Correction Elements that Influence the Capacity

Pressure Drop in High-Pressure Side Liquid Pipe

Pressure drop on high-pressure side deteriorates refrigerating capacity.Pressure drop generated between the condenser and the expansion valve leads to the generation of flush gas, and deteriorates the capacity of the expansion valve.
In general, therefore, it is necessary to consider supercooling at about 1 to 3℃.

Pressure Drop Correction Factor of Pipes on Low-Pressure Side

Pressure drop in the distributor and the evaporator cause the imbalance in temperature and deterioration of capacity, and increases the static superheat at the internal equalizer type expansion valve.
The correction factors shown here are for cases in which Pressure drop changes occur in the distributor and evaporator.

R134a

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.987	0.973	0.960	0.946	0.932	0.917	0.903	0.888	0.873	0.858
-50	1.000	0.987	0.973	0.959	0.945	0.931	0.916	0.901	0.886	0.871	0.856
-40	1.000	0.986	0.972	0.958	0.944	0.929	0.914	0.899	0.884	0.868	0.852
-30	1.000	0.986	0.971	0.956	0.941	0.926	0.911	0.895	0.879	0.863	0.846
-20	1.000	0.985	0.969	0.954	0.938	0.922	0.905	0.888	0.871	0.854	0.836
-10	1.000	0.983	0.967	0.950	0.932	0.914	0.896	0.878	0.859	0.840	0.820
-5	1.000	0.982	0.965	0.946	0.928	0.909	0.890	0.870	0.850	0.829	0.808
0	1.000	0.981	0.962	0.942	0.922	0.902	0.881	0.860	0.838	0.815	0.792
5	1.000	0.979	0.958	0.937	0.915	0.892	0.869	0.845	0.821	0.796	0.770
10	1.000	0.977	0.953	0.929	0.904	0.879	0.852	0.825	0.797	0.768	0.738

R410A

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.994	0.989	0.983	0.977	0.972	0.966	0.960	0.954	0.949	0.943
-50	1.000	0.994	0.989	0.983	0.977	0.971	0.965	0.959	0.953	0.948	0.942
-40	1.000	0.994	0.988	0.982	0.976	0.970	0.964	0.958	0.952	0.946	0.940
-30	1.000	0.994	0.988	0.981	0.975	0.969	0.963	0.956	0.950	0.943	0.937
-20	1.000	0.993	0.987	0.980	0.973	0.967	0.960	0.953	0.946	0.939	0.932
-10	1.000	0.993	0.986	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-5	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.920
0	1.000	0.992	0.983	0.975	0.966	0.958	0.949	0.940	0.932	0.923	0.914
5	1.000	0.991	0.982	0.972	0.963	0.954	0.944	0.934	0.925	0.915	0.905
10	1.000	0.990	0.979	0.969	0.958	0.948	0.937	0.926	0.915	0.904	0.892

R404A

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.985	0.978	0.970	0.962	0.955	0.947	0.939	0.931	0.923
-50	1.000	0.992	0.985	0.977	0.969	0.962	0.954	0.946	0.938	0.930	0.922
-40	1.000	0.992	0.984	0.976	0.968	0.960	0.952	0.944	0.936	0.928	0.919
-30	1.000	0.992	0.984	0.975	0.967	0.959	0.950	0.942	0.933	0.924	0.915
-20	1.000	0.991	0.983	0.974	0.965	0.956	0.947	0.937	0.928	0.919	0.909
-10	1.000	0.990	0.981	0.971	0.961	0.951	0.941	0.931	0.921	0.910	0.900
-5	1.000	0.990	0.980	0.969	0.959	0.948	0.937	0.926	0.915	0.904	0.893
0	1.000	0.989	0.978	0.967	0.955	0.944	0.932	0.920	0.908	0.896	0.884
5	1.000	0.988	0.976	0.963	0.951	0.938	0.925	0.912	0.899	0.885	0.872
10	1.000	0.986	0.973	0.959	0.945	0.930	0.916	0.901	0.886	0.870	0.855

R448A

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.986	0.978	0.971	0.964	0.956	0.949	0.941	0.934	0.926
-50	1.000	0.993	0.985	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-40	1.000	0.993	0.985	0.978	0.970	0.962	0.955	0.947	0.939	0.931	0.923
-30	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.928	0.920
-20	1.000	0.992	0.984	0.975	0.967	0.959	0.950	0.942	0.933	0.924	0.916
-10	1.000	0.991	0.982	0.973	0.964	0.955	0.946	0.937	0.927	0.918	0.908
-5	1.000	0.991	0.981	0.972	0.962	0.953	0.943	0.933	0.923	0.913	0.903
0	1.000	0.990	0.980	0.970	0.960	0.950	0.939	0.929	0.918	0.908	0.897
5	1.000	0.989	0.979	0.968	0.957	0.946	0.934	0.923	0.911	0.900	0.888
10	1.000	0.988	0.976	0.965	0.952	0.940	0.928	0.915	0.902	0.889	0.876

R407C

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.921
-50	1.000	0.992	0.984	0.977	0.969	0.961	0.952	0.944	0.936	0.928	0.919
-40	1.000	0.992	0.984	0.976	0.968	0.960	0.951	0.943	0.935	0.926	0.917
-30	1.000	0.992	0.983	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.914
-20	1.000	0.991	0.983	0.974	0.965	0.956	0.947	0.938	0.929	0.919	0.910
-10	1.000	0.991	0.981	0.972	0.962	0.952	0.943	0.933	0.923	0.913	0.902
-5	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.929	0.919	0.908	0.897
0	1.000	0.990	0.979	0.968	0.958	0.947	0.936	0.925	0.913	0.902	0.890
5	1.000	0.989	0.977	0.966	0.954	0.942	0.931	0.918	0.906	0.894	0.881
10	1.000	0.988	0.975	0.963	0.950	0.937	0.924	0.910	0.897	0.883	0.869

