Correction Elements That Influence the Capacity

Pressure Drop in the High-Pressure Side Liquid Pipe

Pressure drop on the high-pressure side results in a reduction in refrigerating capacity. The pressure drop occurring between the condenser and the expansion valve can lead to the generation of flush gas, which reduces the capacity of the expansion valve. Therefore, it is usually necessary to consider subcooling of approx. 1 to 3℃.

Correction Factor for Pressure Drop in the Low-Pressure Side Pipe

Pressure drops in the distributor and the evaporator can cause temperature imbalances and reduced capacity. The correction factors shown here are for changes in pressure drop within the distributor and evaporator.

R134a

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R404A

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R407C

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R410A

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R448A

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R449A

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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

R407H

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	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	0.963	0.955	0.947	0.939	0.932	0.924
-50	1.000	0.993	0.985	0.977	0.970	0.962	0.954	0.946	0.939	0.931	0.923
-40	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.921
-30	1.000	0.992	0.984	0.976	0.968	0.960	0.952	0.943	0.935	0.926	0.918
-20	1.000	0.992	0.983	0.975	0.966	0.958	0.949	0.940	0.931	0.922	0.913
-10	1.000	0.991	0.982	0.973	0.964	0.954	0.945	0.935	0.926	0.916	0.906
-5	1.000	0.991	0.981	0.971	0.962	0.952	0.942	0.932	0.922	0.912	0.901
0	1.000	0.990	0.980	0.970	0.959	0.949	0.938	0.928	0.917	0.906	0.895
5	1.000	0.989	0.978	0.967	0.956	0.945	0.933	0.922	0.910	0.898	0.886
10	1.000	0.988	0.976	0.964	0.952	0.939	0.927	0.914	0.901	0.888	0.874

R463A-J

Evaporating Temp. (℃)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.995	0.990	0.984	0.979	0.974	0.969	0.963	0.958	0.953	0.947
-50	1.000	0.995	0.990	0.984	0.979	0.974	0.968	0.963	0.957	0.952	0.946
-40	1.000	0.995	0.989	0.984	0.978	0.973	0.967	0.962	0.956	0.951	0.945
-30	1.000	0.994	0.989	0.983	0.978	0.972	0.966	0.960	0.955	0.949	0.943
-20	1.000	0.994	0.988	0.982	0.976	0.970	0.964	0.958	0.952	0.946	0.940
-10	1.000	0.994	0.987	0.981	0.975	0.968	0.962	0.955	0.948	0.942	0.935
-5	1.000	0.993	0.987	0.980	0.973	0.966	0.960	0.953	0.946	0.939	0.932
0	1.000	0.993	0.986	0.979	0.972	0.964	0.957	0.950	0.942	0.935	0.927
5	1.000	0.992	0.985	0.977	0.970	0.962	0.954	0.946	0.938	0.930	0.922
10	1.000	0.992	0.984	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.915

Selection Example for PKV and GKV

Select the most suitable electronic expansion valve for the operating conditions shown on page 7.

(1) Calculate the max. required refrigerating capacity of the equipment
(Usually the capacity right after starting operation)
Use the correction factor table for R404A to find the correction factor (1.55) from the evaporating temp. (-30℃), condensing temp. (40℃) Ⓐ, and subcooling (30℃) Ⓑ. Then, divide the required refrigerating capacity (37.0 kW) by the correction factor to get the max. required refrigerating capacity (23.9kW).

(2) Calculate the min. required refrigeration capacity of the equipment
(Usually the capacity right after operation ends)
Find the correction factor (1.66) from the evaporating temp. (-50℃), condensing temp. (40℃) Ⓒ, and subcooling (40℃) Ⓓ. Then, divide the required refrigerating capacity (17.5kW) by the correction factor to get the min. required refrigerating capacity (10.5kW).

(3) Select an electronic expansion valve
At 480 pulses, GKV-34BS and GKV-60BS have larger refrigerating capacity than the equipment requires. Comparing the valve operating range between max. and min. loads, GKV-60BS has 80 pulses Ⓔ, while GKV-34BS has 185 pulses Ⓕ. Therefore, select the GKV-34BS, which has a wider valve operating range (higher resolution).

