

ITF Series Inverter Driven Screw Chillers With Internal Free Cooling, 250 – 1340kW

R134a

High Energy Efficient Class A
 Water Chillers up to 3.2MW



ITF series possible configurations

- 1 or 2 independent refrigerant circuits
- Ecology economiser technology for each circuit
- Twin screw compressors with individual inverter
- Double electronic master board control
- Two main switches (one for each power circuit)
- One shell and tube evaporator for each circuit
- Each evaporator fitted with pipes and flange
- Two flow switches (one for each evaporator)
- Two pumps (one for each circuit)
- Condenser coil protection
- Thermo-regulated electric panel
- Secondary electric panel for fans inverter
- Fans with inverter technology
- Individual fans overload
- Fast start ramp software
- No starting currents
- Microprocessor electronic control through RS485 (TCP/IP)
- Operation up to 45°C ambient at full load, 50°C at reduced load

Free cooling topics

- EER up to 7
- High efficiency at partial loads
- Maximum adaptability to different operating conditions
- 2-way valves for free cooling system
- Check valves to avoid water recirculation
- Evaporator with pipes and flange
- Aqua proprietary free cooling management software
- Air flow control through inverter technology
- UPS battery recovery space

*"Cooling equipment with superior operational qualities
 and high performance levels."*