R449A

	Pressure Drop (MPa)										
Evaporating Temp. (℃)	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.986	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-50	1.000	0.993	0.985	0.978	0.970	0.963	0.955	0.948	0.940	0.932	0.924
-40	1.000	0.992	0.985	0.977	0.970	0.962	0.954	0.946	0.938	0.930	0.922
-30	1.000	0.992	0.984	0.976	0.969	0.960	0.952	0.944	0.936	0.928	0.919
-20	1.000	0.992	0.984	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.915
-10	1.000	0.991	0.982	0.973	0.964	0.955	0.945	0.936	0.927	0.917	0.907
-5	1.000	0.991	0.981	0.972	0.962	0.952	0.942	0.933	0.922	0.912	0.902
0	1.000	0.990	0.980	0.970	0.960	0.949	0.939	0.928	0.917	0.906	0.895
5	1.000	0.989	0.978	0.967	0.956	0.945	0.934	0.922	0.910	0.899	0.887
10	1.000	0.988	0.976	0.964	0.952	0.939	0.927	0.914	0.901	0.888	0.875

Correction Factor for Supercooling

Correction factors shown here indicate changes in capacity depending on the degree of supercooling caused by low-stage side high-pressure solution refrigerant in the two-stage compression-type refrigerating device, and heat exchange attachment device, etc. For devices with a significant degree of supercooling, the figure shown in the capacity table multiplied by the correction factor shown in the table below is the capacity of the expansion valve.

R134a

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.10	1.20	1.30	-	-	-	-
10	1.00	1.11	1.22	1.33	1.45	-	-	-
20	1.00	1.12	1.25	1.37	1.50	1.62	-	-
30	1.00	1.14	1.28	1.42	1.56	1.70	1.85	-
38	1.00	1.15	1.31	1.47	1.63	1.79	1.95	2.11
40	1.00	1.16	1.32	1.48	1.65	1.81	1.98	2.14
50	1.00	1.19	1.38	1.57	1.76	1.96	2.15	2.35
60	1.00	1.23	1.46	1.70	1.93	2.17	2.41	2.65

R404A

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.13	1.26	1.39	-	-	-	-
10	1.00	1.15	1.29	1.44	1.59	-	-	-
20	1.00	1.17	1.34	1.51	1.69	1.86	-	-
30	1.00	1.20	1.41	1.62	1.82	2.03	2.24	-
38	1.00	1.24	1.49	1.73	1.98	2.23	2.48	2.73
40	1.00	1.26	1.51	1.77	2.03	2.29	2.55	2.82
50	1.00	1.35	1.70	2.04	2.39	2.74	3.09	3.45
60	1.00	1.56	2.11	2.65	3.19	3.74	4.28	4.84

R407C

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.10	1.21	1.31	-	-	-	-
10	1.00	1.11	1.23	1.34	1.46	-	-	-
20	1.00	1.13	1.26	1.38	1.51	1.65	-	-
30	1.00	1.15	1.29	1.44	1.59	1.73	1.88	-
38	1.00	1.16	1.33	1.49	1.66	1.83	2.00	2.17
40	1.00	1.17	1.34	1.51	1.68	1.86	2.03	2.21
50	1.00	1.21	1.41	1.62	1.82	2.03	2.24	2.45
60	1.00	1.26	1.53	1.79	2.05	2.31	2.57	2.83

R410A

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.11	1.21	1.32	-	-	-	-
10	1.00	1.12	1.24	1.36	1.48	-	-	-
20	1.00	1.14	1.27	1.41	1.54	1.68	-	-
30	1.00	1.16	1.32	1.47	1.63	1.79	1.94	-
38	1.00	1.18	1.36	1.54	1.72	1.90	2.08	2.27
40	1.00	1.19	1.38	1.57	1.75	1.94	2.13	2.32
50	1.00	1.25	1.48	1.72	1.95	2.18	2.42	2.65
60	1.00	1.36	1.70	2.02	2.34	2.66	2.98	3.29

R448A

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.11	1.22	1.33	-	-	-	-
10	1.00	1.12	1.24	1.36	1.49	-	-	-
20	1.00	1.14	1.27	1.41	1.55	1.69	-	-
30	1.00	1.16	1.32	1.47	1.63	1.79	1.96	-
38	1.00	1.19	1.37	1.56	1.75	1.94	2.13	2.32
40	1.00	1.23	1.46	1.69	1.92	2.15	2.39	2.62
50	1.00	1.31	1.61	1.91	2.21	2.52	2.82	3.12
60	1.00	1.48	1.93	2.38	2.83	3.27	3.72	4.17

R449A

	Sub-cooling ⊿T							
Condensing Temp (℃)	0	10	20	30	40	50	60	70
0	1.00	1.11	1.22	1.33	-	-	-	-
10	1.00	1.12	1.24	1.37	1.49	-	-	-
20	1.00	1.14	1.28	1.41	1.55	1.70	-	-
30	1.00	1.16	1.32	1.48	1.64	1.80	1.97	-
38	1.00	1.19	1.38	1.57	1.76	1.95	2.14	2.34
40	1.00	1.23	1.47	1.70	1.94	2.17	2.41	2.65
50	1.00	1.32	1.63	1.93	2.24	2.55	2.86	3.17
60	1.00	1.50	1.97	2.44	2.90	3.36	3.82	4.29

