

PNGv Series Packaged Air Conditioners

Range: 076 to 300 MBH



50 Hz



High Capacity Packaged Units With Tropical Hermetic Compressor

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ABOUT THE COMPANY

Refrigeration Industries & Storage and Oil Services Company, occupies a leading position as one of the largest industrial companies in Kuwait which was established in 1973. It plays a proactive role in providing various services and diverse activities such as manufacturing, storage, and oil services to meet the needs of customers both inside and outside Kuwait.

Since its inception, RIC has been committed to excellence and advancing its progress, leading to the establishment of the brand (Coolex) in 1986, a true milestone in the Kuwaiti market as the first in the region in the sector of manufacturing air conditioning systems and cooling solutions.

Furthermore, the company has consistently empowered its workforce, enhanced safety and competitiveness, and utilized innovative technologies to launch new products that meet the needs of various sectors, contributing to company's expansion and supporting growth and prosperity.

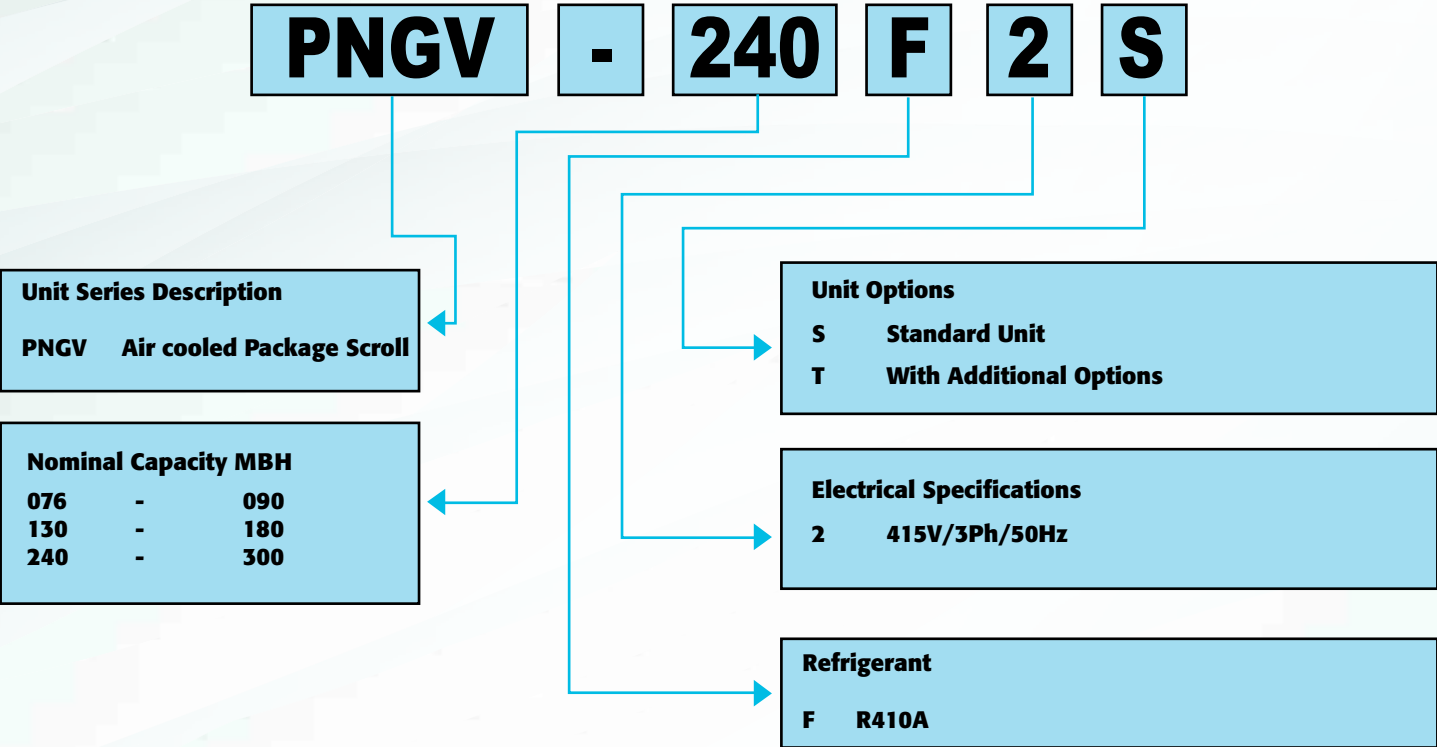
To ensure the highest performance in the future, RIC harnesses its continuous research to enhance efficiency and quality, while continuing its efforts to manufacture products capable of adapting to climate, environmental, and energy challenges.



