

6 GENERAL TECHNICAL DATA

Data Book
DB_ME_MECH-iF-G05 0411 - 0902_012024_EN
R513A

[SI System]

MECH-iF-G05		0411	0802	0902
Power supply		V/ph/Hz	400/3/50	400/3/50
PERFORMANCE				
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	414,4	814,7
Total power input	(1)	kW	133,7	249,6
EER	(1)	kW/kW	3,099	3,264
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(4)	kW	413,9	814,1
EER	(1)(4)	kW/kW	3,060	3,220
COOLING WITH PARTIAL RECOVERY				
Cooling capacity	(5)	kW	430,0	845,3
Total power input	(5)	kW	129,3	241,6
Desuperheater heating capacity	(5)	kW	110,2	204,6
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN COOLING				
Water flow	(1)	l/s	19,82	38,96
Pressure drop at the heat exchanger	(1)(4)	kPa	54,1	50,9
PARTIAL RECOVERY USER SIDE IN REFRIGERATION				
Water flow	(1)	l/s	5,320	9,877
Pressure drop at the heat exchanger	(1)	kPa	30,8	26,6
PERFORMANCE				
COOLING ONLY (GROSS VALUE)				
16°C/10°C				
Cooling capacity	(2)	kW	449,4	882,6
Total power input	(2)	kW	139,1	258,4
EER	(2)	kW/kW	3,231	3,416
23°C/15°C				
Cooling capacity	(3)	kW	514,0	1005
Total power input	(3)	kW	149,7	273,9
EER	(3)	kW/kW	3,434	3,669
EXCHANGERS				
16°C/10°C				
Water flow	(2)	l/s	17,92	35,20
Pressure drop at the heat exchanger	(2)	kPa	45,6	42,8
23°C/15°C				
Water flow	(3)	l/s	15,40	30,10
Pressure drop at the heat exchanger	(3)	kPa	35,2	32,8
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	2
Number of capacity steps		N°	0	0
No. Circuits		N°	1	2
Regulation		STEPLESS STEPLESS STEPLESS		
Min. capacity step		%	24	13
Refrigerant		R513A R513A R513A		
Theoretical refrigerant charge		kg	89,0	170
Oil charge		kg	11,0	22,0
Rc (ASHRAE)	(6)	kg/kW	0,22	0,21
FANS				
Quantity		N°	6	12
Air flow		m³/s	32,40	64,80
Total fans power input		kW	10,20	20,40
NOISE LEVEL				
Total sound Pressure	(7)	dB(A)	64	65
Total sound power level in cooling	(8)(9)	dB(A)	96	98
SIZE AND WEIGHT				
A	(10)	mm	4150	7900
B	(10)	mm	2260	2260
H	(10)	mm	2500	2500
Operating weight	(10)	kg	4350	8150

Notes:

1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
 2 Plant (side) cooling exchanger water (in/out) 16,00°C/10,00°C; Source (side) heat exchanger air (in) 35,0°C.
 3 Plant (side) cooling exchanger water (in/out) 23,00°C/15,00°C; Source (side) heat exchanger air (in) 35,0°C.
 4 Values in compliance with EN14511
 5 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.

6 Rated in accordance with AHRI Standard 550/590
 7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 8 Sound power on the basis of measurements taken in compliance with ISO 9614.
 9 Sound power level in cooling, outdoors.
 10 Unit in standard configuration, without optional accessories.
 - Not available
 Data certified in EUROVENT

GENERAL TECHNICAL DATA

Data Book
DB_ME_MECH-iF-G05 0411 - 0902_012024_EN
R513A

[SI System]