AEX Capacity table

R23

Extreme low temp.<-100～-70℃> Superheat change 5℃

Catalog No.		evaporating temp. (℃)	Capacity (U.S.R.T.) {kW}			
			Condensing temp. (℃)			
Type	Model		-20	-30	-40	-50
AEX-	2333BCZ	-70	0.32 {1.13}	0.30 {1.05}	0.26 {0.93}	0.22 {0.77}
		-75	0.26 {0.92}	0.24 {0.86}	0.22 {0.78}	0.18 {0.65}
		-80	0.22 {0.79}	0.22 {0.76}	0.20 {0.69}	0.17 {0.59}
		-85	0.20 {0.69}	0.18 {0.65}	0.17 {0.59}	0.15 {0.52}
		-90	0.16 {0.56}	0.15 {0.53}	0.14 {0.49}	0.12 {0.43}
		-95	0.14 {0.49}	0.13 {0.45}	0.12 {0.42}	0.11 {0.37}
		-100	0.12 {0.41}	0.11 {0.38}	0.10 {0.35}	0.09 {0.31}
	2335BCZ 2345BCZ	-70	0.64 {2.24}	0.59 {2.09}	0.53 {1.86}	0.43 {1.52}
		-75	0.52 {1.83}	0.49 {1.72}	0.44 {1.55}	0.37 {1.30}
		-80	0.45 {1.58}	0.43 {1.50}	0.39 {1.36}	0.33 {1.17}
		-85	0.39 {1.37}	0.37 {1.29}	0.34 {1.19}	0.29 {1.03}
		-90	0.32 {1.12}	0.30 {1.06}	0.28 {0.97}	0.24 {0.85}
		-95	0.28 {0.97}	0.26 {0.91}	0.24 {0.84}	0.21 {0.73}
		-100	0.23 {0.81}	0.22 {0.76}	0.20 {0.70}	0.18 {0.62}
	2348BCZ	-70	0.94 {3.30}	0.88 {3.09}	0.78 {2.74}	0.64 {2.26}
		-75	0.79 {2.79}	0.75 {2.62}	0.67 {2.35}	0.57 {1.99}
		-80	0.70 {2.45}	0.66 {2.31}	0.60 {2.10}	0.53 {1.85}
		-85	0.60 {2.10}	0.57 {1.99}	0.51 {1.81}	0.45 {1.58}
		-90	0.50 {1.76}	0.47 {1.66}	0.43 {1.51}	0.38 {1.34}
		-95	0.43 {1.51}	0.41 {1.43}	0.37 {1.30}	0.33 {1.15}
		-100	0.35 {1.22}	0.32 {1.14}	0.30 {1.05}	0.26 {0.92}
	2341BCZ	-70	1.40 {4.93}	1.31 {4.62}	1.16 {4.09}	0.96 {3.36}
		-75	1.19 {4.19}	1.12 {3.93}	1.00 {3.53}	0.85 {2.99}
		-80	1.04 {3.66}	0.98 {3.45}	0.89 {3.13}	0.77 {2.70}
		-85	0.87 {3.06}	0.82 {2.90}	0.75 {2.64}	0.65 {2.30}
		-90	0.73 {2.55}	0.69 {2.41}	0.63 {2.20}	0.55 {1.93}
		-95	0.63 {2.21}	0.59 {2.09}	0.55 {1.92}	0.48 {1.69}
		-100	0.53 {1.87}	0.50 {1.76}	0.46 {1.60}	0.40 {1.41}
	2342BCZ	-70	2.42 {8.51}	2.27 {7.98}	2.01 {7.07}	1.65 {5.80}
		-75	2.06 {7.23}	1.93 {6.79}	1.73 {6.10}	1.47 {5.16}
		-80	1.78 {6.27}	1.68 {5.92}	1.53 {5.37}	1.32 {4.63}
		-85	1.56 {5.50}	1.48 {5.21}	1.35 {4.76}	1.18 {4.15}
		-90	1.28 {4.51}	1.21 {4.27}	1.11 {3.91}	0.98 {3.43}
		-95	1.09 {3.83}	1.03 {3.62}	0.94 {3.30}	0.83 {2.92}
		-100	0.90 {3.15}	0.84 {2.97}	0.77 {2.71}	0.68 {2.38}
	2344BCZ 3454BCZ 4564BCZ	-70	4.10 {14.4}	3.87 {13.6}	3.41 {12.0}	2.80 {9.86}
		-75	3.50 {12.3}	3.27 {11.5}	2.96 {10.4}	2.49 {8.77}
		-80	3.04 {10.7}	2.87 {10.1}	2.61 {9.16}	2.25 {7.91}
		-85	2.60 {9.13}	2.46 {8.64}	2.24 {7.87}	1.95 {6.87}
		-90	2.18 {7.65}	2.06 {7.24}	1.89 {6.63}	1.66 {5.83}
		-95	1.85 {6.50}	1.75 {6.14}	1.60 {5.62}	1.41 {4.95}
		-100	1.54 {5.43}	1.46 {5.12}	1.33 {4.66}	1.17 {4.10}
	4566BCZ	-70	5.66 {19.9}	5.29 {18.6}	4.69 {16.5}	3.87 {13.6}
		-75	4.81 {16.9}	4.49 {15.8}	4.04 {14.2}	3.44 {12.1}
		-80	4.18 {14.7}	3.92 {13.8}	3.58 {12.6}	3.07 {10.8}
		-85	3.58 {12.6}	3.38 {11.9}	3.07 {10.8}	2.69 {9.45}
		-90	2.99 {10.5}	2.84 {9.99}	2.60 {9.13}	2.28 {8.02}
		-95	2.53 {8.90}	2.39 {8.41}	2.19 {7.69}	1.93 {6.78}
		-100	2.06 {7.23}	1.93 {6.80}	1.77 {6.21}	1.56 {5.47}
	4568BCZ	-70	7.54 {26.5}	7.05 {24.8}	6.26 {22.0}	5.12 {18.0}
		-75	6.37 {22.4}	5.97 {21.0}	5.40 {19.0}	4.55 {16.0}
		-80	5.60 {19.7}	5.26 {18.5}	4.75 {16.7}	4.10 {14.4}
		-85	4.75 {16.7}	4.49 {15.8}	4.10 {14.4}	3.58 {12.6}
		-90	4.01 {14.1}	3.78 {13.3}	3.44 {12.1}	3.04 {10.7}
		-95	3.33 {11.7}	3.13 {11.0}	2.87 {10.1}	2.53 {8.91}
		-100	2.82 {9.90}	2.65 {9.31}	2.41 {8.49}	2.13 {7.48}

