



# ENGINEERING DATA SHEET

## R110i (IE3)

50 Hz

CCN: 23555857  
 Rev.: K  
 ECN: 83745  
 Sheet: 1 of 2  
 Date: 17-Jun-2015

Model Name		R110I-X7.5	R110I-X8.5	R110I-X10	R110I-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)	20.76 (733)	19.20 (678)	17.50 (618)	13.76 (486)
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)	110 (150)			
Main Motor Efficiency <sup>(3)</sup>	Percent	95.4%			
Package Input Power - Air Cooled <sup>(4)</sup>	kW	125.6	126.5	131.3	137.3
Package Input Power - Water Cooled <sup>(4)</sup>	kW	121.6	122.6	127.4	133.3
Specific Power - Air Cooled <sup>(4)(5)</sup>	kW/m <sup>3</sup> /min (kW/100cfm)	6.05 (17.13)	6.59 (18.66)	7.50 (21.25)	9.98 (28.25)
Specific Power - Water Cooled <sup>(4)(5)</sup>	kW/m <sup>3</sup> /min (kW/100cfm)	5.86 (16.59)	6.38 (18.08)	7.28 (20.61)	9.69 (27.44)
<b>SOUND LEVEL <sup>(6)</sup></b>					
Standard Package - Air Cooled	dB(A)	71			
Standard Package - Water Cooled	dB(A)	71			
<b>COOLING DATA (@ Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b>					
Heat Removal Oil Cooler	kW (1000 Btu/hr)	94 (322)	97 (330)	103 (350)	112 (381)
Heat Removal Oil and Aftercooler	kW (1000 Btu/hr)	126 (430)	127 (432)	131 (447)	135 (461)
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)	250 (8815)	Maximum: 294 (10371)		
Fan Motor Nominal Power	kW	4.0			
Cooling Air Temperature Rise	°C (°F)	32 (57)	32 (57)	33 (59)	33 (59)
Aftercooler CTD, 50 Hz <sup>(7)</sup>	°C (°F)	4 (7)	4 (7)	4 (7)	4 (7)
<b>Water-cooled - Standard Duty</b>					
Fan Air Flow	m <sup>3</sup> /min (cfm)	115 (4,000)			
Fan Motor Nominal Power	kW	0.6			
Aftercooler CTD <sup>(7)(8)</sup>	°C (°F)	8 (15)	8 (15)	8 (15)	8.3 (15)
<b>Cooling Water Flow</b>					
@ 10°C (50°F)	l/min (gal/min)	154 (41)	156 (41)	163 (43)	172 (46)
@ 20°C (68°F)	l/min (gal/min)	158 (42)	160 (42)	167 (44)	175 (46)
@ 30°C (86°F)	l/min (gal/min)	162 (43)	164 (43)	170 (45)	179 (47)
@ 40°C (104°F)	l/min (gal/min)	167 (44)	169 (45)	175 (46)	184 (49)
@ 46°C (115°F)	l/min (gal/min)	172 (46)	173 (46)	180 (48)	187 (50)
Cooling Water Temperature Rise @ 30°C	°C (°F)	11 (19)	11 (19)	11 (19)	10 (19)
Cooling Water Pressure Drop	bar (psi)	Less Than 0.88 bar (13 psi)			
Cooling Air Temperature Rise @ 30°C	°C (°F)	7 (12)	7 (12)	7 (13)	7 (13)
<b>Water-cooled - Harsh Duty</b>					
Fan Air Flow	m <sup>3</sup> /min (cfm)	115 (4,000)			
Fan Motor Nominal Power	kW	0.6			
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)	128 (34)	128 (34)	128 (34)	128 (34)
@ 20°C (68°F)	l/min (gal/min)	133 (35)	133 (35)	133 (35)	133 (35)
@ 30°C (86°F)	l/min (gal/min)	138 (36)	138 (36)	138 (36)	138 (36)
@ 40°C (104°F)	l/min (gal/min)	144 (38)	144 (38)	144 (38)	144 (38)
@ 46°C (115°F)	l/min (gal/min)	162 (43)	162 (43)	162 (43)	162 (43)
Cooling Water Temperature Rise @ 30°C	°C (°F)	14 (25)	14 (24)	13 (24)	13 (24)
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)	8 (15)



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### CONSTRUCTION, FOUNDATION, AND MOUNTING DATA

#### PIPING CONNECTIONS

Air Discharge	Inches BSPT/NPT <sup>(9)</sup>	2.50
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 <sup>(13)</sup>	litres (US gal)	83 (22)
Total Coolant Capacity - Water Cooled - Std <sup>(13)</sup>	litres (US gal)	71 (19)
Total Coolant Capacity - Water Cooled - Harsh <sup>(13)</sup>	litres (US gal)	TBD

#### DIMENSIONS & WEIGHT

		Base Mounted
Length, Width, Height	mm (inches)	2703 / 1466 / 2032 (106.4 / 57.7 / 80)
Net Weight - Air Cooled	kg (lb.)	2550 (5620)
Net Weight - Water Cooled	kg (lb.)	2330 (5140)
GA Drawing Number - Air Cooled Std.		23539836
GA Drawing Number - Water Cooled Std.		23539844

#### 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	253	240	231
Full Load Package Current - Water Cooled <sup>(10)</sup>	Amps	246	233	224
Package Locked Rotor Current	Amps	1834	1743	1680
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)	185(350)	185(350)	185(350)
Maximum Recommended Fuse Rating <sup>(11)(12)</sup>	Amps	350	350	350

#### 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 IR )
- ( 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: ± 6%
- (15) Cable size based on 90°C copper cables
- (16) See detailed scope document 23883374

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