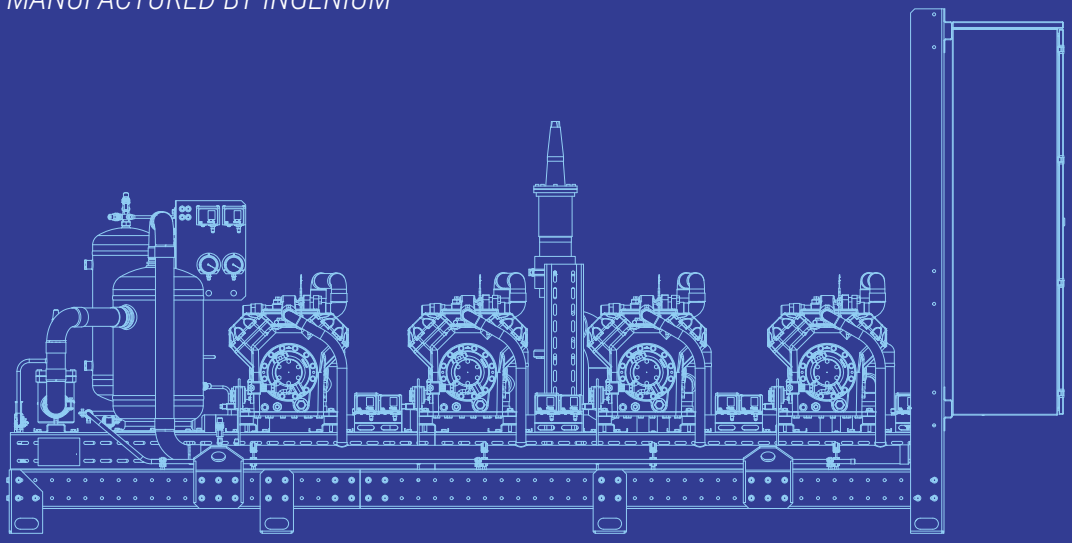
TECHNICAL CATALOGUE

INGENIUM

PRODUCT CATALOGUE

MANUFACTURED BY INGENIUM ™



ingenium-company.ru

REV. I. 08.2020

I-CU series cooling units

Semi-hermetic piston compressor type
units with cooling capacity from 1 kW to 460 kW

Semi-hermetic screw compressor type
units with cooling capacity from 12 to 1710 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 228 kW

Compressor-condenser unit
cooling capacity from 3 to 1500 kW

Heat pump unit
with capacity from 3 to 1500 kW

I-CC series cooling units

Liquid cooling systems - chillers

Semi-hermetic screw compressor type
units with cooling capacity from 65 to 1600 kW

Semi-hermetic piston compressor type
units with cooling capacity from 1,5 to 460 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 150 kW

I-RU series receiver units

I-PU series pumping units

Cooling units are completed with the original INGENIUM control panels

The company conforms ISO-2015 QMS

INGENIUM ™ equipment meets the EEU requirements

Field of Application

Food and Processing Industry
- *edible food and food raw material process cooling and freezing*
- *food storage maintenance (meat, poultry, fish, milk, cheese, vegetable oil, beer, beverages, bread, confectionary products and etc.)*
- *vegetable and fruit long-term CA-storage maintenance (vegetable and fruit storehouse type implementation)*
- *handling and storage*
- *process air-conditioning of manufacturing areas*

Chemical Industry
clean ethylene, propane, propylene content intake from petroleum and natural gas refinery, synthetic material and nitrogenous fertilizers industrial manufacturing

Construction
indoor climate control systems

Nuclear Industry
cooling units

Mining Industry
soil freezing in hole drilling process

Sports facilities
ice rinks and arenas, winter sports

Data processing centers
temperature control in enclosed space within desired limits

Logistics and Retail
low-temperature food storage facilities, distribution centers, wholesale distribution centers, hypermarkets, industrial freezers and freezing chambers

Pharmaceutical Industry
Industrial freezing facilities in drug manufacturing

Metallurgical engineering
cooling systems in processing: wet blast furnace gas cleaning system

