

# Model: MTZ81

## Data

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**Type:** Hermetic piston compressors  
**Producer:** Danfoss-Maneurop  
**Series:** MTZ

## Model: MTZ81

### Technical data

Cylinder count:	2
Displacement [m <sup>3</sup> /h]:	23,63
Cylinder capacity [cm <sup>3</sup> ]:	135,8
RPM [min <sup>-1</sup> ]:	2900
Weight [kg]:	40
Oil charge [dm <sup>3</sup> ]:	2
Oil type:	160PZ
Crankcase heater type:	PTC 35 W
Maximum system test pressure low side / high side:	25 / 30
Maximum number of starts without softstart [1/h]:	12
Refrigerant charge limit [dm <sup>3</sup> ]:	5
Refrigerant:	R134a, 404A/R507, R407C
Sound power [dB]:	79
Sound power with acoustic hood [dB]:	73

### Connections

	<u>inches</u>
Suction Rotolock valve connection:	1 3/4"
Discharge Rotolock valve connection:	1 1/4"
Suction connection with supplied sleeve:	1 1/8"
Discharge connection with supplied sleeve:	3/4"

### Approvals

CCC	-
CE	+
UL	+

# Model: MTZ81

## Capacity

R134a

### Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	5 041	6 798	8 952	11 562	14 682	18 368	22 678	27 668
40	4 586	6 253	8 293	10 763	13 718	17 215	21 311	26 061
45	4 127	5 702	7 625	9 952	12 740	16 044	19 922	24 430
50	3 669	5 148	6 951	9 133	11 750	14 860	18 517	22 779
55	3 215	4 596	6 275	8 309	10 753	13 664	17 099	21 112
60	-	4 049	5 603	7 485	9 753	12 463	15 671	19 433
65	-	-	-	6 664	8 753	11 259	14 238	17 746
70	-	-	-	-	-	10 056	12 803	16 054
75	-	-	-	-	-	-	11 371	14 362

### Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	2 501	2 763	3 002	3 219	3 414	3 588	3 740	3 873
40	2 544	2 842	3 117	3 368	3 598	3 806	3 992	4 157
45	2 590	2 929	3 244	3 535	3 804	4 050	4 275	4 478
50	2 627	3 011	3 370	3 706	4 019	4 309	4 576	4 822
55	2 641	3 075	3 484	3 869	4 230	4 568	4 883	5 176
60	-	3 108	3 571	4 010	4 424	4 815	5 182	5 527
65	-	-	-	4 116	4 589	5 037	5 461	5 863
70	-	-	-	-	-	5 220	5 707	6 170
75	-	-	-	-	-	-	5 906	6 435

### Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	6.72	6.98	7.25	7.52	7.75	7.95	8.10	8.17
40	6.82	7.11	7.40	7.70	7.97	8.21	8.39	8.51
45	6.90	7.22	7.55	7.89	8.20	8.49	8.72	8.89
50	6.94	7.31	7.69	8.07	8.44	8.78	9.08	9.32
55	6.94	7.36	7.80	8.25	8.68	9.09	9.46	9.77
60	-	7.37	7.88	8.39	8.90	9.39	9.84	10.24
65	-	-	-	8.51	9.10	9.68	10.22	10.72
70	-	-	-	-	-	9.94	10.59	11.19
75	-	-	-	-	-	-	10.92	11.64

# Model: MTZ81

## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	122.35	161.82	208.60	263.65	327.93	402.41	488.05	585.81
40	117.22	156.51	202.99	257.63	321.39	395.24	480.13	577.04
45	111.59	150.62	196.74	250.91	314.09	387.24	471.32	567.31
50	105.42	144.14	189.83	243.46	305.99	378.37	461.59	556.58
55	98.70	137.04	182.24	235.26	297.07	368.63	450.90	544.85
60	-	129.28	173.93	226.28	287.31	357.98	439.24	532.07
65	-	-	-	216.50	276.68	346.39	426.58	518.23
70	-	-	-	-	-	333.83	412.89	503.29
75	-	-	-	-	-	-	398.15	487.24