MECH-IF-G05-NR		0411		0802		0902	
Power supply		V/ph/Hz		400/3/50		400/3/50	
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	411,0	807,0	913,0		
Total power input	(1)	kW	134,5	251,0	291,1		
EER	(1)	kW/kW	3,056	3,215	3,136		
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(4)	kW	410,6	806,3	912,4		
EER	(1)(4)	kW/kW	3,010	3,170	3,100		
COOLING WITH PARTIAL RECOVERY							
Cooling capacity	(5)	kW	426,5	837,2	947,2		
Total power input	(5)	kW	130,1	242,8	281,6		
Desuperheater heating capacity	(5)	kW	112,6	209,1	242,4		
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN COOLING							
Water flow	(1)	l/s	19,66	38,59	43,66		
Pressure drop at the heat exchanger	(1)(4)	kPa	53,3	50,0	40,1		
PARTIAL RECOVERY USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	5,434	10,09	11,70		
Pressure drop at the heat exchanger	(1)	kPa	32,1	27,7	37,3		
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(2)	kW	446,0	874,4	990,3		
Total power input	(2)	kW	140,4	260,5	304,0		
EER	(2)	kW/kW	3,177	3,357	3,258		
23°C/15°C							
Cooling capacity	(3)	kW	514,0	1005	1139		
Total power input	(3)	kW	149,7	273,9	324,5		
EER	(3)	kW/kW	3,434	3,669	3,510		
EXCHANGERS							
16°C/10°C							
Water flow	(2)	l/s	17,79	34,87	39,50		
Pressure drop at the heat exchanger	(2)	kPa	45,0	42,1	33,8		
23°C/15°C							
Water flow	(3)	l/s	15,40	30,10	34,13		
Pressure drop at the heat exchanger	(3)	kPa	35,2	32,8	26,4		
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2		
Number of capacity steps		N°	0	0	0		
No. Circuits		N°	1	2	2		
Regulation		STEPLESS STEPLESS STEPLESS					
Min. capacity step		%	24	13	13		
Refrigerant		R513A R513A R513A					
Theoretical refrigerant charge		kg	89,0	170	199		
Oil charge		kg	11,0	22,0	22,0		
Rc (ASHRAE)	(6)	kg/kW	0,22	0,21	0,22		
FANS							
Quantity		N°	6	12	14		
Air flow		m³/s	29,40	58,80	68,60		
Total fans power input		kW	8,40	16,80	19,60		
NOISE LEVEL							
Total sound Pressure	(7)	dB(A)	61	62	68		
Total sound power level in cooling	(8)(9)	dB(A)	93	95	101		
SIZE AND WEIGHT							
A	(10)	mm	4150	7900	9150		
B	(10)	mm	2260	2260	2260		
H	(10)	mm	2500	2500	2500		
Operating weight	(10)	kg	4350	8150	8610		

Notes:

1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
 2 Plant (side) cooling exchanger water (in/out) 16,00°C/10,00°C; Source (side) heat exchanger air (in) 35,0°C.
 3 Plant (side) cooling exchanger water (in/out) 23,00°C/15,00°C; Source (side) heat exchanger air (in) 35,0°C.
 4 Values in compliance with EN14511
 5 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.

6 Rated in accordance with AHRI Standard 550/590
 7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 8 Sound power on the basis of measurements taken in compliance with ISO 9614.
 9 Sound power level in cooling, outdoors.
 10 Unit in standard configuration, without optional accessories.
 - Not available
 Data certified in EUROVENT

GENERAL TECHNICAL DATA

Data Book
DB_ME_MECH-iF-G05 0411 - 0902_012024_EN
R513A

[SI System]

