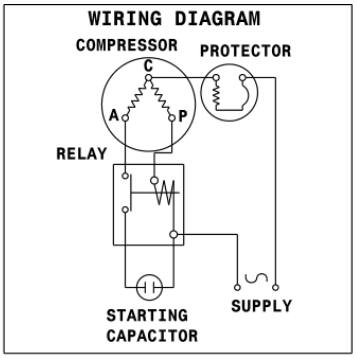


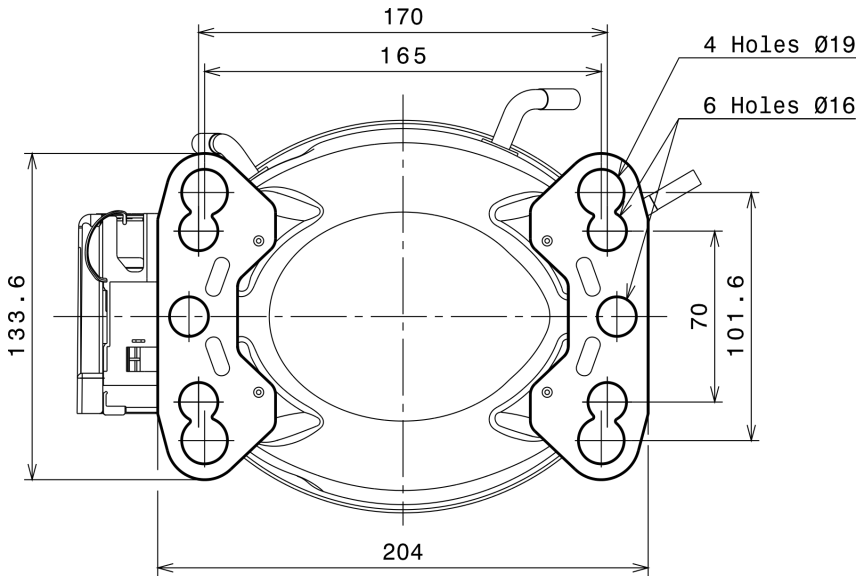

| | DESIGNATION | INTERNAL DIAM. |
|---|---|---|
| 1 | Suction | 8,1 mm |
| 2 | Service | 8,1 mm |
| 3 | Discharge | 6,5 mm |

## WIRING DIAGRAMS AND ELECTRICAL ASSEMBLY

### CSIR CONNECTION (L, P ranges)



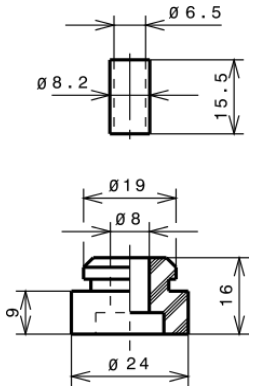
## FIXINGS




## SILENT BLOCKS (MOUNTING ACCESSORIES)

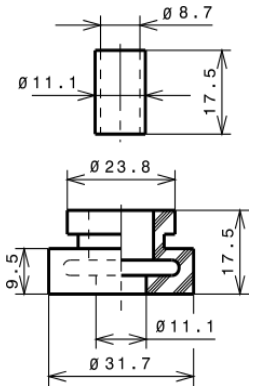
### STANDARD

**Ø16 holes (170x70 net)**



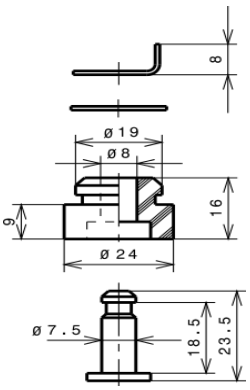

### AMERICAN FEET

**Ø19 holes (165x101.6 net)**




### SNAP-ON

**Ø16 holes (170x70 net)**




## SOA

**SOA R600a HMBP**