Facts throughout the years

- 1973 Warehouses were established by Amiri Decree.
- 1979 RIC Constructed the Medical Cold Stores Complex, the world's largest at that time.
- 1980 RIC Air Conditioning manufacturing plant set up in Sulaibya.
- 1981 Production of Package & Mini-Split A/Cs started under York-Gulf.
- 1984 RIC was listed in Kuwait Stock Exchange.
- 1986 COOLEX brand Production Launched.
- 1991 RIC rebuilt the manufacturing plant destroyed during the war.
- 1997 Achieved ISO Certification ISO 9001:1994.
- 2002 ETL Designed testing lab became fully operational.
- 2004 Privatization of RIC.
- 2010 COOLEX becomes the first A/C Unit to Pass MEW's new regulations.
- 2010 RIC Factory Renovation and Expansion into neighboring countries.
- 2012 Achieved UL & AHRI Certification for Coolex Units.
- 2014 Achieved SASO Certification for Concealed Ducted Split Series.
- 2014 Achieved EUROVENT Certification for Air Handling Units AHU.
- 2014 Achieved UL Certification for Air Cooled Chillers.
- 2015 Achieved ISO 17025 Certification for Psychrometric Laboratory.
- 2016 Achieved Energy Efficiency Certification for Concealed Ducted Split Series & Rooftop Package units (Kingdom of Bahrain).
- 2016 Acquisition of Gulf Paramount for Electrical Services Company.
- 2021 Acquisition of Kuwait Pipes Industries & Oil Services factory, resulting in a change of the company's name from Refrigeration Industries & Storage Co. to Refrigeration Industries & Storage and Oil Services Co.

NOMENCLATURE



STANDARD SPECIFICATIONS

General

- The Package Units (PNGV) are factory assembled cooling or combination of cooling and heating with electric heater, suitable for outdoor installation mounting on the roof or ground.
- The packaged unit consists of scroll compressors, cooling coil, condenser coil, fans, electric heater (optional), control wiring and interconnecting piping-all factory assembled.
- The units are rated and tested in accordance with AHRI 210/240 & AHRI 340/360 standard.

Unit Casing

Panels are fabricated from hot dipped G90, Zinc coating and zero spangle galvanized steel, oven-baked powder coated. The unit is provided with an integral weather resistant control panel for outdoor application. Panels and access doors are provided for inspection and access for all internal parts.

Compressor

The compressors are hermetic scroll type provided with crankcase heater, internal pressure relief valve which provides high pressure protection to the refrigerant system and rubber vibration isolators for quiet and efficient operation. The compressors are equipped with internal motor protector for safe operation. The compressors are built to NF, VPE, CSA, & UL certification.

Evaporator Coils

The coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum louvered fins. The assembled coils are factory leak tested under water at a pressure of 350 psig for quality and leak free units.

Condenser Coils

The coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum louvered fins. The assembled coils are factory leak tested under water at a pressure of 700 psig for quality and leak free units.

Evaporator Fan

The units are provided with centrifugal forward curve fans which are statically and dynamically balanced belt driven, designed for low sound level operation

Evaporator Blower Motor

Motors are Open Drip Proof (ODP) type with class B insulation with permanently lubricated bearings and automatic thermal protection.

Condenser Fans

Condenser air fan is of the propeller type, aluminum blade with a direct drive motor upward discharge and provided with fan grille mounted in casing.

Condenser Fan Motor

Motors are totally enclosed air-over type with class F insulation for weather protection with permanently lubricated bearings and automatic thermal protection.

Drain Pan

The drain pan is fabricated of painted galvanized steel with insulation.

Air Filter

High dust holding capacity, low resistance filter. It consists of metal aluminum mesh with unique pattern and can be cleaned with regular water and prolonged use.

Refrigerant Circuit

PNGv series comes complete, as standard, with properly sized refrigerant lines including thermostatic expansion valve, sight glass, filter drier, automatic high and low pressure switch and full operating charge of R410A in each circuit.

Control Panel

The control panel enclosure is fabricated out of heavy gauge sheet steel powder coated bake finished. Internal power and control wiring is neatly routed, properly anchored and all wires are identified with cable markers as per NEC standard applicable to HVAC units. Major components used in the control panel are UL approved.