MECH-IF-G05-SL		0411			0802			0902			
Power supply		V/ph/Hz 400/3/50 400/3/50 400/3/50									
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	407,1	799,6	903,7						
Total power input	(1)	kW	135,6	252,8	293,1						
EER	(1)	kW/kW	3,002	3,163	3,083						
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(4)	kW	406,6	799,0	903,1						
EER	(1)(4)	kW/kW	2,960	3,120	3,050						
COOLING WITH PARTIAL RECOVERY											
Cooling capacity	(5)	kW	422,4	829,6	937,6						
Total power input	(5)	kW	131,1	244,5	283,4						
Desuperheater heating capacity	(5)	kW	115,2	213,9	247,9						
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN COOLING											
Water flow	(1)	l/s	19,47	38,24	43,22						
Pressure drop at the heat exchanger	(1)(4)	kPa	52,5	49,3	39,4						
PARTIAL RECOVERY USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	5,559	10,33	11,97						
Pressure drop at the heat exchanger	(1)	kPa	33,6	29,0	39,0						
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(2)	kW	442,1	866,5	980,4						
Total power input	(2)	kW	142,0	263,1	307,1						
EER	(2)	kW/kW	3,113	3,293	3,192						
23°C/15°C											
Cooling capacity	(3)	kW	514,0	1005	1139						
Total power input	(3)	kW	149,7	273,9	324,5						
EER	(3)	kW/kW	3,434	3,669	3,510						
EXCHANGERS											
16°C/10°C											
Water flow	(2)	l/s	17,63	34,56	39,10						
Pressure drop at the heat exchanger	(2)	kPa	44,3	41,5	33,2						
23°C/15°C											
Water flow	(3)	l/s	15,40	30,10	34,13						
Pressure drop at the heat exchanger	(3)	kPa	35,2	32,8	26,4						
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2						
Number of capacity steps		N°	0	0	0						
No. Circuits		N°	1	2	2						
Regulation		STEPLESS STEPLESS STEPLESS									
Min. capacity step		%	24	13	13						
Refrigerant		R513A R513A R513A									
Theoretical refrigerant charge		kg	89,0	170	199						
Oil charge		kg	11,0	22,0	22,0						
Rc (ASHRAE)	(6)	kg/kW	0,22	0,21	0,22						
FANS											
Quantity		N°	6	12	14						
Air flow		m³/s	27,78	55,56	64,82						
Total fans power input		kW	6,60	13,20	15,40						
NOISE LEVEL											
Total sound Pressure	(7)	dB(A)	57	58	64						
Total sound power level in cooling	(8)(9)	dB(A)	89	91	97						
SIZE AND WEIGHT											
A	(10)	mm	4150	7900	9150						
B	(10)	mm	2260	2260	2260						
H	(10)	mm	2500	2500	2500						
Operating weight	(10)	kg	4410	8240	8700						

Notes:

1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
 2 Plant (side) cooling exchanger water (in/out) 16,00°C/10,00°C; Source (side) heat exchanger air (in) 35,0°C.
 3 Plant (side) cooling exchanger water (in/out) 23,00°C/15,00°C; Source (side) heat exchanger air (in) 35,0°C.
 4 Values in compliance with EN14511
 5 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.

6 Rated in accordance with AHRI Standard 550/590
 7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 8 Sound power on the basis of measurements taken in compliance with ISO 9614.
 9 Sound power level in cooling, outdoors.
 10 Unit in standard configuration, without optional accessories.
 - Not available
 Data certified in EUROVENT

7 TECHNICAL DATA SEASONAL EFFICIENCY IN COOLING (EN14825 VALUE)

Data Book
DB_ME_MECH-iF-G05 0411 - 0902_012024_EN
R513A

[SI System]

ENERGY EFFICIENCY

SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)

Ambient refrigeration

MECH-iF-G05			0411	0802	0902								
Prated,c	(1)	kW	413,9	814,1	920,4								
SEER	(1) (2)	-	5,34	5,62	5,73								
Performance η_s	(1) (3)	%	210,0	222,0	226,0								

MECH-iF-G05-NR			0411	0802	0902								
Prated,c	(1)	kW	410,6	806,3	912,4								
SEER	(1) (2)	-	5,33	5,61	5,73								
Performance η_s	(1) (3)	%	210,0	222,0	226,0								

MECH-iF-G05-SL			0411	0802	0902								
Prated,c	(1)	kW	406,6	799,0	903,1								
SEER	(1) (2)	-	5,32	5,62	5,73								
Performance η_s	(1) (3)	%	210,0	222,0	226,0								

Notes:

(1) Parameter calculated according to [REGULATION (EU) N. 2016/2281]

(2) Seasonal energy efficiency ratio

(3) Seasonal space cooling energy efficiency

The units highlighted in this publication contain R513A [GWP₁₀₀ 572] fluorinated greenhouse gases.

Data certified in EUROVENT

[SI System]

ENERGY EFFICIENCY

SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)

High temperature process cooling

MECH-iF-G05			0411	0802	0902								
Prated,c	(1)	kW	413,90	814,07	920,40								
SEPR HT	(1) (3)	-	6,36	6,72	6,85								

MECH-iF-G05-NR			0411	0802	0902								
Prated,c	(1)	kW	410,56	806,30	912,38								
SEPR HT	(1) (3)	-	6,35	6,70	6,83								

MECH-iF-G05-SL			0411	0802	0902								
Prated,c	(1)	kW	406,60	798,96	903,08								
SEPR HT	(1) (3)	-	6,34	6,70	6,82								

SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)

Process refrigeration at medium temperature

Notes:

(1) Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]

