



# Contact-Cooled Rotary Screw Air Compressors

R-Series 90-160 kW/125-200 hp

Reliability

Efficiency

Productivity



# More Than Air, Peace

Ingersoll Rand is well into its second century of building our legacy as a **trusted** global leader by delivering the **innovative** solutions and **expertise** our customers require. We continue to advance compressed air technology and service to maximize reliability, efficiency and productivity for our customers.

We not only provide world-class products and support, but the peace of mind that comes from our commitment to stand behind our customers in all aspects of what we do. That peace of mind allows our customers to focus on their primary objective: moving their businesses forward.



# of Mind



# A New Level of Reliability, Efficiency and

R-Series 90-160 kW/125-200 hp rotary screw air compressors offer the very best of time-proven designs and technologies with new, advanced features that ensure the highest levels of **reliability, efficiency and productivity** available.

## **Progressive Adaptive Control™ – PAC™ Protection**

An integrated, intelligent system that continuously monitors key operating parameters and adapts to prevent unexpected downtime.

- Scans and adjusts operating parameters in response to changes in filtration.
- Ensures peak performance through real-time electronic maintenance indicators.
- Optimizes energy consumption and reduces noise level by adapting fan speed based on ambient temperature.
- Increases bearing life by eliminating any chance of water build-up in the coolant.
- Improves productivity by proactively monitoring and conditioning incoming power.

## **V-Shield™ Technology**

A totally integrated, leak-free design using stainless steel pipes and long-life metal-flex hoses.

- Superior elastomeric seals for repeatable leak-free connections.
- Reduced downstream contamination with stainless steel air piping.
- Vibration isolation system and metal-flex hoses extend compressor life and reduce noise.
- Significantly reduced potential leak paths.

## **Sequential Cooling System**

Significantly improves efficiency, serviceability and noise level.

- Low energy consumption and quiet operation with an energy-efficient centrifugal blower.
- Significantly reduces the energy required to remove harmful condensate in downstream air treatment by lowering discharge temperatures to as low as 2.2°C (4°F) above ambient.
- Integrated moisture separator delivers higher quality air by decreasing harmful condensate carryover, while electronic no-loss drain valves improve efficiency.
- Independently-mounted, free-floating air and coolant heat exchangers extend life by reducing thermal stresses.
- Available for operation in extreme environments up to 55°C (131°F).

## **Intuitive Controller**

- Easily adjustable operating parameters, on-board diagnostics, multiple languages.
- Built-in optimization sequencing for up to four compressors.



**See Features Chart (page 8)  
for availability by model.**

# Productivity



## Time-Proven Quality Airends

At the heart of our compressors are rugged, roller bearing-equipped airends, engineered for exceptional reliability.



Premium two-stage airend

### Trouble-Free Operation

Ingersoll Rand provides many more ways to ensure your operation remains productive while providing the lowest cost of ownership.

- Increased uptime, reduced maintenance and improved performance with our unique two-stage filtration, extended filtration life, superior synthetic Ultra Coolant™ and on-board, time-saving diagnostics.
- High-quality air delivered through high-efficiency coolant separation allows as little as 2 ppm carryover.
- Safe, easy maintenance performed on one side via removable hinged doors, swing out separator lid and easy-slide heat exchangers.
- Minimized installation costs and complexity with single cooling air inlet and outlet, and easy exhaust heat management for lower utility costs.
- Easy-to-use operator interface in 23 languages with electronic controller designed for harsh environments.

# R-Series Compressors: Innovative Design,



Ingersoll Rand rotary compressors provide superior

operating features, benefits and equipment choices.

Mix and match variable and fixed speed motors with single- and two-stage airends for the exact level of performance and economy your operation and your budget require.