ELECTRICAL CONTROLS

Control Panel:

- Anti-short recycle timer for each compressor
- 24Vac control transformer
- Control relays
- Voltage monitor for under/over voltage, phase loss & phase reversal
- High & Low pressure safety switches
- Start/Stop button
- Control terminal block for thermostat connection
- Industrial socket for field power connection

OPTIONAL SPECIFICATIONS

Construction

- Double skin for evaporator side
- Anti-corrossion coating for coils
- Copper fins for evaporator and/or condenser
- Stainless steel drain pan
- Special Air filter material
- Filter box with High Efficiency Bag filters
- Sand trap louver

Electrical

- Electric heater
- External overload for condenser fan motor and blower motor
- External overload for compressor
- TEFC Blower motor with Class F insulation
- Mild ambient kit
- Anti - ice thermostat
- Air flow switch
- Ultra violet light
- Modbus connectivity
- Wi-Fi Thermostat

Refrigeration

- Pump down kit
- Hot gas bypass kit
- High & Low Pressure gauges
- Rotalock valve for compressor
- Replaceable filter drier with mechanical shut-off valve
- Adjustable high/low pressure switch

Coolex App



Wi Fi Module



Typical Thermostat



GENERAL DATA

Outdoor Units		PNGV-076	PNGV-090	PNGV-130	PNGV-180	PNGV-240	PNGV-300
Power Supply	V / PH / HZ	415/3/50					
Evaporator Blower	Type	Centrifugal Forward Curve Belt Driven					
	Motor Enclosure/Ins Class	Open Drip Proof, Class B					
	Nominal HP	1	2	2	3	5	
Evaporator Coil	Type	Hydrophilic Aluminum Fins & Inner Grooved Copper Tubes					
	Rows	4R					
Air Filter	Type	Washable aluminum mesh					
	Thickness (in)	1"			2"		
Compressor	Type	Hermetic Scroll					
	Quantity	1			2		
	Refrigerant	R410A					
	Refrigerant circuits	1			2		
	Expansion device type	Thermostatic Expansion Valve					
Condenser Fan	Type	Propeller					
	No. of fans	1			2		
	Motor Enclosure/Ins Class	Totally Enclosed Air Over Type , Class F					
	Nominal HP x Qty	0.7 x 1	1.3 x 1		0.7 x 1	1.3 x 2	2.1 x 2
Condenser Coil	Type	Enhanced Aluminum Fins & Copper Tubes					
	Rows	3R/4R					
Weight	kg	232	300	576	657	810	1074

GENERAL DATA

Model	Air Flow CFM	Condenser Ambient Temperature [°F]								
		95			115			125		
		Capacity Btu/Hr		kW Input	Capacity Btu/Hr		kW Input	Capacity Btu/Hr		kW Input
		Total	Sen.		Total	Sen.		Total	Sen.	
PNGV-076	2200	68,607	48,664	6.04	61,050	45,948	7.49	57,182	44,585	8.40
	2350	71,722	55,277	6.11	63,822	52,193	7.62	59,778	50,644	8.46
	2500	72,568	59,204	6.15	64,575	55,901	7.68	60,484	54,243	8.50

PNGV-090	2600	83,107	59,718	7.59	74,904	56,681	9.59	70,526	55,090	10.67
	2800	85,332	65,202	7.65	76,910	61,886	9.66	72,415	60,148	10.76
	3000	86,653	69,406	7.69	78,100	65,877	9.71	73,535	64,027	10.84

PNGV-130	4000	135,614	96,854	11.07	122,671	91,985	13.89	115,202	89,227	15.63
	4400	138,035	103,123	11.12	124,861	97,938	13.96	117,259	95,002	15.71
	4800	140,952	112,825	11.19	127,500	107,152	14.04	119,737	103,941	15.80

PNGV-180	5100	157,822	112,237	13.90	140,582	106,244	17.99	134,141	104,159	20.30
	5700	162,048	122,543	14.51	144,346	116,000	18.22	137,734	113,723	20.40
	6300	164,556	130,445	14.92	146,580	123,481	18.32	139,865	121,057	20.54

PNGV-240	6800	232,496	161,876	20.87	211,531	153,659	26.20	199,689	149,109	29.39
	7000	236,234	169,751	20.95	214,932	161,134	26.30	202,899	156,363	29.50
	7300	239,677	177,969	21.02	218,064	168,935	26.38	205,856	163,933	29.60

PNGV-300	9000	264026	181015	22.30	238,631	170,972	28.12	224,283	165,421	31.58
	9200	268682	190217	22.38	242,839	179,664	28.23	228,239	173,830	31.70
	9500	273010	200167	22.46	246,750	189,062	28.33	231,914	182,923	31.81

LEGEND:

CFM : Air flow rate (Ft³/minute)
P.I. : power input is total power.