R134a

Standard＜-30～10℃＞ Superheat change 5℃

Catalog No.		evaporating temp. (℃)	Capacity (U.S.R.T.) {kW}			
			Condensing temp. (℃)			
Type	Model		25	38	50	60
AEX-	2333BM	10	0.35 {1.22}	0.44 {1.54}	0.48 {1.68}	0.48 {1.68}
		0	0.34 {1.19}	0.39 {1.36}	0.40 {1.42}	0.40 {1.39}
		-5	0.32 {1.14}	0.36 {1.27}	0.37 {1.30}	0.36 {1.27}
		-10	0.31 {1.08}	0.34 {1.18}	0.34 {1.21}	0.33 {1.16}
		-20	0.25 {0.89}	0.27 {0.94}	0.27 {0.94}	0.26 {0.90}
		-30	0.17 {0.61}	0.18 {0.64}	0.18 {0.63}	0.17 {0.60}
	2335BM 2345BM	10	0.69 {2.43}	0.88 {3.08}	0.95 {3.35}	0.95 {3.35}
		0	0.67 {2.37}	0.77 {2.72}	0.80 {2.83}	0.79 {2.78}
		-5	0.65 {2.28}	0.72 {2.53}	0.74 {2.60}	0.72 {2.53}
		-10	0.61 {2.16}	0.67 {2.36}	0.69 {2.41}	0.66 {2.31}
		-20	0.50 {1.77}	0.53 {1.88}	0.53 {1.88}	0.51 {1.79}
		-30	0.35 {1.22}	0.36 {1.27}	0.36 {1.26}	0.34 {1.20}
	2348BM	10	1.04 {3.66}	1.32 {4.64}	1.43 {5.03}	1.44 {5.05}
		0	1.02 {3.60}	1.17 {4.13}	1.22 {4.30}	1.20 {4.22}
		-5	0.99 {3.47}	1.10 {3.87}	1.13 {3.98}	1.10 {3.87}
		-10	0.93 {3.28}	1.02 {3.58}	1.04 {3.64}	1.00 {3.52}
		-20	0.76 {2.66}	0.81 {2.84}	0.81 {2.84}	0.77 {2.72}
		-30	0.61 {2.15}	0.64 {2.26}	0.63 {2.23}	0.60 {2.12}
	2341BM	10	1.49 {5.23}	1.89 {6.63}	2.04 {7.19}	2.05 {7.21}
		0	1.42 {5.00}	1.62 {5.71}	1.69 {5.95}	1.66 {5.85}
		-5	1.35 {4.73}	1.50 {5.28}	1.54 {5.41}	1.50 {5.28}
		-10	1.25 {4.41}	1.37 {4.81}	1.39 {4.90}	1.35 {4.73}
		-20	1.04 {3.65}	1.10 {3.88}	1.10 {3.88}	1.06 {3.72}
		-30	0.70 {2.45}	0.73 {2.57}	0.73 {2.55}	0.69 {2.42}
	2342BM	10	2.54 {8.93}	3.21 {11.3}	3.50 {12.3}	3.50 {12.3}
		0	2.46 {8.65}	2.82 {9.90}	2.93 {10.3}	2.87 {10.1}
		-5	2.33 {8.21}	2.60 {9.14}	2.67 {9.40}	2.60 {9.15}
		-10	2.18 {7.66}	2.38 {8.37}	2.42 {8.51}	2.34 {8.24}
		-20	1.76 {6.20}	1.87 {6.59}	1.87 {6.59}	1.79 {6.31}
		-30	1.20 {4.21}	1.25 {4.41}	1.24 {4.37}	1.18 {4.15}
	2344BM 3454BM 4564BM	10	4.27 {15.0}	5.40 {19.0}	5.86 {20.6}	5.86 {20.6}
		0	4.10 {14.4}	4.69 {16.5}	4.89 {17.2}	4.86 {17.1}
		-5	3.98 {14.0}	4.41 {15.5}	4.52 {15.9}	4.41 {15.5}
		-10	3.70 {13.0}	4.04 {14.2}	4.10 {14.4}	4.01 {14.1}
		-20	2.99 {10.5}	3.19 {11.2}	3.19 {11.2}	3.04 {10.7}
		-30	2.01 {7.08}	2.11 {7.42}	2.09 {7.35}	1.99 {6.99}
	4566BM	10	6.97 {24.5}	8.87 {31.2}	9.58 {33.7}	9.61 {33.8}
		0	6.85 {24.1}	7.85 {27.6}	8.16 {28.7}	8.05 {28.3}
		-5	6.48 {22.8}	7.20 {25.3}	7.37 {25.9}	7.20 {25.3}
		-10	5.97 {21.0}	6.57 {23.1}	6.65 {23.4}	6.46 {22.7}
		-20	5.23 {18.4}	5.60 {19.7}	5.60 {19.7}	5.32 {18.7}
		-30	3.27 {11.5}	3.44 {12.1}	3.41 {12.0}	3.24 {11.4}
	4568BM	10	8.76 {30.8}	10.5 {36.9}	11.4 {40.0}	11.4 {40.1}
		0	8.76 {30.8}	10.0 {35.3}	10.4 {36.7}	10.3 {36.2}
		-5	8.59 {30.2}	9.58 {33.7}	9.87 {34.7}	9.58 {33.7}
		-10	8.36 {29.4}	9.13 {32.1}	9.30 {32.7}	8.96 {31.5}
		-20	7.14 {25.1}	7.59 {26.7}	7.59 {26.7}	7.28 {25.6}
		-30	5.35 {18.8}	5.63 {19.8}	5.60 {19.7}	5.29 {18.6}

