

| Model Name   |                                    | R160I-X7.5   | R160I-X8.5                  | R160I-X10    | R160I-X14    |
|--|------------------------------------|--------------|-----------------------------|--------------|--------------|
| <b>GENERAL PERFORMANCE DATA</b>  |                                    |              |                             |              |              |
| Maximum Operating Pressure <sup>(2)</sup>  | barg (psig)                        | 7.5 (110)    | 8.5 (125)                   | 10 (145)     | 14 (200)     |
| Rated Discharge Pressure   | barg (psig)                        | 7 (100)      | 8 (115)                     | 9.5 (135)    | 13.5 (190)   |
| Minimum Operating Pressure   | barg (psig)                        | 4.5 (65)     | 4.5 (65)                    | 4.5 (65)     | 4.5 (65)     |
| Capacity FAD <sup>(1)</sup>  | m <sup>3</sup> /min (cfm)          | 29.45 (1040) | 29.02 (1025)                | 25.75 (910)  | 20.51 (724)  |
| Maximum Operating Ambient Temperature  | °C (°F)                            |              | 46 (115)                    |              |              |
| Minimum Operating Ambient Temperature  | °C (°F)                            |              | 2 (35)                      |              |              |
| Maximum System Temperature Setting   | °C (°F)                            |              | 109 (228)                   |              |              |
| Nominal Power - Main Motor   | kW (HP)                            |              | 160 (215)                   |              |              |
| Main Motor Efficiency <sup>(3)</sup>   | Percent                            |              | 95.8%                       |              |              |
| Pkg. Input Power with Fan Motor - Air Cooled <sup>(4)</sup>                          | kW                                 | 191.0        | 193.1                       | 194.2        | 195.9        |
| Pkg. Input Power with Fan Motor - Water Cooled <sup>(4)</sup>                        | kW                                 | 182.6        | 184.7                       | 185.8        | 187.5        |
| Specific Power - Air Cooled <sup>(4)(5)</sup>  | kW/m <sup>3</sup> /min (kW/100cfm) | 6.49 (18.37) | 6.65 (18.84)                | 7.54 (21.35) | 9.55 (27.05) |
| Specific Power - Water Cooled <sup>(4)(5)</sup>                                      | kW/m <sup>3</sup> /min (kW/100cfm) | 6.21 (17.58) | 6.37 (18.04)                | 7.22 (20.45) | 9.15 (25.92) |
| <b>SOUND LEVEL <sup>(6)</sup></b>  |                                    |              |                             |              |              |
| Standard Package - Air Cooled  | dB(A)                              |              |                             | 75           |              |
| Standard Package - Water Cooled  | dB(A)                              |              |                             | 72           |              |
| <b>COOLING DATA (@ Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b> |                                    |              |                             |              |              |
| Heat Removal Oil Cooler  | kW (1000 Btu/hr)                   | 168 (573)    | 168 (573)                   | 155 (530)    | 178 (607)    |
| Heat Removal Oil and Aftercooler   | kW (1000 Btu/hr)                   | 208 (710)    | 209 (712)                   | 194 (661)    | 212 (722)    |
| Additional Static Pressure (16)  | Pa (in H <sub>2</sub> O)           |              | 60 (0.25) - 250 (1.0)       |              |              |
| <b>Air-cooled</b>  |                                    |              |                             |              |              |
| Fan Air Flow   | m <sup>3</sup> /min (cfm)          |              | 363 (12829)                 |              |              |
| Fan Motor Nominal Power  | kW                                 |              | 7.5                         |              |              |
| Cooling Air Temperature Rise   | °C (°F)                            | 28 (51)      | 30 (54)                     | 35 (63)      | 41 (74)      |
| Aftercooler CTD, 60 Hz <sup>(7)</sup>  | °C (°F)                            | 8 (15)       | 8 (15)                      | 8 (15)       | 8 (15)       |