Plastic products
plastic and polymeric materials processing, PET manufacturing, PVC processing, PAP manufacturing, plastic window profile, packing units, cooling systems in injection molding machines and process extrusion lines processing, calender rollers and extruders operating

Shipbuilding Industry
cooling units for fishery products freezing and storage maintenance

Nomenclature

Manufacturer (INGENIUM)	Production batch (Type of products)		Temperature characteristics	Quantity of compressor units		Compressor model	Oil type	Possible options		Refrigerant coolant
I	– CU	–	M	– N	x	4PES15	Y	XX...X		R507A

CU	compressor unit	H	high temperature	Y	synthetical
CC	liquid cooling systems	M	medium temperature		
RU	receiver units	L	low temperature		
PU	pumping units				

Compressor in stock

End-to-end options description

Option A – vibration dampers
- ***A1*** *– vibration isolators set for each compressor*
- ***A2*** *– vibrating bearings set under frame-mounted compressor unit*

Option B – economizer, liquid and steam injector
- ***B1*** *– mechanically controlled TEV economizer*
- ***B2*** *– electronically controlled TEV economizer*
- ***B3*** *– liquid injection system*
- ***B4*** *– steam injection system*

Option C – check valve
- ***C1*** *– discharge reinforced check valve for each compressor unit*
- ***C2*** *– discharge line check valve following the oil separator*

Option D – liquid level sensor
- ***D1*** *– refrigerant receiver LLS*
- ***D2*** *– refrigerant receiver LLS*
- ***D3*** *– oil receiver tank LLS*
- ***D4*** *– oil receiver tank HLS*
- ***D5*** *– oil separator chamber LLS*

Option E – control panel
- ***E1*** *– control cabinet without controller. Suitable for units without capacity control options*
- ***E2*** *– control cabinet with a controller for stepwise capacity regulation. Applies to options Q1 and Q2*
- ***E5*** *– ontrol cabinet with a controller for smooth performance control. Applies to option Q5*

Option F – cylinder heads blowdown fan

Option H – hot gas delivery line for operating the consumers defrosting system

Option K – oil cooling set
- ***K1*** *– ODAF system*
- ***K2*** *– thermosyphon-type oil cooling system*
- ***K3*** *– liquid-type oil cooling system*

Option L – heat insulated liquid separator on suction line for each compressor

Option M – high- and low-pressure gauge

Option O – oil separator chamber equipped with heater, shutoff valve, filter and inspection window
- ***O1*** *– oil level indication line equalization line*
- ***O2*** *– oil level electrically controlled adjusters*

Option P – high- and low-pressure switch on suction and discharge line manifold
- ***P1*** *– high pressure control switch for condensing fans cooling, single item*
- ***P2*** *– high pressure control switch for condensing fan cooling, two items*
- ***P3*** *– high pressure control switch for condensing fan cooling, three items*

Option Q – capacity control
- ***Q1*** *– compressor capacity regulation per one cylinder block (50..100%)*
- ***Q2*** *– compressor capacity regulation for two cylinder blocks (10..100%)*
- ***Q3*** *– master compressor capacity control for three cylinders' modules*
- ***Q4*** *– compressor capacity digital control*
- ***Q5*** *– frequency control of compressor capacity*
- ***Q6*** *– two master compressors' capacity frequency control unit*

Option R – receiver module and liquid channel
- ***R1*** *– receiver unit equipped with shutoff valves, one relief damper, filter drain, inspection window and liquid flow line frame-mounted shutoff valve*
- ***R2*** *– receiver unit equipped with shutoff valves, two relief dampers and three-way valve, as well as with filter drain, inspection window and liquid line frame-mounted shutoff valve*
- ***R3*** *– two relief dampers with three-way valve mounted on refrigerant receiver*

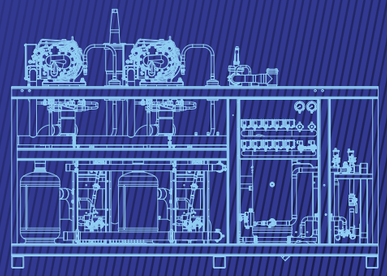
Option S – UV rays shielded insulation, IP55-compliant pressure switch protection, additional compressor crankcase heating