### C.O.P. [W/W]

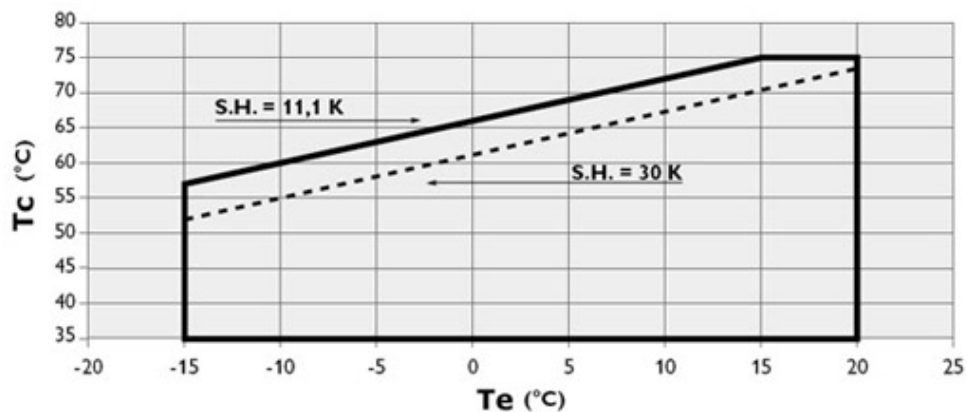
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	2.02	2.46	2.98	3.59	4.30	5.12	6.06	7.14
40	1.80	2.20	2.66	3.20	3.81	4.52	5.34	6.27
45	1.59	1.95	2.35	2.82	3.35	3.96	4.66	5.46
50	1.40	1.71	2.06	2.46	2.92	3.45	4.05	4.72
55	1.22	1.49	1.80	2.15	2.54	2.99	3.50	4.08
60	-	1.30	1.57	1.87	2.20	2.59	3.02	3.52
65	-	-	-	1.62	1.91	2.24	2.61	3.03
70	-	-	-	-	-	1.93	2.24	2.60
75	-	-	-	-	-	-	1.93	2.23

Operating conditions: suction superheat: 10 K, subcooling: 0 K

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

### Application range



# Model: MTZ81

## Capacity

R404A/R507

### Cooling capacity [W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	4 896	6 633	8 753	11 303	14 335	17 897	22 039	26 809	32 258
35	4 294	5 905	7 863	10 219	13 021	16 318	20 161	24 597	29 678
40	3 722	5 206	7 003	9 162	11 733	14 765	18 307	22 410	27 121
45	3 175	4 531	6 165	8 127	10 466	13 232	16 473	20 240	24 581
50	2 646	3 873	5 344	7 108	9 215	11 713	14 653	18 083	22 053
55	-	3 227	4 534	6 099	7 972	10 202	12 839	15 932	19 530
60	-	2 587	3 728	5 094	6 732	8 693	11 027	13 782	17 007

### Power input [W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	3 159	3 667	4 129	4 552	4 941	5 301	5 637	5 953	6 257
35	3 181	3 745	4 261	4 733	5 167	5 568	5 941	6 291	6 624
40	3 179	3 806	4 380	4 906	5 391	5 838	6 254	6 643	7 010
45	3 151	3 845	4 483	5 069	5 609	6 108	6 572	7 005	7 413
50	3 093	3 859	4 566	5 217	5 819	6 375	6 892	7 375	7 828
55	-	3 846	4 627	5 348	6 016	6 635	7 211	7 748	8 252
60	-	3 800	4 661	5 458	6 198	6 885	7 524	8 121	8 681

### Current [A]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	7.26	7.77	8.29	8.82	9.33	9.81	10.23	10.60	10.88
35	7.25	7.83	8.42	9.02	9.60	10.14	10.64	11.07	11.41
40	7.24	7.89	8.57	9.24	9.89	10.51	11.08	11.58	12.00
45	7.21	7.95	8.71	9.46	10.20	10.90	11.54	12.12	12.62
50	7.16	7.99	8.83	9.68	10.50	11.28	12.02	12.68	13.26
55	-	7.99	8.93	9.86	10.78	11.66	12.48	13.24	13.90
60	-	7.93	8.97	10.01	11.02	12.00	12.92	13.77	14.54

# Model: MTZ81

## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	153.91	204.04	262.50	330.37	408.71	498.63	601.18	717.46	848.55
35	145.43	194.94	252.51	319.21	396.12	484.32	584.90	698.92	827.48
40	136.74	185.69	242.43	308.02	383.56	470.11	568.76	680.59	806.68
45	127.79	176.24	232.20	296.75	370.97	455.93	552.72	662.41	786.09
50	118.51	166.52	221.77	285.33	358.29	441.72	536.70	644.32	765.65
55	-	156.48	211.07	273.71	345.47	427.42	520.66	626.26	745.29
60	-	146.05	200.05	261.82	332.43	412.97	504.53	608.16	724.97