| <b>Water-cooled - Standard Duty</b>  |                                    |              |                             |              |              |
| Fan Air Flow   | m <sup>3</sup> /min (cfm)          |              | 115 (4000)                  |              |              |
| Fan Motor Nominal Power  | kW                                 |              | 0.8                         |              |              |
| Aftercooler CTD <sup>(7)(8)</sup>  | °C (°F)                            | 8 (15)       | 8 (15)                      | 8 (15)       | 8 (15)       |
| <b>Cooling Water Flow</b>  |                                    |              |                             |              |              |
| @ 10°C (50°F)  | l/min (gal/min)                    | 252 (67)     | 259 (69)                    | 256 (68)     | 177 (47)     |
| @ 20°C (68°F)  | l/min (gal/min)                    | 256 (68)     | 263 (70)                    | 259 (69)     | 180 (48)     |
| @ 30°C (86°F)  | l/min (gal/min)                    | 259 (69)     | 267 (71)                    | 263 (70)     | 180 (48)     |
| @ 40°C (104°F)   | l/min (gal/min)                    | 263 (70)     | 271 (72)                    | 267 (71)     | 188 (50)     |
| @ 46°C (115°F)   | l/min (gal/min)                    | 263 (70)     | 271 (72)                    | 266 (71)     | 269 (72)     |
| Cooling Water Temperature Rise @ 30°C  | °C (°F)                            | 11 (20)      | 11 (20)                     | 11 (20)      | 11 (20)      |
| Cooling Water Pressure Drop  | bar (psi)                          |              | Less Than 0.88 bar (13 psi) |              |              |
| Cooling Air Temperature Rise @ 30°C  | °C (°F)                            | 10 (18)      | 10 (18)                     | 10 (18)      | 10 (18)      |
| <b>Water-cooled - Harsh Duty</b>   |                                    |              |                             |              |              |
| Fan Air Flow   | m <sup>3</sup> /min (cfm)          |              | 115 (4,000)                 |              |              |
| Fan Motor Nominal Power  | kW                                 |              | 0.8                         |              |              |
| Aftercooler CTD <sup>(8)</sup>   | °C (°F)                            | 8 (15)       | 8 (15)                      | 8 (15)       | 8 (15)       |
| <b>Cooling Water Flow</b>  |                                    |              |                             |              |              |
| @ 10°C (50°F)  | l/min (gal/min)                    | 143 (38)     | 144 (38)                    | 209 (56)     | 229 (61)     |
| @ 20°C (68°F)  | l/min (gal/min)                    | 140 (37)     | 142 (38)                    | 182 (49)     | 199 (53)     |
| @ 30°C (86°F)  | l/min (gal/min)                    | 141 (38)     | 143 (38)                    | 164 (44)     | 173 (46)     |
| @ 40°C (104°F)   | l/min (gal/min)                    | 180 (48)     | 176 (47)                    | 201 (54)     | 188 (50)     |
| @ 46°C (115°F)   | l/min (gal/min)                    | 182 (49)     | 188 (50)                    | 211 (56)     | 230 (61)     |
| Cooling Water Temperature Rise @ 30°C  | °C (°F)                            | 13 (24)      | 13 (24)                     | 13 (23)      | 13 (23)      |
| Cooling Water Pressure Drop  | bar (psi)                          |              | Less Than 0.88 bar (13 psi) |              |              |
| Cooling Air Temperature Rise   | °C (°F)                            | 8 (15)       | 8 (15)                      | 8 (15)       | 9 (16)       |
| <b>AIR END DATA</b>  |                                    |              |                             |              |              |
| Male Rotor Speed   | RPM                                | 2929         | 2809                        | 2589         | 2126         |
| Male Rotor Tip Speed   | m/sec                              | 35.0         | 33.0                        | 31.0         | 24.0         |
| Full Load Shaft Power  | kW                                 | 174          | 176                         | 177          | 179          |