## Efficiency for Variable Demand



Maintenance-free, bearingless motor design

Fewer rotating parts — no pulleys, belts or couplings to wear out

### Nirvana Variable Speed Drive (VSD) Compressors

Ingersoll Rand VSD compressors maximize the full potential of variable speed technology. Only Ingersoll Rand's Nirvana VSD technology with the Hybrid Permanent Magnet® (HPM®) motor—the highest efficiency motor available—gives you all this:

- Unlimited starts/stops.
- Shuts off rather than run unloaded, conserving energy.
- Rated for continuous duty — 100% load, 24/7, 46°C (115°F) — to reduce downtime and lost production.
- Stable, constant pressure control.
- Smooth soft-starting — starting amps always below full load.
- Virtually no degradation in specific power at partial load.
- Variable speed blower allows the compressor to run at a constant discharge temperature.
- Automatic coolant temperature control to eliminate moisture build up.



## Efficiency for Constant Demand

### Fixed Speed Compressors

Ingersoll Rand R-Series fixed speed compressors are the most reliable and energy-efficient solution for processes with constant demand.

- The compressors can be outfitted for continuous and reliable operation in the harshest conditions, even outdoors in rain and dust, from -23°C (-10°F) up to 55°C (131°F).
- Clean compressor package design with fewer components that need servicing.
- NEMA 4/IP65 electric panels.
- High-efficiency, quiet centrifugal blower.
- Voltage and frequency fluctuation protection.



Continuous duty high-performance TEFC induction motor

# Flexible Choice

## e Highest Efficiency Airends



Deliver up to 15% more air than a single-stage compressor while consuming the same amount of energy.

### Premium Efficiency and Performance: Two-Stage Airends

Ingersoll Rand's premium efficiency compressors deliver reliability through our unique two-stage airends, renowned for trouble-free operation and low energy consumption.

- Efficiency and durability through low compression ratio in each stage.
- Reduced bearing loads.
- Increased airend life.
- Minimal maintenance.
- Coolant curtain reduces energy consumption by injecting atomized oil into the compressed air stream, significantly lowering the energy required for compression.

## Time-Proven Reliable Airends

### Single-Stage Airends

Used in compressors worldwide, Ingersoll Rand single-stage airends have proven to be the market leader in both reliability and efficiency.



- Precision machined rotors.
- Highest quality tapered roller bearings.
- All coolant flow paths are integral to the cast housing, eliminating potential leak paths.
- Ideal wherever budgets are limited, but the need for performance is not.

## The Decision is Yours

The following four optimized, energy-efficient packages deliver the combination of performance and value that best fits your specific needs. At Ingersoll Rand, it's all about value...and choice!

### ne Nirvana VSD PREMIUM EFFICIENCY

Variable speed with two-stage airend

### n Nirvana VSD EFFICIENCY

Variable speed with single-stage airend

### ie Premium EFFICIENCY

Fixed speed with two-stage airend

### i Fixed speed with single-stage airend

### R110<sup>ne</sup> Nirvana VSD PREMIUM EFFICIENCY

Applying technology to help our customers achieve their sustainability goals.