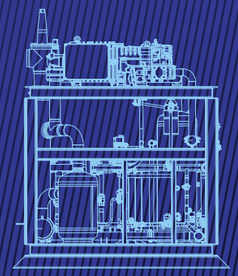
Option T – tubular electric heating element, heating
- ***T1*** *– refrigerant receiver heating system*

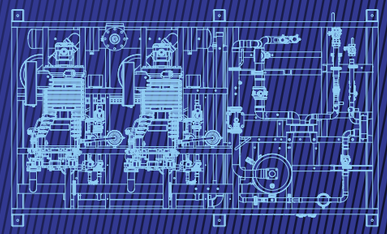
Option V – shutoff valves set

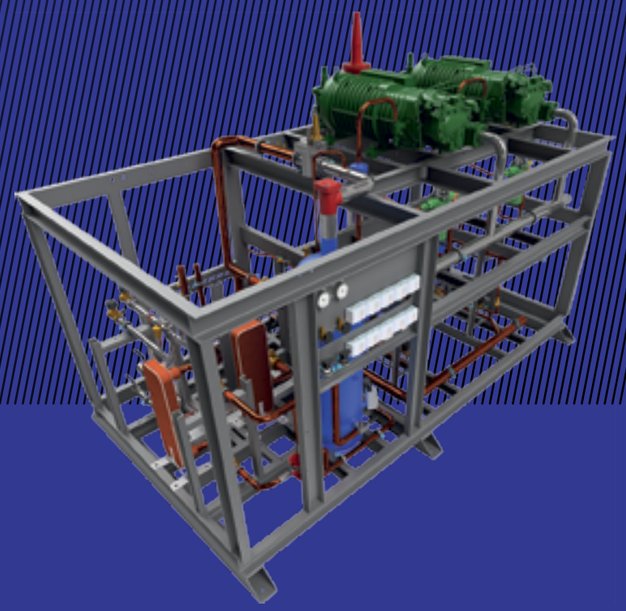
Option W – condensing pressure control system for discharge line

Semi-hermetic screw compressor type multi-compressor units









SERIES
I-CU
«INGENIUM-COMPANY» MANUFACTURED REFRIGERATING UNITS

Compressor units item name

I-CU – L – 2 x HSN7471 – B1E2LMVW R507A

1 | 2 | 3 | 4 | 5 | 6

1. ***Unit type***
   I-CU *– Ingenium compressor unit*
2. ***Temperature level***
   (evaporation temperature)
   L/M/H *– Low/Medium/High*
3. ***Compressor units' quantity***
   No number marking in case of single item
4. ***Compressor unit short name***
   In case of different compressor types usage, the marking is indicated with " / "
5. ***Options***
   refer to "End-to-end options description"
6. ***Refrigerant used***
   (optional)

Semi-hermetic screw compressor type multi-compressor units
(standard package + options)

Standard item list
Semi-hermetical screw compressor equipped with shutoff valves, engine protection gear, capacity regulation system and high- and low- pressure safety switch per each compressor unit
Discharge manifold
Oil separator chamber equipped with heater, thermostat, LL oil indication relay, relief damper and non-return shutoff valve
Oil filter, flow switch, inspection window, shutoff valve, solenoid valve installed on the oil return line per each compressor
Condensing pressure control system on the discharge line
Receiver equipped with shutoff valves and relief damper, filter drained liquid flow line system, inspection window and output shutoff valve
Suction line cleaning filter per each compressor
Heat insulated suction manifold
Painted metal frame
Documentation set

Additional options

Item name	Marking
Mechanically controlled TEV economizer	B1
Electrically controlled TEV economizer	B2
Refrigerant receiver LLS	D1
Refrigerant receiver HLS	D2
Control panel	E
Hot gas delivery line for operating the consumers defrosting system	H
ODAF system	K1
Thermosyphon-type oil cooling system	K2
Liquid-type oil cooling system	K3
Heat insulated liquid separator within each compressor unit suction line	L
High- and low- pressure gauges	M
Suction and discharge manifold equipped with low- and high- pressure switches	P
UV rays shielded insulation, IP55-compliant pressure switch protection, additional compressor crankcase heating	S
Refrigerant receiver heating system	T1
Shutoff valves set	V