Note: Above performance based on Evaporator On Coil Temperature of 80°F DB / 67°F WB

UNIT ELECTRICAL DATA

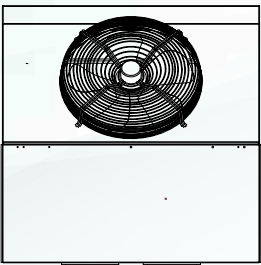
MODEL	POWER SUPPLY	VOLTAGE RANGE		Condenser Fan Motor		Compressor 1		Compressor 2		Evaporator Blower Motor		MCA	MOCP
	(V-PH-HZ)	MIN.	MAX.	HP	FLA	RLA	LRA	RLA	LRA	HP	FLA		
PNGV-076	415-3-50	374	457	0.7	1.25	13.6	100.0	-	-	1.0	2.4	20.7	30
PNGV-090	415-3-50	374	457	1.3	2.3	20.8	144.0	-	-	2.0	4.3	32.6	50
PNGV-130	415-3-50	374	457	0.7(EA)	1.25(EA)	12.5	75.0	14.5	101.0	3.0	4.6	37.7	50
PNGV-180	415-3-50	374	457	1.3(EA)	2.3 (EA)	16.4	128.0	17.9	139.0	5.0	7.2	50.6	60
PNGV-240	415-3-50	374	457	2(EA)	3.8 (EA)	17.9	139.0	20.8	144.0	5.0	7.2	58.7	70
PNGV-300	415-3-50	374	457	2(EA)	3.8 (EA)	20.8	144.0	20.8	144.0	5.0	7.2	61.6	80

LEGEND:

FLA - Full Load Amps
 HP - Horse Power
 LRA - Locked Rotor Amps

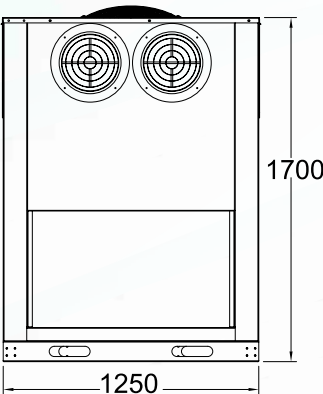
RLA - Rated Load Amps
 MCA - Minimum Circuit Amps
 MOCP - Maximum Over Current Protection