Standard Features					
Category	Description	Fixed Speed		Nirvana VSD	
		<i>i</i>	<i>ie</i>	<i>n</i>	<i>ne</i>
<b>Airend</b>	Premium two-stage airend		●		●
	Time-proven single-stage airend	●		●	
<b>Controller</b> 	Energy-saving microprocessor controller easy to operate in 23 languages	●	●	●	●
	Programmable start/stop operation and remote connectivity	●	●	●	●
	Built-in optimization sequencer for up to 4 units	●	●		
	Built-in energy savings calculator			●	●
<b>PAC™ Protection</b> 	Scans and adjusts operating parameters in response to filtration changes	●	●	●	●
	Real-time electronic maintenance indicators and shutdown protection	●	●	●	●
	Blower speed adaptable to ambient temperature			●	●
	Automatic coolant temperature control to eliminate moisture build-up			●	●
	Integrated line reactor in compliance with industrial EMC standards			●	●
<b>Cooling System</b> 	Air-cooled sequential cooling system optimized for efficiency & serviceability	●	●	●	●
	Energy-efficient and low noise centrifugal blower	●	●	●	●
	Generous package cooling system rated for 46°C (115°F) ambient	●	●	●	●
	Moisture separator	●	●	●	●
	Electronic no-loss condensate drains	○	●	●	●
<b>V-Shield™ Technology</b> 	Stainless steel air piping	●	●	●	●
	Vibration isolation pads and premium metal-flex hoses	●	●	●	●
	Repeatable leak-free connections with superior elastomeric seals	●	●	●	●
<b>Services</b>	Ergonomic swing-out lid on the separator tank	●	●	●	●
	Simple ducting (single air inlet and single air outlet)	●	●	●	●
	12-month full package warranty	●	●	●	●
<b>Auxiliary Systems</b> 	Noise attenuation enclosure	●	●	●	●
	Package pre-filtration	●	●	●	●
	Long-life filtration and separation elements	●	●	●	●
	8,000-hour life Ultra Coolant™	●	●	●	●
	Flow control by variable speed technology			●	●
	Flow control by full load/no load regulation system	●	●		
<b>Motors &amp; Electrical Systems</b> 	Control panel protection, NEMA 4/IP65 electrics	●	●		
	Star-delta reduced voltage starter	●	●		
	High-efficiency TEFC IP55 motors - Class F insulation with B rise	●	●		
	Hybrid Permanent Magnet® (HPM®) motor			●	●
	Control panel protection NEMA 12/IP54			●	●
	Variable speed drive on main motor & centrifugal blower motor			●	●
Optional Features					
<b>Weather Protection</b>	Outdoor modification/rain protection	○	○		
	Frost protection to -10°C (14°F)	○	○		
	Extreme low ambient protection to -23°C (-10°F)*	○	○		
	High ambient protection up to 55°C (131°F)	○	○		
	Premium high dust filtration	○	○		
	Motor space heater	○	○		
	Water cooling	○	○	○	○
	Sea water and harsh water cooling	○	○	○	○
<b>Environmental</b> 	Energy Recovery System (ERS)	○	○	○	○
	Fluid containment system	○	○	○	○
	Food grade coolant and X-tend filtration system	○	○	○	○
<b>Power Protection</b> 	Power Outage Restart Option (PORO)	○	○	○	○
	Safety switch disconnects	○	○	○	○
	Phase monitor (protection)	○	○	●	●
	Electronic solid state reduced voltage starter	○	○		
<b>General Options</b>	Flow control by inlet modulation control	○	○		
	Comprehensive service and coverage plan	○	○	○	○

 Sustainable Technology    ● Standard Feature    ○ Optional Feature    "Blank" Not Available    \* Available in North America Only

### i Ingersoll Rand Standard – 50 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)*		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90i	7.5	110	90	125	16.71	590	2,703x1,466x2,032	106x58x80	2,420	5,335
	8.5	125	90	125	15.72	555	2,703x1,466x2,032	106x58x80	2,420	5,335
	10.0	145	90	125	14.02	495	2,703x1,466x2,032	106x58x80	2,420	5,335
	14.0	200	90	125	10.25	362	2,703x1,466x2,032	106x58x80	2,420	5,335
R110i	7.5	110	110	150	20.76	733	2,703x1,466x2,032	106x58x80	2,550	5,620
	8.5	125	110	150	19.20	678	2,703x1,466x2,032	106x58x80	2,550	5,620
	10.0	145	110	150	17.50	618	2,703x1,466x2,032	106x58x80	2,550	5,620
	14.0	200	110	150	13.76	486	2,703x1,466x2,032	106x58x80	2,550	5,620
R132i	7.5	110	132	175	25.20	890	2,855x1,836x2,032	112x72x80	2,926	6,450
	8.5	125	132	175	23.93	845	2,855x1,836x2,032	112x72x80	2,926	6,450
	10	145	132	175	21.10	745	2,855x1,836x2,032	112x72x80	2,926	6,450
	14	200	132	175	17.53	619	2,855x1,836x2,032	112x72x80	2,926	6,450
R160i	7.5	110	160	200	29.45	1,040	2,855x1,836x2,032	112x72x80	2,926	6,450
	8.5	125	160	200	29.02	1,025	2,855x1,836x2,032	112x72x80	2,926	6,450
	10	145	160	200	25.77	910	2,855x1,836x2,032	112x72x80	2,926	6,450
	14	200	160	200	20.50	724	2,855x1,836x2,032	112x72x80	2,926	6,450