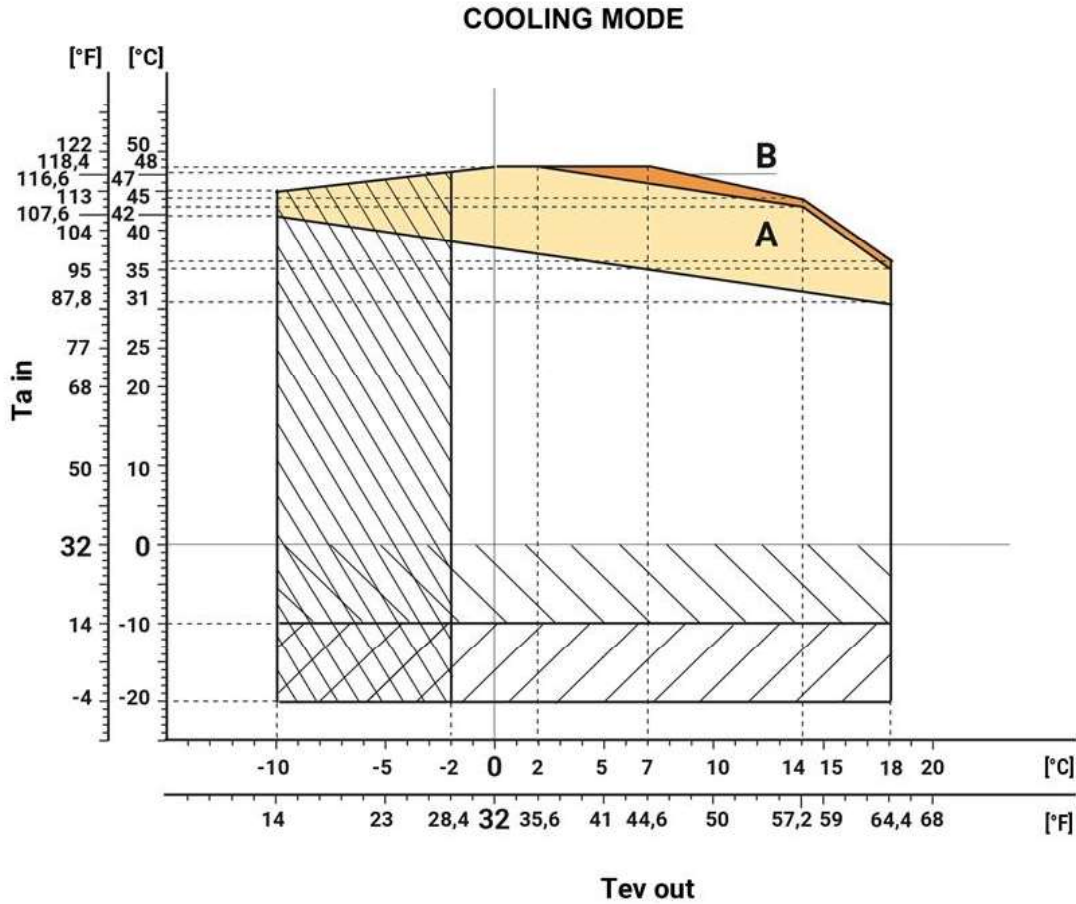
(2) Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

(3) Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP₁₀₀ 572] fluorinated greenhouse gases.

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8.1 Operating limits - Graphs



$T_{a\ in}$ Outdoor air temperature

$T_{ev\ out}$ Evaporator leaving water temperature

-  Unit at full load.
Unit at full load not super low noise (-SL version)
-  Required: Antifreeze heaters on pipes, pumps* (opt. 2432) *if present.
-  Required: Antifreeze heaters on pipes, pumps* (opt. 2432) *if present.
Extra insulation on heat exchangers / pipes + pumps* (opt. 2631 / 2633) *if present.
Electric heater on electric board (opt. 3391)
-  LT kit for low evaporator leaving water temperature (opt. 1671)
-  **A** Unit at full load.
Unit at full load not super low noise (-SL version)
-  **B** Unit at partial load.
Unit at partial load not super low noise (-SL version)

In particular operating conditions the unit can work with forced ventilation, at partial loads or with derating compressors. For any specific information please refer to the ElcaWorld software selection.

For the specific temperature limits of each model please refer to the selection software ElcaWorld.