Compressor units can be equipped with extra-standard items with additional options to be provided on request

Semi-hermetic screw compressor type multi-compressor units

Meduim temperature units

R404A/R507A, t_k= 45°C, t_o= −10°C, SH=10K, SC=2K, ECO-mode

Model	Cooling capacity, kW	Power consumption, kW	Maximum current rating, A	Overall dimensions, LxWxH, mm	Weight, kg	Refrigerant receiver chamber volume, l	Discharge line, mm	Condensing unit drain line, mm	Liquid flow line, mm	Suction line, mm	Oil delivery line to oil cooler, mm	Oil drain line from oil cooler, mm
I-CU-M-2xHSK5343	122,4	55,6	106,0	3030x1900x1792	1500	160	42	54	42	65	28	28
I-CU-M-2xHSK5353	143,4	64,8	118,0	3030x1900x1792	1500	160	42	54	42	65	28	28
I-CU-M-2xHSK5363	163,6	72,4	134,0	3030x1900x1792	1500	160	54	54	54	80	28	28
I-CU-M-2xHSK6451	191,6	82,0	160,0	3030x1900x1792	2000	200	54	54	54	80	35	35
I-CU-M-2xHSK6461	227,0	100,8	198,0	3030x1900x1792	2000	200	54	54	54	100	35	35
I-CU-M-2xHSK7451	274,4	123,6	250,0	3030x1900x1792	2000	300	65	80	65	100	35	35
I-CU-M-2xHSK7461	306,0	133,6	290,0	3030x1900x1792	2200	300	65	80	65	100	35	35
I-CU-M-2xHSK7471	332,2	145,2	326,0	3030x1900x1792	2200	300	65	80	65	100	35	35
I-CU-M-2xHSK8551	416,0	203,2	362,0	3030x1900x1792	2800	300	80	80	80	125	42	42
I-CU-M-2xHSK8561	476,0	225,4	434,0	3030x1900x1792	2800	300	80	80	80	125	42	42
I-CU-M-2xHSK8571	532,0	242,6	494,0	3030x1900x1792	2800	300	80	80	80	2 x 100	42	42
I-CU-M-2xHSK8581	610,0	268,8	556,0	3030x1900x1792	2800	300	80	80	80	2 x 100	42	42
I-CU-M-2xHSK8591	682,0	302,8	662,0	3030x1900x1792	2800	300	80	80	80	2 x 100	42	42
I-CU-M-3xHSK5343	183,6	83,4	320,0	3840x1900x1792	2000	200	54	54	54	80	35	35
I-CU-M-3xHSK5353	215,1	97,2	356,0	3840x1900x1792	2000	200	54	54	54	100	35	35
I-CU-M-3xHSK5363	245,4	108,6	404,0	3840x1900x1792	2000	200	65	54	54	100	35	35
I-CU-M-3xHSK6451	287,4	123,0	482,0	3840x1900x1792	2300	300	65	65	65	100	42	42
I-CU-M-3xHSK6461	340,5	151,2	596,0	3840x1900x1792	2300	300	65	65	65	100	42	42