### ie Ingersoll Rand Premium – 50 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)*		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90ie	7.5	110	90	125	18.01	636	2,855x1,836x2,032	112x72x80	2,744	6,050
	8.5	125	90	125	17.50	618	2,855x1,836x2,032	112x72x80	2,744	6,050
	10.0	145	90	125	15.43	545	2,855x1,836x2,032	112x72x80	2,744	6,050
	14.0	200	90	125	13.03	460	2,855x1,836x2,032	112x72x80	2,744	6,050
R110ie	7.5	110	110	150	22.09	780	2,855x1,836x2,032	112x72x80	2,744	6,050
	8.5	125	110	150	20.39	720	2,855x1,836x2,032	112x72x80	2,744	6,050
	10.0	145	110	150	18.89	667	2,855x1,836x2,032	112x72x80	2,744	6,050
	14.0	200	110	150	15.40	544	2,855x1,836x2,032	112x72x80	2,744	6,050
R132ie	7.5	110	132	175	26.19	925	2,855x1,836x2,032	112x72x80	3,198	7,050
	8.5	125	132	175	25.34	895	2,855x1,836x2,032	112x72x80	3,198	7,050
	10	145	132	175	22.79	805	2,855x1,836x2,032	112x72x80	3,198	7,050
	14	200	132	175	18.35	648	2,855x1,836x2,032	112x72x80	3,198	7,050
R160ie	7.5	110	160	200	31.09	1,098	2,855x1,836x2,032	112x72x80	3,198	7,050
	8.5	125	160	200	30.30	1,070	2,855x1,836x2,032	112x72x80	3,198	7,050
	10	145	160	200	27.21	961	2,855x1,836x2,032	112x72x80	3,198	7,050
	14	200	160	200	21.95	775	2,855x1,836x2,032	112x72x80	3,198	7,050

### n Ingersoll Rand Nirvana Standard – 50 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)**		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90n	4.5-10	65-145	90	125	8.47-17.95	299-634	2,703x1,466x2,032	106x58x80	2,060	4,540
R110n	4.5-10	65-145	110	150	8.47-21.66	299-765	2,703x1,466x2,032	106x58x80	2,060	4,540
R132n	4.5-10	65-145	132	175	8.47-24.44	299-863	2,855x1,836x2,032	112x72x80	2,363	5,210
R160n	4.5-10	65-145	160	200	8.47-28.88	299-1,020	2,855x1,836x2,032	112x72x80	2,363	5,210

### ne Ingersoll Rand Nirvana Premium – 50 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)**		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90ne	4.5-10	65-145	90	125	8.86-18.7	313-661	2,855x1,836x2,032	112x72x80	2,495	5,500
R110ne	4.5-10	65-145	110	150	8.86-23	313-811	2,855x1,836x2,032	112x72x80	2,495	5,500
R132ne	4.5-10	65-145	132	175	8.86-27.24	313-962	2,855x1,836x2,032	112x72x80	2,495	5,500
R160ne	4.5-10	65-145	160	200	8.86-32.05	313-1,132	2,855x1,836x2,032	112x72x80	2,495	5,500

\*FAD (Free Air Delivery) is full-package performance including all losses. Tested per ISO 1217:2009 Annex C and measured at 0.5 bar g/10 psig lower than maximum pressure.

\*\*FAD (Free Air Delivery) is full-package performance including all losses. Tested per ISO 1217:2009 Annex C and capacity range measured at 7.0 bar g/100 psig.