R404A

Standard <−40～10℃> Superheat change 5℃

Catalog No.		evaporating temp. (℃)	Capacity (U.S.R.T.) {kW}			
			Condensing temp. (℃)			
Type	Model		25	38	50	60
AEX-	2333BU	10	0.37 {1.31}	0.44 {1.54}	0.41 {1.43}	0.32 {1.14}
		0	0.37 {1.30}	0.38 {1.34}	0.34 {1.19}	0.26 {0.91}
		-5	0.34 {1.20}	0.34 {1.20}	0.31 {1.10}	0.22 {0.79}
		-10	0.31 {1.09}	0.30 {1.06}	0.26 {0.91}	0.19 {0.67}
		-20	0.24 {0.86}	0.23 {0.80}	0.19 {0.66}	0.13 {0.47}
		-30	0.18 {0.62}	0.16 {0.57}	-	-
		-40	0.12 {0.42}	0.11 {0.37}	-	-
	2335BU 2345BU	10	0.74 {2.61}	0.87 {3.07}	0.81 {2.84}	0.65 {2.27}
		0	0.74 {2.60}	0.76 {2.67}	0.67 {2.37}	0.51 {1.80}
		-5	0.68 {2.39}	0.68 {2.39}	0.62 {2.18}	0.45 {1.57}
		-10	0.62 {2.17}	0.60 {2.11}	0.51 {1.80}	0.38 {1.33}
		-20	0.48 {1.70}	0.46 {1.60}	0.37 {1.30}	0.26 {0.93}
		-30	0.35 {1.23}	0.32 {1.13}	-	-
		-40	0.24 {0.84}	0.21 {0.75}	-	-
	2348BU	10	1.17 {4.11}	1.37 {4.80}	1.26 {4.44}	1.00 {3.53}
		0	1.14 {4.02}	1.18 {4.16}	1.04 {3.65}	0.80 {2.81}
		-5	1.04 {3.65}	1.05 {3.69}	0.91 {3.19}	0.69 {2.41}
		-10	0.94 {3.29}	0.92 {3.22}	0.78 {2.74}	0.57 {2.02}
		-20	0.76 {2.67}	0.71 {2.50}	0.59 {2.08}	0.42 {1.48}
		-30	0.57 {2.01}	0.53 {1.85}	-	-
		-40	0.39 {1.37}	0.30 {1.07}	-	-
	2341BU	10	1.53 {5.38}	1.79 {6.29}	1.66 {5.82}	1.32 {4.64}
		0	1.48 {5.20}	1.54 {5.41}	1.35 {4.75}	1.04 {3.65}
		-5	1.38 {4.86}	1.40 {4.92}	1.21 {4.25}	0.91 {3.21}
		-10	1.29 {4.53}	1.26 {4.42}	1.07 {3.76}	0.79 {2.77}
		-20	0.98 {3.45}	0.92 {3.24}	0.76 {2.68}	0.54 {1.90}
		-30	0.70 {2.45}	0.63 {2.22}	-	-
		-40	0.50 {1.77}	0.46 {1.60}	-	-
	2342BU	10	2.76 {9.70}	3.24 {11.4}	2.99 {10.5}	2.38 {8.38}
		0	2.69 {9.46}	2.79 {9.81}	2.46 {8.66}	1.89 {6.63}
		-5	2.47 {8.70}	2.50 {8.79}	2.17 {7.62}	1.63 {5.74}
		-10	2.26 {7.94}	2.22 {7.79}	1.88 {6.61}	1.38 {4.87}
		-20	1.78 {6.27}	1.68 {5.91}	1.38 {4.86}	0.98 {3.46}
		-30	1.32 {4.64}	1.21 {4.27}	-	-
		-40	0.90 {3.16}	0.80 {2.83}	-	-
	2344BU 3454BU 4564BU	10	4.55 {16.0}	5.35 {18.8}	4.95 {17.4}	3.92 {13.8}
		0	4.46 {15.7}	4.64 {16.3}	4.10 {14.4}	3.13 {11.0}
		-5	4.12 {14.5}	4.21 {14.8}	3.61 {12.7}	2.72 {9.55}
		-10	3.78 {13.3}	3.70 {13.0}	3.13 {11.0}	2.31 {8.11}
		-20	3.01 {10.6}	2.82 {9.93}	2.33 {8.19}	1.66 {5.83}
		-30	2.18 {7.65}	1.99 {7.01}	-	-
		-40	1.51 {5.32}	1.36 {4.77}	-	-
	4566BU	10	6.65 {23.4}	7.76 {27.3}	7.22 {25.4}	5.74 {20.2}
		0	6.34 {22.3}	6.57 {23.1}	5.80 {20.4}	4.46 {15.7}
		-5	5.94 {20.9}	5.97 {21.0}	5.18 {18.2}	3.90 {13.7}
		-10	5.52 {19.4}	5.37 {18.9}	4.55 {16.0}	3.38 {11.9}
		-20	4.32 {15.2}	5.20 {18.3}	3.36 {11.8}	2.37 {8.35}
		-30	3.21 {11.3}	2.90 {10.2}	-	-
		-40	2.28 {8.01}	2.05 {7.20}	-	-
	4568BU	10	9.10 {32.0}	10.6 {37.4}	9.87 {34.7}	7.85 {27.6}
		0	8.79 {30.9}	9.13 {32.1}	8.05 {28.3}	6.17 {21.7}
		-5	8.13 {28.6}	8.39 {29.5}	7.14 {25.1}	5.40 {19.0}
		-10	7.51 {26.4}	7.34 {25.8}	6.23 {21.9}	4.64 {16.3}
		-20	5.83 {20.5}	5.46 {19.2}	4.49 {15.8}	3.19 {11.2}
		-30	4.41 {15.5}	4.01 {14.1}	-	-
		-40	3.01 {10.6}	2.72 {9.55}	-	-