I-CU-M-3xHSK7451	411,6	185,4	752,0	3840x1900x1792	2500	300	80	80	65	125	42	42
I-CU-M-3xHSK7461	459,0	200,4	872,0	3840x1900x1792	2500	300	80	80	65	125	42	42
I-CU-M-3xHSK7471	498,3	217,8	980,0	3840x1900x1792	2500	300	80	80	65	125	42	42
I-CU-M-3xHSK8551	624,0	304,8	1088,0	3840x1900x1792	3000	-	80	100	80	2 x 100	54	54
I-CU-M-3xHSK8561	714,0	338,1	1304,0	3840x1900x1792	3000	-	100	125	100	2 x 100	54	54
I-CU-M-3xHSK8571	798,0	363,9	1484,0	3840x1900x1792	3000	-	100	125	100	2 x 125	54	54
I-CU-M-3xHSK8581	915,0	403,2	1670,0	3840x1900x1792	3000	-	100	125	100	2 x 125	54	54
I-CU-M-3xHSK8591	1023,0	454,2	1988,0	3840x1900x1792	3000	-	100	125	100	2 x 125	54	54
I-CU-M-4xHSK5343	244,8	111,2	210,0	4250x2345x1792	2500	-	65	65	65	100	42	42
I-CU-M-4xHSK5353	286,8	129,6	234,0	4250x2345x1792	2500	-	65	65	65	100	42	42
I-CU-M-4xHSK5363	327,2	144,8	266,0	4250x2345x1792	2500	-	65	65	65	100	42	42
I-CU-M-4xHSK6451	383,2	164,0	318,0	4250x2345x1792	2800	-	80	80	80	125	54	54
I-CU-M-4xHSK6461	454,0	201,6	394,0	4250x2345x1792	2800	-	80	80	80	125	54	54
I-CU-M-4xHSK7451	548,8	247,2	498,0	4250x2345x1792	3000	-	80	80	80	2 x 100	54	54
I-CU-M-4xHSK7461	612,0	267,2	578,0	4250x2345x1792	3000	-	80	80	80	2 x 100	54	54
I-CU-M-4xHSK7471	664,4	290,4	650,0	4250x2345x1792	3000	-	100	100	100	2 x 100	54	54
I-CU-M-4xHSK8551	832,0	406,4	722,0	4250x2345x1792	3800	-	100	100	100	2 x 125	54	54
I-CU-M-4xHSK8561	952,0	450,8	866,0	4250x2345x1792	3800	-	100	100	100	2 x 125	65	65
I-CU-M-4xHSK8571	1064,0	485,2	986,0	4250x2345x1792	3800	-	100	125	100	2 x 125	65	65
I-CU-M-4xHSK8581	1220,0	537,6	1110,0	4250x2345x1792	3800	-	125	125	125	3 x 125	65	65
I-CU-M-4xHSK8591	1364,0	605,6	1322,0	4250x2345x1792	3800	-	125	125	125	3 x 125	65	65
I-CU-M-5xHSK8551	1040,0	508,0	262,0	5410x2803x1792	4500	-	100	125	100	2 x 125	65	65
I-CU-M-5xHSK8561	1190,0	563,5	292,0	5410x2803x1792	4500	-	125	125	100	3 x 125	65	65
I-CU-M-5xHSK8571	1330,0	606,5	332,0	5410x2803x1792	4500	-	125	125	125	3 x 125	65	65