### **i** Ingersoll Rand Standard – 60 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)*		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90i	7.5	110	90	125	17.58	621	2,703x1,466x2,032	106x58x80	2,420	5,335
	8.5	125	90	125	16.03	566	2,703x1,466x2,032	106x58x80	2,420	5,335
	10.0	145	90	125	14.47	511	2,703x1,466x2,032	106x58x80	2,420	5,335
	14.0	200	90	125	10.19	360	2,703x1,466x2,032	106x58x80	2,420	5,335
R110i	7.5	110	110	150	21.27	751	2,703x1,466x2,032	106x58x80	2,550	5,620
	8.5	125	110	150	19.54	690	2,703x1,466x2,032	106x58x80	2,550	5,620
	10.0	145	110	150	17.70	625	2,703x1,466x2,032	106x58x80	2,550	5,620
	14.0	200	110	150	13.73	485	2,703x1,466x2,032	106x58x80	2,550	5,620
R160i	7.5	110	160	200	27.89	985	2,855x1,836x2,032	112x72x80	2,926	6,450
	8.5	125	160	200	25.63	905	2,855x1,836x2,032	112x72x80	2,926	6,450
	10	145	160	200	24.49	865	2,855x1,836x2,032	112x72x80	2,926	6,450
	14	200	160	200	19.68	695	2,855x1,836x2,032	112x72x80	2,926	6,450

### **ie** Ingersoll Rand Premium – 60 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)*		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90ie	7.5	110	90	125	18.80	664	2,855x1,836x2,032	112x72x80	2,744	6,050
	8.5	125	90	125	17.41	615	2,855x1,836x2,032	112x72x80	2,744	6,050
	10.0	145	90	125	16.06	567	2,855x1,836x2,032	112x72x80	2,744	6,050
	14.0	200	90	125	13.00	459	2,855x1,836x2,032	112x72x80	2,744	6,050
R110ie	7.5	110	110	150	22.99	812	2,855x1,836x2,032	112x72x80	2,744	6,050
	8.5	125	110	150	20.53	725	2,855x1,836x2,032	112x72x80	2,744	6,050
	10.0	145	110	150	19.28	681	2,855x1,836x2,032	112x72x80	2,744	6,050
	14.0	200	110	150	15.43	545	2,855x1,836x2,032	112x72x80	2,744	6,050
R160ie	7.5	110	160	200	29.31	1,035	2,855x1,836x2,032	112x72x80	3,198	7,050
	8.5	125	160	200	27.47	970	2,855x1,836x2,032	112x72x80	3,198	7,050
	10	145	160	200	25.57	903	2,855x1,836x2,032	112x72x80	3,198	7,050
	14	200	160	200	20.53	725	2,855x1,836x2,032	112x72x80	3,198	7,050

### **n** Ingersoll Rand Nirvana Standard – 60 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)**		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90n	4.5-10	65-145	90	125	8.47-18.83	299-665	2,703x1,466x2,032	106x58x80	2,060	4,540
R110n	4.5-10	65-145	110	150	8.47-21.86	299-772	2,703x1,466x2,032	106x58x80	2,060	4,540
R160n	4.5-10	65-145	160	200	8.47-28.12	299-993	2,855x1,836x2,032	112x72x80	2,363	5,210