R404A

Extreme low temp. <-70～-20℃> Superheat change 5℃

Catalog No.		evaporating temp. (℃)	Capacity (U.S.R.T.) {kW}											
			Condensing pressure (MPa abs)											
			1.10 (Equivalent to 20℃)			1.43 (Equivalent to 30℃)			1.74 (Equivalent to 38℃)			2.31 (Equivalent to 50℃)		
			Condensate temp. (℃)											
Type	Model		-20	-10	0	-20	-10	0	-20	-10	0	-20	-10	0
			Sub-cooling (℃)											
			40	30	20	50	40	30	58	48	38	70	60	50
AEX-	2333BUZ	-20	0.62 {2.19}	0.56 {1.98}	0.51 {1.78}	0.74 {2.61}	0.67 {2.36}	0.60 {2.11}	0.84 {2.95}	0.76 {2.67}	0.68 {2.39}	0.99 {3.48}	0.90 {3.15}	0.80 {2.82}
		-30	0.49 {1.72}	0.44 {1.55}	0.40 {1.39}	0.57 {2.01}	0.52 {1.82}	0.46 {1.63}	0.64 {2.26}	0.58 {2.04}	0.52 {1.83}	0.75 {2.64}	0.68 {2.39}	0.61 {2.13}
		-40	0.37 {1.30}	0.34 {1.18}	0.30 {1.05}	0.43 {1.51}	0.39 {1.36}	0.35 {1.22}	0.48 {1.68}	0.43 {1.52}	0.39 {1.36}	0.55 {1.95}	0.50 {1.77}	0.45 {1.58}
		-50	0.27 {0.96}	0.25 {0.87}	0.22 {0.78}	0.31 {1.10}	0.28 {1.00}	0.25 {0.89}	0.35 {1.23}	0.32 {1.11}	0.28 {1.00}	0.40 {1.42}	0.37 {1.29}	0.33 {1.15}
		-60	0.20 {0.70}	0.18 {0.64}	0.16 {0.57}	0.23 {0.80}	0.21 {0.73}	0.19 {0.66}	0.25 {0.89}	0.23 {0.81}	0.20 {0.72}	0.29 {1.03}	0.27 {0.94}	0.24 {0.84}
		-70	0.14 {0.49}	0.13 {0.45}	0.12 {0.41}	0.16 {0.56}	0.15 {0.52}	0.13 {0.47}	0.18 {0.62}	0.16 {0.57}	0.15 {0.52}	0.20 {0.72}	0.19 {0.66}	0.17 {0.59}
	2335BUZ 2345BUZ	-20	1.24 {4.36}	1.12 {3.95}	1.01 {3.54}	1.48 {5.19}	1.34 {4.71}	1.20 {4.21}	1.67 {5.88}	1.51 {5.32}	1.36 {4.77}	1.97 {6.93}	1.79 {6.28}	1.60 {5.62}
		-30	0.98 {3.44}	0.89 {3.12}	0.79 {2.79}	1.15 {4.03}	1.04 {3.65}	0.93 {3.26}	1.28 {4.51}	1.16 {4.09}	1.04 {3.65}	1.50 {5.28}	1.36 {4.78}	1.22 {4.28}
		-40	0.74 {2.59}	0.67 {2.35}	0.57 {2.01}	0.85 {3.00}	0.77 {2.72}	0.69 {2.43}	0.95 {3.35}	0.86 {3.03}	0.77 {2.71}	1.11 {3.89}	1.00 {3.52}	0.90 {3.15}
		-50	0.54 {1.91}	0.49 {1.73}	0.44 {1.54}	0.63 {2.20}	0.57 {1.99}	0.51 {1.78}	0.69 {2.43}	0.63 {2.21}	0.56 {1.97}	0.80 {2.82}	0.73 {2.56}	0.65 {2.29}
		-60	0.39 {1.38}	0.36 {1.25}	0.32 {1.12}	0.45 {1.58}	0.41 {1.44}	0.37 {1.29}	0.50 {1.75}	0.45 {1.59}	0.40 {1.42}	0.57 {2.02}	0.52 {1.84}	0.47 {1.65}
		-70	0.28 {0.98}	0.26 {0.90}	0.23 {0.81}	0.32 {1.12}	0.29 {1.03}	0.26 {0.93}	0.36 {1.25}	0.32 {1.14}	0.29 {1.03}	0.41 {1.43}	0.37 {1.31}	0.34 {1.19}
	2348BUZ	-20	1.85 {6.49}	1.67 {5.88}	1.50 {5.26}	2.20 {7.72}	1.99 {7.00}	1.78 {6.26}	2.48 {8.73}	2.25 {7.91}	2.01 {7.08}	2.93 {10.3}	2.65 {9.33}	2.38 {8.36}
		-30	1.46 {5.12}	1.32 {4.63}	1.18 {4.14}	1.70 {5.99}	1.54 {5.42}	1.38 {4.85}	1.91 {6.72}	1.73 {6.08}	1.55 {5.44}	2.23 {7.85}	2.02 {7.11}	1.81 {6.36}