UNIT DIMENSIONS

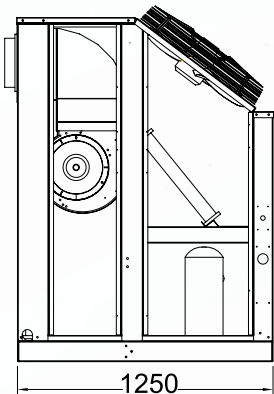


TOP VIEW

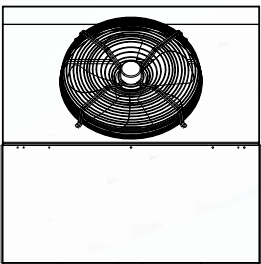
PNGV-076
ALL DIMENSIONS ARE IN MM



FRONT VIEW

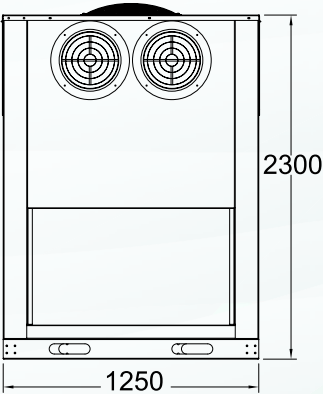


SIDE VIEW

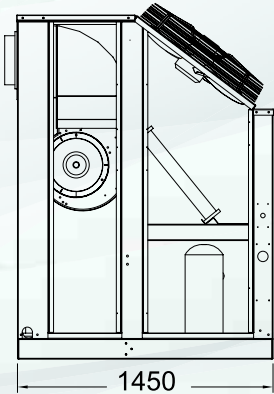


TOP VIEW

PNGV-090/130
ALL DIMENSIONS ARE IN MM

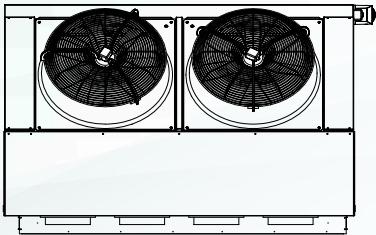


FRONT VIEW



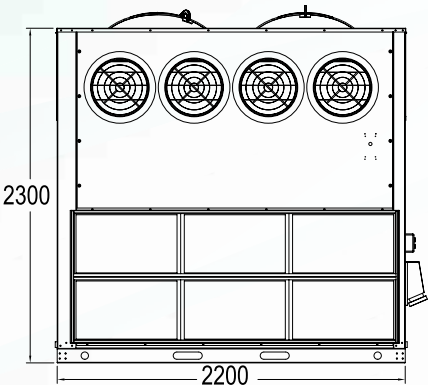
SIDE VIEW

UNIT DIMENSIONS

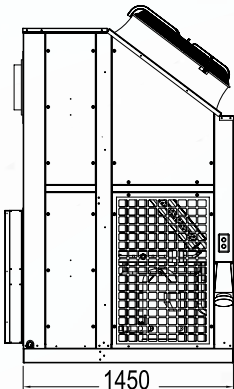


TOP VIEW

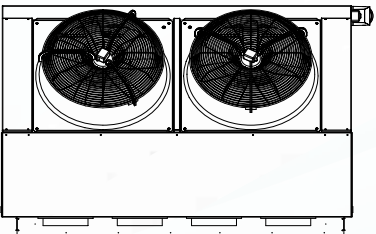
PNGV-180/240
ALL DIMENSIONS ARE IN MM



FRONT VIEW

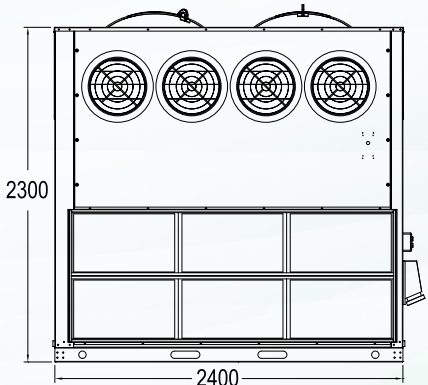