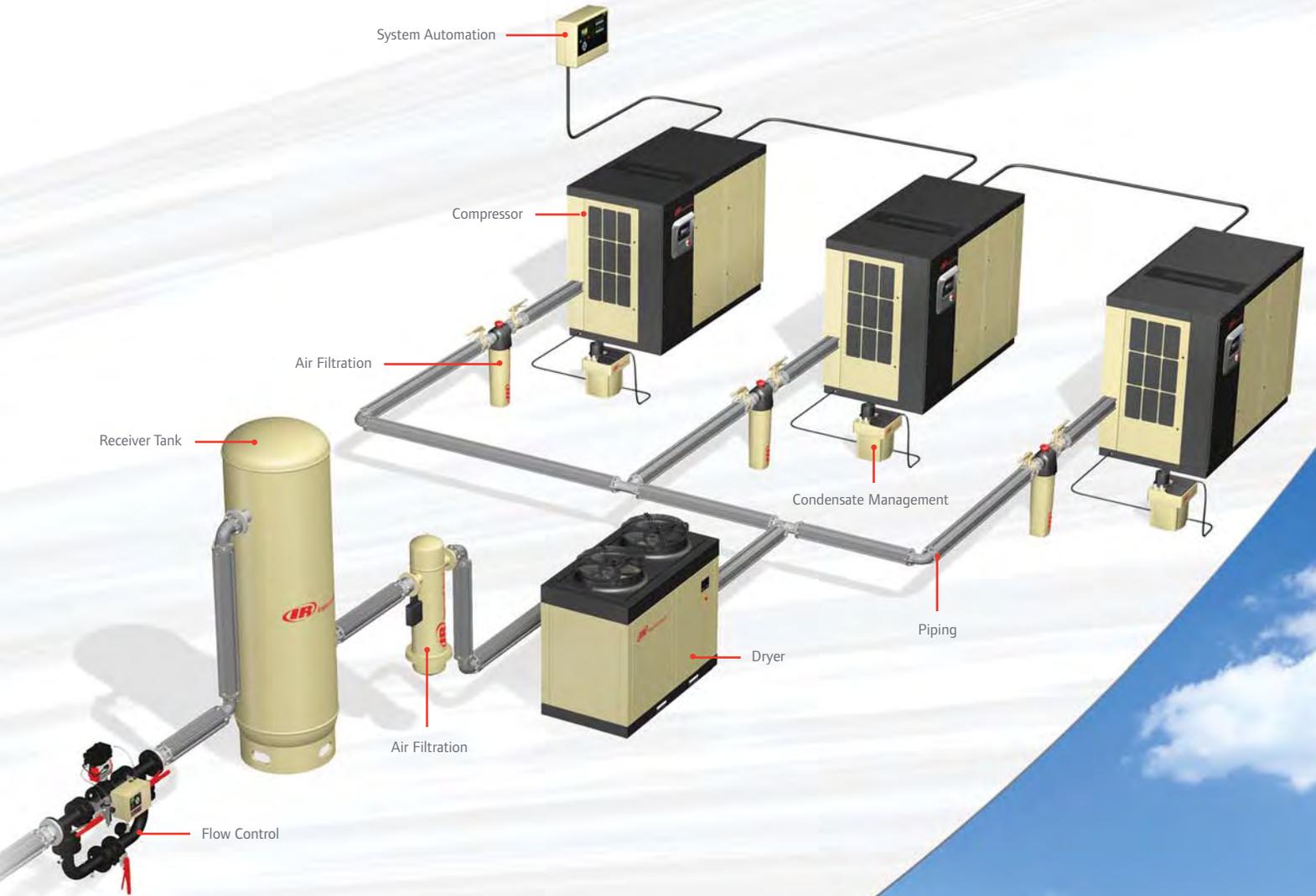
### **ne** Ingersoll Rand Nirvana Premium – 60 Hz Performance

Model	Max. Pressure		Nominal Power		Capacity (FAD)**		Dimensions (LxWxH)		Weight (Air-Cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	mm	in	kg	lb
R90ne	4.5-10	65-145	90	125	9.57-19.54	313-690	2,855x1,836x2,032	112x72x80	2,495	5,500
R110ne	4.5-10	65-145	110	150	9.57-23.36	313-825	2,855x1,836x2,032	112x72x80	2,495	5,500
R160ne	4.5-10	65-145	160	200	8.86-30.02	313-1,060	2,855x1,836x2,032	112x72x80	2,495	5,500

\*FAD (Free Air Delivery) is full-package performance including all losses. Tested per ISO 1217:2009 Annex C and measured at 0.5 bar g/10 psig lower than maximum pressure.

\*\*FAD (Free Air Delivery) is full-package performance including all losses. Tested per ISO 1217: 2009 Annex C and capacity range measured at 7.0 bar g/100 psig.

From compressors to system automation and everything in between, Ingersoll Rand is your total solution provider.



Progress is *greener* with Ingersoll Rand

Ingersoll Rand offers industry leading products and solutions that enable businesses around the world to reduce energy consumption and costs and decrease harmful environmental emissions. From air compressors that reduce energy consumption to electric-powered golf cars with near-zero emissions, Ingersoll Rand provides the knowledge, experience and solutions to help our clients achieve their sustainability goals.



Ingersoll Rand Industrial Technologies provides products, services and solutions that enhance our customers' energy efficiency, productivity and operations. Our diverse and innovative products range from complete compressed air systems, tools and pumps to material and fluid handling systems and environmentally friendly microturbines. We also enhance productivity through solutions created by Club Car®, the global leader in golf and utility vehicles for businesses and individuals.

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