		-40	1.10 {3.86}	0.99 {3.49}	0.89 {3.12}	1.27 {4.47}	1.15 {4.05}	1.03 {3.62}	1.42 {4.98}	1.28 {4.51}	1.15 {4.03}	1.65 {5.79}	1.49 {5.24}	1.33 {4.68}
		-50	0.80 {2.82}	0.73 {2.56}	0.65 {2.29}	0.92 {3.25}	0.84 {2.94}	0.75 {2.63}	1.03 {3.61}	0.93 {3.27}	0.83 {2.92}	1.19 {4.18}	1.08 {3.79}	0.96 {3.38}
		-60	0.58 {2.03}	0.53 {1.85}	0.47 {1.66}	0.66 {2.33}	0.60 {2.12}	0.54 {1.90}	0.73 {2.58}	0.67 {2.35}	0.60 {2.11}	0.85 {2.98}	0.77 {2.71}	0.69 {2.43}
		-70	0.42 {1.46}	0.38 {1.33}	0.34 {1.21}	0.47 {1.67}	0.44 {1.53}	0.39 {1.38}	0.53 {1.85}	0.48 {1.69}	0.44 {1.53}	0.61 {2.13}	0.55 {1.95}	0.50 {1.76}
	2341BUZ	-20	2.59 {9.10}	2.35 {8.25}	2.10 {7.39}	3.07 {10.8}	2.79 {9.82}	2.50 {8.79}	3.50 {12.3}	3.16 {11.1}	2.83 {9.95}	4.12 {14.5}	3.73 {13.1}	3.33 {11.7}
		-30	2.04 {7.19}	1.85 {6.51}	1.66 {5.82}	2.39 {8.42}	2.17 {7.62}	1.94 {6.81}	2.68 {9.44}	2.43 {8.54}	2.17 {7.64}	3.13 {11.0}	2.84 {9.99}	2.54 {8.93}
		-40	1.63 {5.73}	1.48 {5.19}	1.32 {4.63}	1.89 {6.64}	1.71 {6.01}	1.53 {5.37}	2.10 {7.40}	1.91 {6.70}	1.70 {5.99}	2.45 {8.61}	2.22 {7.79}	1.98 {6.96}
		-50	1.13 {3.98}	1.02 {3.60}	0.92 {3.22}	1.30 {4.58}	1.18 {4.15}	1.06 {3.71}	1.45 {5.09}	1.31 {4.61}	1.17 {4.12}	1.68 {5.89}	1.52 {5.34}	1.36 {4.77}
		-60	0.82 {2.87}	0.74 {2.61}	0.67 {2.34}	0.94 {3.30}	0.85 {3.00}	0.77 {2.69}	1.04 {3.65}	0.94 {3.32}	0.85 {2.98}	1.20 {4.22}	1.09 {3.83}	0.98 {3.44}
		-70	0.59 {2.06}	0.54 {1.89}	0.48 {1.70}	0.67 {2.36}	0.61 {2.16}	0.55 {1.95}	0.74 {2.61}	0.68 {2.39}	0.61 {2.16}	0.86 {3.01}	0.78 {2.76}	0.71 {2.49}
	2342BUZ	-20	4.49 {15.8}	4.07 {14.3}	3.64 {12.8}	5.35 {18.8}	4.86 {17.1}	4.35 {15.3}	6.06 {21.3}	5.49 {19.3}	4.92 {17.3}	7.14 {25.1}	6.48 {22.8}	5.80 {20.4}
		-30	3.55 {12.5}	3.21 {11.3}	2.87 {10.1}	4.15 {14.6}	3.75 {13.2}	3.36 {11.8}	4.66 {16.4}	4.21 {14.8}	3.75 {13.2}	5.43 {19.1}	4.92 {17.3}	4.41 {15.5}
		-40	2.68 {9.41}	2.42 {8.52}	2.16 {7.61}	3.10 {10.9}	2.81 {9.87}	2.51 {8.82}	3.47 {12.2}	3.13 {11.0}	2.80 {9.84}	4.01 {14.1}	3.64 {12.8}	3.24 {11.4}
		-50	1.97 {6.91}	1.78 {6.26}	1.59 {5.60}	2.26 {7.96}	2.05 {7.21}	1.83 {6.45}	2.51 {8.84}	2.28 {8.01}	2.04 {7.16}	2.90 {10.2}	2.64 {9.27}	2.36 {8.29}
		-60	1.41 {4.97}	1.29 {4.52}	1.15 {4.06}	1.62 {5.71}	1.48 {5.19}	1.32 {4.65}	1.80 {6.32}	1.64 {5.75}	1.46 {5.15}	2.08 {7.30}	1.89 {6.64}	1.69 {5.96}
		-70	1.02 {3.58}	0.93 {3.28}	0.84 {2.96}	1.16 {4.09}	1.07 {3.75}	0.96 {3.39}	1.29 {4.53}	1.18 {4.15}	1.07 {3.75}	1.48 {5.22}	1.36 {4.79}	1.23 {4.32}
	2344BUZ 3454BUZ 4564BUZ	-20	7.71 {27.1}	6.97 {24.5}	6.26 {22.0}	9.16 {32.2}	8.30 {29.2}	7.42 {26.1}	10.4 {36.4}	9.38 {33.0}	8.39 {29.5}	12.2 {43.0}	11.1 {38.9}	9.93 {34.9}