Incorporating
STADCO
 COOLING

ITF Range

Inverter Technology Free Cooling R134a

| Model | | 250 | 300 | 360 | 440 | 500 | 560 | 600 | 730 | 820 | 950 | 1100 | 1250 | 1330 |
|---|---------|-----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Nominal cooling capacity 70Hz - 35°C ambient temperature (1) | kW | 249 | 302 | 365 | 439 | 498 | 561 | 604 | 730 | 822 | 948 | 1103 | 1248 | 1334 |
| Compressor nominal absorbed power (1) | kW | 84.6 | 102.3 | 115.8 | 76.0 | 84.6 | 95.0 | 102.3 | 115.8 | 128.0 | 146.1 | 172.9 | 193.6 | 204.7 |
| Compressor nominal absorbed current | A | 135.1 | 163.3 | 184.9 | 121.3 | 135.1 | 151.7 | 163.3 | 184.9 | 204.4 | 233.3 | 276.1 | 309.1 | 326.8 |
| COP | W/W | 2.95 | 2.95 | 3.15 | 2.89 | 2.94 | 2.95 | 2.95 | 3.15 | 3.21 | 3.24 | 3.19 | 3.22 | 3.26 |
| EER | W/W | 2.63 | 2.69 | 2.90 | 2.62 | 2.69 | 2.67 | 2.64 | 2.86 | 2.89 | 2.92 | 2.89 | 2.89 | 2.94 |
| 80% Load cooling capacity 60Hz - 30°C ambient temperature | kW | 227 | 275 | 326 | 401 | 454 | 511 | 550 | 653 | 735 | 847 | 986 | 1116 | 1193 |
| Compressor absorbed power | kW | 65 | 78 | 88 | 58 | 65 | 73 | 78 | 88 | 97 | 110 | 131 | 146 | 155 |
| COP | | 3.51 | 3.52 | 3.73 | 3.45 | 3.51 | 3.51 | 3.52 | 3.73 | 3.80 | 3.84 | 3.77 | 3.81 | 3.85 |
| EER | | 3.12 | 3.19 | 3.42 | 3.11 | 3.19 | 3.17 | 3.13 | 3.36 | 3.41 | 3.44 | 3.40 | 3.40 | 3.46 |
| 70% Load cooling capacity 50Hz - 25°C ambient temperature | kW | 208 | 251 | 300 | 369 | 416 | 466 | 502 | 601 | 676 | 780 | 907 | 1027 | 1097 |
| Compressor absorbed power | kW | 47 | 56 | 63 | 42 | 47 | 52 | 56 | 63 | 69 | 79 | 94 | 105 | 111 |
| COP | | 4.46 | 4.47 | 4.79 | 4.39 | 4.46 | 4.46 | 4.47 | 4.79 | 4.88 | 4.93 | 4.85 | 4.90 | 4.95 |
| EER | | 3.95 | 4.04 | 4.37 | 3.94 | 4.04 | 4.00 | 3.97 | 4.30 | 4.35 | 4.40 | 4.34 | 4.35 | 4.42 |
| 60% Load cooling capacity 40Hz - 20°C ambient temperature | kW | 183 | 221 | 260 | 324 | 366 | 410 | 442 | 520 | 585 | 674 | 785 | 888 | 949 |
| Compressor absorbed power | kW | 33 | 40 | 44 | 30 | 33 | 37 | 40 | 44 | 49 | 56 | 66 | 74 | 78 |
| COP | | 5.55 | 5.56 | 5.89 | 5.46 | 5.55 | 5.56 | 5.56 | 5.89 | 6.00 | 6.06 | 5.96 | 6.03 | 6.09 |
| EER | | 4.82 | 4.94 | 5.29 | 4.81 | 4.95 | 4.89 | 4.83 | 5.19 | 5.25 | 5.30 | 5.24 | 5.24 | 5.34 |
| 50% Load cooling capacity 30Hz - 15°C ambient temperature | kW | 161 | 194 | 210 | 285 | 321 | 360 | 388 | 420 | 489 | 564 | 647 | 766 | 819 |
| Compressor absorbed power | kW | 21 | 25 | 25 | 19 | 21 | 23 | 25 | 30 | 30 | 35 | 41 | 46 | 49 |
| COP | | 7.72 | 7.75 | 8.42 | 7.61 | 7.72 | 7.73 | 7.75 | 8.42 | 8.10 | 8.08 | 7.97 | 8.40 | 8.37 |
| EER | | 6.48 | 6.68 | 7.26 | 6.50 | 6.69 | 6.60 | 6.50 | 7.06 | 6.83 | 6.82 | 6.77 | 7.04 | 7.09 |
| Maximum working current per compressor | A | 165 | 196 | 226 | 142 | 165 | 182 | 196 | 226 | 250 | 285 | 338 | 350 | 350 |
| Refrigerant circuits | NR | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Screw compressors | NR | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Air ambient temperature with 100% free cooling (2) | °C | -5.5 | -6.5 | -8.5 | -4.7 | -5.1 | -5 | -4.6 | -5.5 | -6.2 | -6.2 | -7 | -7.5 | -8 |
| Hydraulics | | | | | | | | | | | | | | |
| Water flow (30% ethylene glycol) | m³/h | 46.6 | 56.5 | 68.3 | 82.2 | 93.2 | 104.9 | 113.0 | 136.7 | 153.8 | 177.3 | 206.3 | 233.6 | 249.6 |
| Evaporator pressure drops (evaporator + valves + pipes) | KPa | 55 | 58 | 62 | 76 | 55 | 69 | 75 | 76 | 87 | 95 | 74 | 86 | 85 |
| Free cooling pressure drops (evaporator + water battery + pipes + valves) | KPa | 157 | 170 | 160 | 140 | 133 | 143 | 159 | 176 | 156 | 195 | 156 | 176 | 185 |
| Hydraulic connections | DN | 125 | 125 | 125 | 125 | 125 | 125 | 150 | 150 | 150 | 150 | 200 | 200 | 200 |
| Tank volume | dm³ | 550 | 550 | 550 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 800 | 800 | 800 |
| Pump motor power | kW | 7.5 | 7.5 | 9.2 | 11.0 | 11.0 | 11.0 | 15.0 | 15.0 | 18.5 | 22.0 | 22.0 | 30.0 | 30.0 |
| Pump available pressure | KPa | 200 | 170 | 160 | 210 | 205 | 220 | 240 | 230 | 225 | 220 | 220 | 230 | 215 |
| Fans | | | | | | | | | | | | | | |
| Total air flow | m³/h | 90000 | 90500 | 90500 | 144000 | 136000 | 170000 | 200000 | 200000 | 244000 | 280000 | 315000 | 374000 | 364000 |
| Fans | NR | 5 | 5 | 5 | 8 | 8 | 10 | 12 | 12 | 14 | 16 | 18 | 22 | 22 |
| Fans absorbed power | KW | 10 | 10 | 10 | 16 | 16 | 20 | 24 | 24 | 28 | 32 | 36 | 44 | 44 |
| Fans absorbed current | A | 20 | 20 | 20 | 32 | 32 | 40 | 48 | 48 | 56 | 64 | 72 | 88 | 88 |
| Electric | | | | | | | | | | | | | | |
| Power circuit | V/Ph/Hz | <----- 400 / 30 / 50 -----> | | | | | | | | | | | | |
| Noise | | | | | | | | | | | | | | |
| Sound pressure (3) | dB(A) | 62 | 62 | 62 | 63 | 63 | 64 | 66 | 67 | 68 | 70 | 70 | 71 | 71 |
| Low noise sound pressure (3) (*) | dB(A) | 57 | 57 | 58 | 58 | 58 | 59 | 61 | 62 | 63 | 64 | 64 | 66 | 66 |
| Dimensions and weight | | | | | | | | | | | | | | |
| Length | mm | 6060 | 6060 | 6060 | 5060 | 5060 | 6060 | 6060 | 6060 | 7570 | 9070 | 10070 | 11570 | 11570 |
| Width | mm | 1370 | 1370 | 1370 | 2210 | 2210 | 2210 | 2210 | 2210 | 2210 | 2210 | 2210 | 2210 | 2210 |
| Height | mm | 2105 | 2105 | 2105 | 2412 | 2412 | 2412 | 2412 | 2412 | 2472 | 2472 | 2472 | 2472 | 2472 |
| Empty weight | kg | 2200 | 2300 | 2400 | 4600 | 4900 | 5500 | 5700 | 5800 | 6500 | 8650 | 9600 | 11150 | 11250 |
| Operating weight | kg | 3000 | 3100 | 3200 | 5400 | 5800 | 6350 | 6700 | 6800 | 7900 | 9950 | 11000 | 12150 | 12250 |

The manufacturer reserves the right to modify specifications without notice.

Data referred to:

(1) Inlet - outlet water (30% eth. glycol temperature) +12/+7°C, with fouling factor 0.000043 (m²kW - Ambient air temperature = +35°C).

(2) Inlet - outlet water (30% eth. glycol temperature) +12/+7°C, with fouling factor 0.000043 (m²kW).

(3) Average sound pressure level at distance of 10m, referred to free field on reflecting surface. This value is calculated according to ISO3744.

(*) For ITF 250 - 360 low noise with jacket. For ITF 440 - 1330 low noise with compressors cabinet.

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