### C.O.P. [W/W]

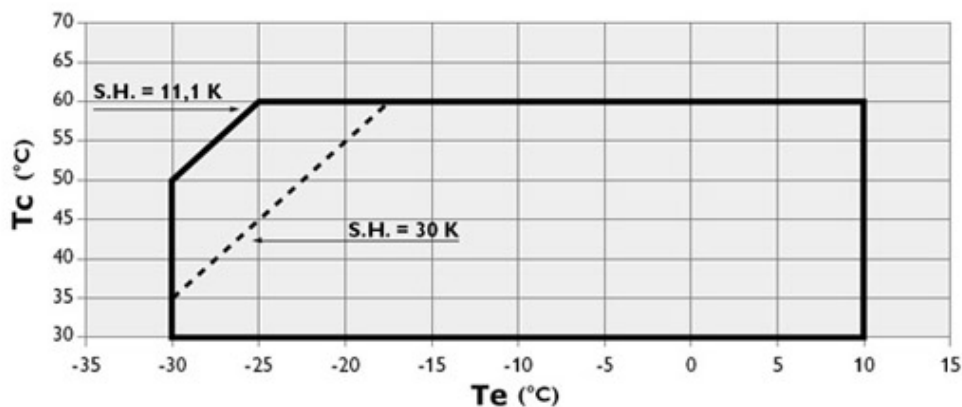
$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	1.55	1.81	2.12	2.48	2.90	3.38	3.91	4.50	5.16
35	1.35	1.58	1.85	2.16	2.52	2.93	3.39	3.91	4.48
40	1.17	1.37	1.60	1.87	2.18	2.53	2.93	3.37	3.87
45	1.01	1.18	1.38	1.60	1.87	2.17	2.51	2.89	3.32
50	0.86	1.00	1.17	1.36	1.58	1.84	2.13	2.45	2.82
55	-	0.84	0.98	1.14	1.33	1.54	1.78	2.06	2.37
60	-	0.68	0.80	0.93	1.09	1.26	1.47	1.70	1.96

Operating conditions: suction superheat: 10 K, subcooling: 0 K

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

### Application range



# Model: MTZ81

## Capacity

R407C

### Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	8 130	10 768	13 905	17 601	21 917	26 914	32 652
40	7 407	9 912	12 880	16 369	20 442	25 158	30 578
45	6 669	9 036	11 827	15 104	18 926	23 354	28 449
50	-	8 147	10 755	13 811	17 376	21 510	26 273
55	-	-	9 671	12 500	15 800	19 633	24 058
60	-	-	-	11 177	14 206	17 731	21 810
65	-	-	-	9 850	12 602	15 811	19 539

### Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	3 837	4 234	4 566	4 839	5 061	5 239	5 378
40	3 980	4 453	4 856	5 196	5 481	5 717	5 910
45	4 080	4 637	5 119	5 535	5 891	6 193	6 448
50	-	4 782	5 353	5 852	6 286	6 663	6 989
55	-	-	5 552	6 143	6 665	7 125	7 529
60	-	-	-	6 405	7 022	7 573	8 065
65	-	-	-	6 634	7 355	8 006	8 592

### Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	8.21	8.67	9.06	9.39	9.67	9.90	10.11
40	8.38	8.94	9.43	9.84	10.20	10.51	10.78
45	8.50	9.18	9.77	10.29	10.75	11.15	11.52
50	-	9.37	10.09	10.73	11.31	11.83	12.30
55	-	-	10.36	11.15	11.86	12.51	13.10
60	-	-	-	11.51	12.38	13.18	13.92
65	-	-	-	11.81	12.85	13.82	14.73

# Model: MTZ81

## Capacity

### Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	176.41	229.88	291.97	363.70	446.07	540.09	646.78
40	168.99	222.24	283.84	354.82	436.18	528.94	634.10
45	160.81	213.68	274.65	344.73	424.94	516.28	619.77
50	-	204.23	264.42	333.46	412.37	502.15	603.82
55	-	-	253.20	321.05	398.51	486.59	586.29
60	-	-	-	307.53	383.40	469.63	567.22
65	-	-	-	292.93	367.07	451.30	546.63

### C.O.P. [W/W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	2.12	2.54	3.05	3.64	4.33	5.14	6.07
40	1.86	2.23	2.65	3.15	3.73	4.40	5.17
45	1.63	1.95	2.31	2.73	3.21	3.77	4.41
50	-	1.70	2.01	2.36	2.76	3.23	3.76
55	-	-	1.74	2.03	2.37	2.76	3.20
60	-	-	-	1.75	2.02	2.34	2.70
65	-	-	-	1.48	1.71	1.98	2.27

Operating conditions: suction superheat: 10 K, subcooling: 0 K

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

### Application range