R160i  
50 Hz

ENGINEERING DATA SHEET

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**CONSTRUCTION, FOUNDATION, AND MOUNTING DATA**

**PIPING CONNECTIONS**

|                                    |                                |                              |
|------------------------------------|--------------------------------|------------------------------|
| Air Discharge                      | Inches BSPT/NPT <sup>(9)</sup> | 3.00                         |
| Package Automatic Condensate Drain | Inches BSPT/NPT <sup>(9)</sup> | 0.38                         |
| Coolant Drain Plug                 | Inches BSPT/NPT <sup>(9)</sup> | 0.75                         |
| Diameter of Power Inlet            | mm / inch                      | Up to 4.0" (removable plate) |
| Water Inlet and Outlet Connections | Inches BSPT/NPT <sup>(9)</sup> | 1.50                         |

**COOLANT LUBRICATION DATA**

|   |                 |         |
|---|-----------------|---------|
| Total Coolant Capacity - Air Cooled           | litres (US gal) | 95 (25) |
| Total Coolant Capacity - Water Cooled - Std   | litres (US gal) | 90(24)  |
| Total Coolant Capacity - Water Cooled - Harsh | litres (US gal) | 95 (25) |

**DIMENSIONS & WEIGHT**

|                                  |             | Base Mounted                           |
|----------------------------------|-------------|--|
| Length, Width, Height            | mm (inches) | 2855 / 1836 / 2032 (112.4 / 72.3 / 80) |
| Net Weight - Air Cooled          | kg (lb.)    | 2926(6450)                             |
| Net Weight - Water Cooled        | kg (lb.)    | 2903 (6400)                            |
| GA Drawing Number - Air Cooled   |             | 23570609                               |
| GA Drawing Number - Water Cooled |             | 23570617                               |

**ELECTRICAL DATA<sup>(14)</sup>**

|  |      | 380V, 3Φ | 400V, 3Φ    | 415V, 3Φ |
|--|------|----------|-------------|----------|
| Motor Enclosure Protection                               |      |          | IP55 (TEFC) |          |
| Full Load Package Current - Air Cooled <sup>(10)</sup>   | Amps | 369      | 352         | 340      |
| Full Load Package Current - Water Cooled <sup>(10)</sup> | Amps | 362      | 345         | 333      |
| Package Locked Rotor Current                             | Amps | 2167     | 2164        | 2161     |
| Package Power Factor                                     |      | 0.88     | 0.88        | 0.88     |

**Electrical Installation**

|   |                                    |          |          |          |
|---|------------------------------------|----------|----------|----------|
| Recommended Supply Cable Size <sup>(11)(15)</sup>   | mm <sup>2</sup> /Cu (AWG or kcmil) | 355(700) | 300(600) | 300(600) |
| Maximum Recommended Fuse Rating <sup>(11)(12)</sup> | Amps                               | 500      | 450      | 450      |

**Notes :**

- (1) FAD (Free Air Delivery) is full package performance including all losses. Tested per ISO 1217 : 2009 Annex C
- (2) Maximum pressure at package discharge, value at which compressor will stop when unit operating at maximum target pressure
- (3) IE3 efficiency motor
- (4) Measured at rated capacity and rated pressure
- (5) Specific power guaranteed in accordance with ISO 1217 : 2009 Annex C
- (6) Measured in free field conditions per ISO 2151 using Hemispherical Method; ducted inlet and outlet, with + 3 dB(A) tolerance.
- (7) 40% Relative Humidity Inlet Air and maximum speed ( For alternate conditions contact Ingersoll Rand)
- (8) Ambient temperature equivalent to cooling water inlet temperature
- (9) BSPT or NPT, depending on regional standard
- (10) Maximum current includes 10% additional current due to fouled filters and elements
- (11) Always apply local electrical codes for sizing cables and fusing.
- (12) Time delay fuse recommended. Apply local electrical codes for fuse sizing
- (13) Coolant volumes listed are approximate. See operator manual for coolant fill procedure.
- (14) Voltage tolerance: 357V - 440V
- (15) Cable size based on 90°C copper cables
- (16) See detailed scope document 23883374

**Product Improvement is a continuing goal at Ingersoll Rand. Design and specifications are subject to change without notice or obligation.**