Semi-hermetic screw compressor type multi-compressor units

Meduim temperature units

R404A/R507A, t_k= 45°C, t_o= −35°C, SH=10K, SC=2K, ECO-mode

Model	Cooling capacity, kW	Power consumption, kW	Maximum current rating, A	Overall dimensions, LxWxH, mm	Weight, kg	Refrigerant receiver chamber volume, l	Discharge line, mm	Condensing unit drain line, mm	Liquid flow line, mm	Suction line, mm	Oil delivery line to oil cooler, mm	Oil drain line from oil cooler, mm
I-CU-L-2xHSN5343	46,8	50,8	97,0	3030x1900x1792	1500	160	28	35	28	65	28	28
I-CU-L-2xHSN5353	55,4	57,8	105,0	3030x1900x1792	1500	160	35	42	28	65	28	28
I-CU-L-2xHSN5363	65,0	65,4	117,0	3030x1900x1792	1500	160	35	42	28	80	28	28
I-CU-L-2xHSN6451	78,0	73,8	131,0	3030x1900x1792	2000	200	42	54	35	80	35	35
I-CU-L-2xHSN6461	89,8	86,0	159,0	3030x1900x1792	2000	200	42	54	35	100	35	35
I-CU-L-2xHSN7451	106,6	108,6	197,0	3030x1900x1792	2200	200	42	54	42	100	35	35
I-CU-L-2xHSN7461	123,0	114,4	249,0	3030x1900x1792	2200	200	42	54	42	100	35	35
I-CU-L-2xHSN7471	130,0	122,2	289,0	3030x1900x1792	2200	200	54	54	54	100	35	35
I-CU-L-2-HSN8561	156,6	183,0	395,0	3030x1900x1792	2800	200	54	54	54	100	42	42
I-CU-L-2xHSN8571	210,6	190,8	433,0	3030x1900x1792	2800	300	65	80	65	100	42	42
I-CU-L-2xHSN8591	261,4	254,2	549,0	3030x1900x1792	2800	300	65	80	65	100	42	42
I-CU-L-3xHSN5343	70,2	76,2	146,0	3840x1900x1792	2000	200	42	42	35	80	35	35
I-CU-L-3xHSN5353	83,1	86,7	158,0	3840x1900x1792	2000	200	42	42	35	80	35	35
I-CU-L-3xHSN5363	97,5	98,1	176,0	3840x1900x1792	2000	200	42	42	35	100	35	35
I-CU-L-3xHSN6451	117,0	110,7	197,0	3840x1900x1792	2300	200	42	54	42	100	42	42
I-CU-L-3xHSN6461	134,7	129,0	239,0	3840x1900x1792	2300	200	54	54	42	100	42	42
I-CU-L-3xHSN7451	159,9	162,9	296,0	3840x1900x1792	2500	200	54	54	54	125	42	42
I-CU-L-3xHSN7461	184,5	171,6	374,0	3840x1900x1792	2500	200	54	54	54	125	42	42
I-CU-L-3xHSN7471	195,0	183,3	434,0	3840x1900x1792	2500	200	54	54	54	125	42	42
I-CU-L-3xHSN8561	234,9	274,5	593,0	3840x1900x1792	3000	300	65	65	54	2 x 100	54	54
I-CU-L-3xHSN8571	315,9	286,2	650,0	3840x1900x1792	3000	300	65	65	54	2 x 125	54	54
I-CU-L-3xHSN8591	392,1	381,3	824,0	3840x1900x1792	3000	300	80	80	80	2 x 125	54	54
I-CU-L-4xHSN5343	93,6	101,6	194,0	4250x2345x1792	2500	-	42	42	35	100	42	42
I-CU-L-4xHSN5353	110,8	115,6	210,0	4250x2345x1792	2500	-	42	42	35	100	42	42
I-CU-L-4xHSN5363	130,0	130,8	234,0	4250x2345x1792	2500	-	54	54	35	100	42	42
I-CU-L-4xHSN6451	156,0	147,6	262,0	4250x2345x1792	2800	-	54	54	42	125	54	54
I-CU-L-4xHSN6461	179,6	172,0	318,0	4250x2345x1792	2800	-	54	54	42	125	54	54
I-CU-L-4xHSN7451	213,2	217,2	394,0	4250x2345x1792	3000	-	54	54	54	2 x 100	54	54
I-CU-L-4xHSN7461	246,0	228,8	498,0	4250x2345x1792	3000	-	65	65	65	2 x 100	54	54
I-CU-L-4xHSN7471	260,0	244,4	578,0	4250x2345x1792	3000	-	65	65	65	2 x 100	54	54
I-CU-L-4xHSN8561	313,2	366,0	790,0	4250x2345x1792	3800	-	80	100	65	2 x 125	65	65
I-CU-L-4xHSN8571	421,2	381,6	866,0	4250x2345x1792	3800	-	80	100	80	2 x 125	65	65
I-CU-L-4xHSN8591	522,8	508,4	1098,0	4250x2345x1792	3800	-	80	100	80	3 x 125	65	65
I-CU-L-5xHSN8561	391,5	457,5	987,0	5410x2803x1792	4500	-	80	100	80	2 x 125	65	65
I-CU-L-5xHSN8571	526,5	477,0	1082,0	5410x2803x1792	4500	-	80	100	80	2 x 125	65	65
I-CU-L-5xHSN8591	653,5	635,5	1372,0	5410x2803x1792	4500	-	100	125	100	3 x 125	65	65

ingenium—company.ru

Manufacturing facility / Head office
344064, Rostov-on-Don,
Ingenernaya St.,16

Sales office
127238, Moscow
Dmitrovskoye highway, 71B

8 (800) 511 12 72
mail@ingenium-company.ru
ingenium-company.ru