		-30	6.09 {21.4}	5.52 {19.4}	4.92 {17.3}	7.11 {25.0}	6.46 {22.7}	5.77 {20.3}	7.96 {28.0}	7.22 {25.4}	6.46 {22.7}	9.33 {32.8}	8.45 {29.7}	7.56 {26.6}
		-40	4.58 {16.1}	4.15 {14.6}	3.70 {13.0}	5.29 {18.6}	4.81 {16.9}	4.29 {15.1}	5.92 {20.8}	5.35 {18.8}	4.78 {16.8}	6.85 {24.1}	6.23 {21.9}	5.55 {19.5}
		-50	3.36 {11.8}	3.04 {10.7}	2.72 {9.58}	3.87 {13.6}	3.50 {12.3}	3.13 {11.0}	4.29 {15.1}	3.90 {13.7}	3.47 {12.2}	4.98 {17.5}	4.52 {15.9}	4.04 {14.2}
		-60	2.42 {8.52}	2.20 {7.75}	1.98 {6.95}	2.78 {9.78}	2.53 {8.89}	2.27 {7.97}	3.07 {10.8}	2.80 {9.85}	2.51 {8.83}	3.55 {12.5}	3.24 {11.4}	2.90 {10.2}
		-70	1.74 {6.13}	1.60 {5.62}	1.44 {5.07}	1.99 {7.01}	1.83 {6.43}	1.65 {5.80}	2.21 {7.76}	2.02 {7.11}	1.83 {6.42}	2.54 {8.94}	2.33 {8.20}	2.10 {7.40}
	4566BUZ	-20	10.7 {37.6}	9.67 {34.0}	8.67 {30.5}	12.7 {44.7}	11.5 {40.5}	10.3 {36.3}	14.4 {50.6}	13.0 {45.8}	11.7 {41.0}	17.0 {59.6}	15.4 {54.1}	13.8 {48.4}
		-30	8.76 {30.8}	7.93 {27.9}	7.08 {24.9}	10.3 {36.1}	9.30 {32.7}	8.30 {29.2}	11.5 {40.4}	10.4 {36.6}	9.30 {32.7}	13.5 {47.3}	12.2 {42.8}	10.9 {38.3}
		-40	6.34 {22.3}	5.74 {20.2}	5.15 {18.1}	7.37 {25.9}	6.65 {23.4}	5.94 {20.9}	8.22 {28.9}	7.42 {26.1}	6.65 {23.4}	9.53 {33.5}	8.62 {30.3}	7.71 {27.1}
		-50	4.66 {16.4}	4.24 {14.9}	3.78 {13.3}	5.37 {18.9}	4.86 {17.1}	4.35 {15.3}	5.97 {21.0}	5.40 {19.0}	4.83 {17.0}	6.91 {24.3}	6.26 {22.0}	5.60 {19.7}
		-60	3.44 {12.1}	3.13 {11.0}	2.81 {9.88}	3.95 {13.9}	3.58 {12.6}	3.21 {11.3}	4.38 {15.4}	3.98 {14.0}	3.55 {12.5}	5.06 {17.8}	4.61 {16.2}	4.12 {14.5}
		-70	2.42 {8.51}	2.22 {7.80}	2.00 {7.04}	2.77 {9.73}	2.54 {8.92}	2.29 {8.06}	3.07 {10.8}	2.81 {9.87}	2.54 {8.92}	3.53 {12.4}	3.24 {11.4}	2.93 {10.3}
	4568BUZ	-20	15.2 {53.5}	13.8 {48.4}	12.3 {43.4}	18.1 {63.6}	16.4 {57.7}	14.7 {51.6}	20.5 {71.9}	18.5 {65.2}	16.6 {58.3}	24.1 {84.9}	21.9 {76.9}	19.6 {68.9}
		-30	12.0 {42.2}	10.9 {38.2}	9.70 {34.1}	14.1 {49.4}	12.7 {44.7}	11.4 {40.0}	15.8 {55.4}	14.3 {50.1}	12.7 {44.8}	18.4 {64.7}	16.7 {58.6}	14.9 {52.4}
		-40	9.04 {31.8}	8.19 {28.8}	7.31 {25.7}	10.5 {36.9}	9.50 {33.4}	8.47 {29.8}	11.7 {41.1}	10.6 {37.2}	9.44 {33.2}	13.6 {47.8}	12.3 {43.2}	11.0 {38.6}
		-50	6.63 {23.3}	6.00 {21.1}	5.37 {18.9}	7.62 {26.8}	6.91 {24.3}	6.17 {21.7}	8.47 {29.8}	7.68 {27.0}	6.88 {24.2}	9.81 {34.5}	8.90 {31.3}	7.93 {27.9}
		-60	4.81 {16.9}	4.35 {15.3}	3.92 {13.8}	5.52 {19.4}	5.01 {17.6}	4.49 {15.8}	6.09 {21.4}	5.55 {19.5}	4.95 {17.4}	7.05 {24.8}	6.40 {22.5}	5.74 {20.2}
		-70	3.47 {12.2}	3.16 {11.1}	2.87 {10.1}	3.95 {13.9}	3.61 {12.7}	3.27 {11.5}	4.35 {15.3}	4.01 {14.1}	3.61 {12.7}	5.03 {17.7}	4.64 {16.3}	4.18 {14.7}