SIDE VIEW

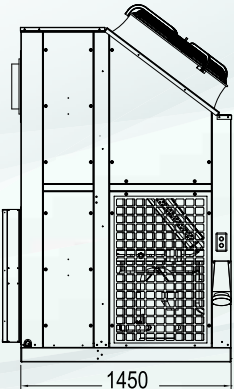


TOP VIEW

PNGV-300
ALL DIMENSIONS ARE IN MM

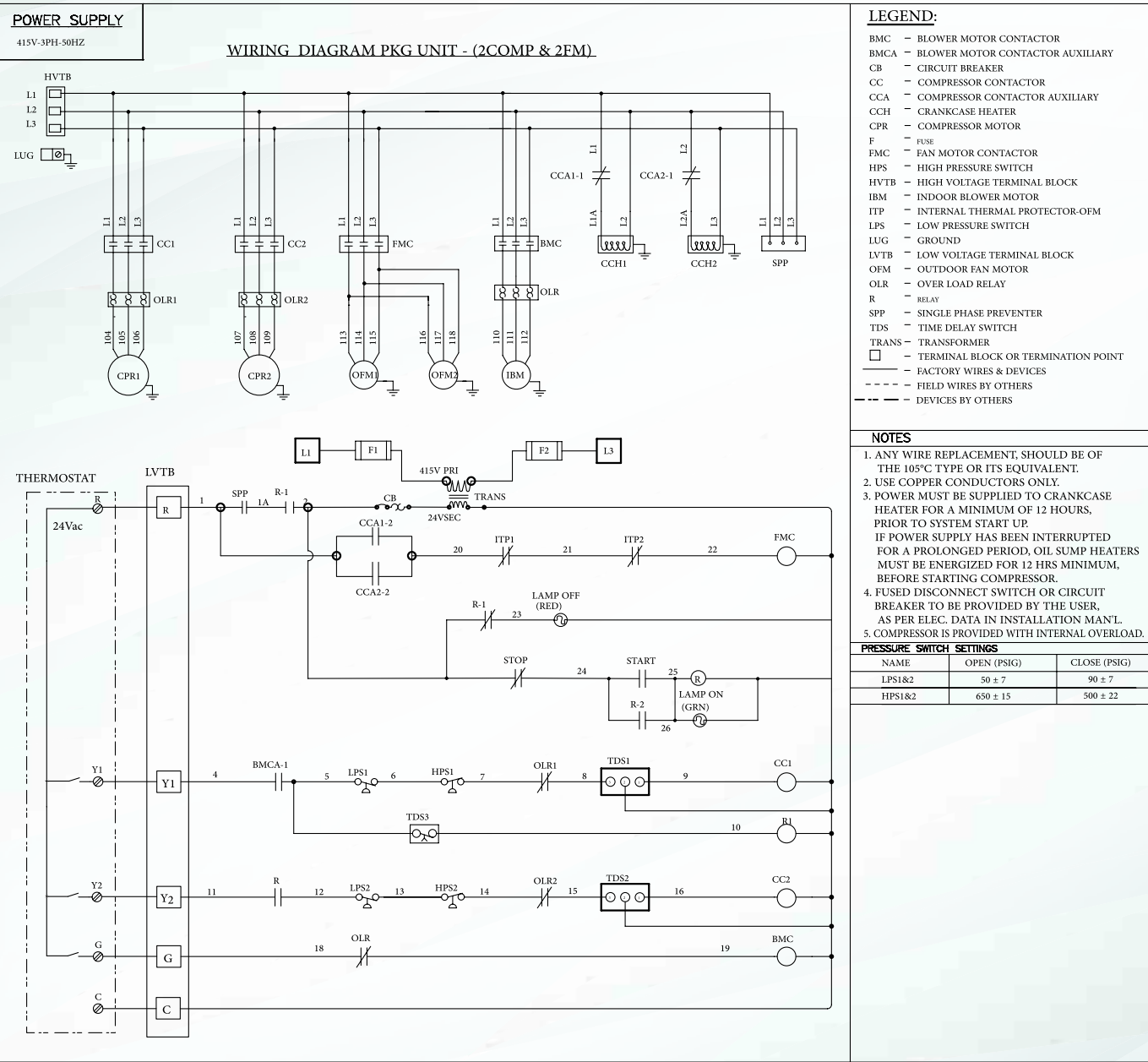


FRONT VIEW

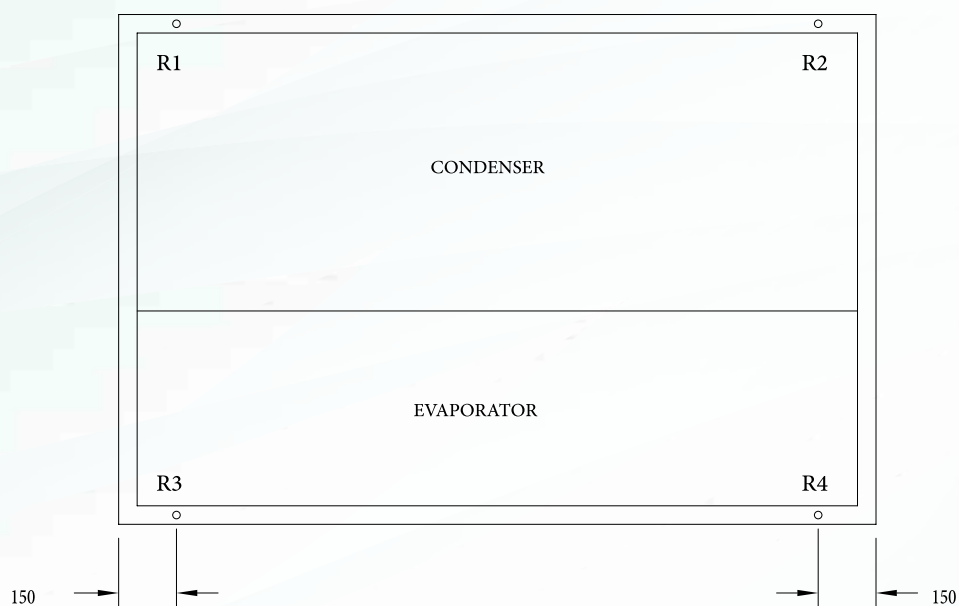


SIDE VIEW

TYPICAL WIRING DIAGRAM



LOAD DISTRIBUTION



	LOAD DISTRIBUTION (kg)				Total Weight
MODEL	A (mm)	B (mm)	X1 (kg)	X2 (kg)	
PNGv-076	66	62	53	52	232
PNGv-090	85	80	68	67	300
PNGv-130	163	154	131	128	576
PNGv-180	181	181	148	148	657
PNGv-240	223	223	182	182	810
PNGv-300	295	295	242	242	1074



شركة صناعات التبريد والتخزين والخدمات النفطية

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