Correction Factor for R404A — Superheat : 5℃

	ET (℃)	CT (℃)	Subcooling (℃) 0	10	20	30 (B)	40 (D)	50	60
	-70	50	0.61	0.85	1.08	1.30	1.52	1.74	1.95
		45	0.69	0.91	1.12	1.33	1.54	1.74	1.94
		40	0.75	0.96	1.16	1.35	1.54	1.73	1.92
		35	0.80	0.99	1.18	1.36	1.54	1.72	1.90
		30	0.84	1.02	1.19	1.36	1.53	1.70	1.86
	-60	50	0.68	0.92	1.15	1.37	1.59	1.81	2.03
		45	0.76	0.98	1.19	1.40	1.61	1.81	2.01
		40	0.82	1.02	1.22	1.41	1.61	1.80	1.99
		35	0.86	1.05	1.24	1.42	1.60	1.78	1.96
		30	0.90	1.07	1.24	1.41	1.58	1.75	1.91
	-50	50	0.75	0.99	1.22	1.44	1.66	1.88	2.09
		45	0.82	1.04	1.25	1.46	1.67	1.87	2.07
Ⓒ➡		40	0.87	1.08	1.28	1.47	1.66	1.85	2.04
		35	0.92	1.10	1.29	1.47	1.65	1.83	2.00
		30	0.95	1.12	1.29	1.46	1.63	1.79	1.96
	-40	50	0.81	1.05	1.28	1.50	1.72	1.93	2.15
		45	0.87	1.09	1.31	1.51	1.72	1.92	2.12
		40	0.92	1.13	1.32	1.52	1.71	1.90	2.08
		35	0.96	1.15	1.33	1.51	1.69	1.86	2.04
		30	0.98	1.16	1.33	1.49	1.66	1.82	1.98
	-30	50	0.86	1.10	1.33	1.55	1.76	1.98	2.19
		45	0.92	1.14	1.35	1.55	1.76	1.96	2.15
Ⓐ➡		40	0.96	1.16	1.36	1.55	1.74	1.92	2.11
		35	0.99	1.18	1.36	1.53	1.71	1.88	2.05
		30	1.01	1.18	1.35	1.51	1.67	1.83	—
	-25	50	0.88	1.12	1.35	1.57	1.78	1.99	2.20
		45	0.94	1.16	1.36	1.57	1.77	1.97	2.16
		40	0.98	1.18	1.37	1.56	1.75	1.93	2.11
		35	1.01	1.19	1.36	1.54	1.71	1.88	—
		30	1.02	1.18	1.35	1.51	1.67	1.82	—
	-20	50	0.90	1.14	1.36	1.58	1.79	2.00	2.21
		45	0.96	1.17	1.38	1.58	1.78	1.97	2.16
		40	0.99	1.19	1.38	1.56	1.75	1.93	—
		35	1.01	1.19	1.37	1.54	1.71	1.87	—
		30	1.02	1.18	1.34	1.50	1.66	—	—
	-15	50	0.92	1.15	1.37	1.59	1.80	2.01	2.21
		45	0.97	1.18	1.38	1.58	1.78	1.97	—
		40	1.00	1.19	1.38	1.56	1.74	1.92	—
		35	1.01	1.19	1.36	1.53	1.69	—	—
		30	1.02	1.17	1.33	1.48	1.64	—	—
	-10	50	0.93	1.16	1.38	1.59	1.80	2.00	—
		45	0.97	1.18	1.38	1.58	1.77	1.96	—
		40	1.00	1.19	1.37	1.55	1.73	—	—
		35	1.01	1.18	1.35	1.51	1.67	—	—
		30	1.00	1.16	1.31	1.46	—	—	—
	-5	50	0.94	1.16	1.38	1.58	1.79	1.99	—
		45	0.98	1.18	1.37	1.57	1.75	—	—
		40	0.99	1.18	1.36	1.53	1.70	—	—
		35	1.00	1.16	1.32	1.48	—	—	—
		30	0.98	1.13	1.28	1.42	—	—	—
	0	50	0.94	1.16	1.37	1.57	1.77	—	—
		45	0.97	1.17	1.36	1.54	1.73	—	—
		40	0.98	1.16	1.33	1.50	—	—	—
		35	0.98	1.14	1.29	1.44	—	—	—
		30	0.95	1.09	1.23	—	—	—	—

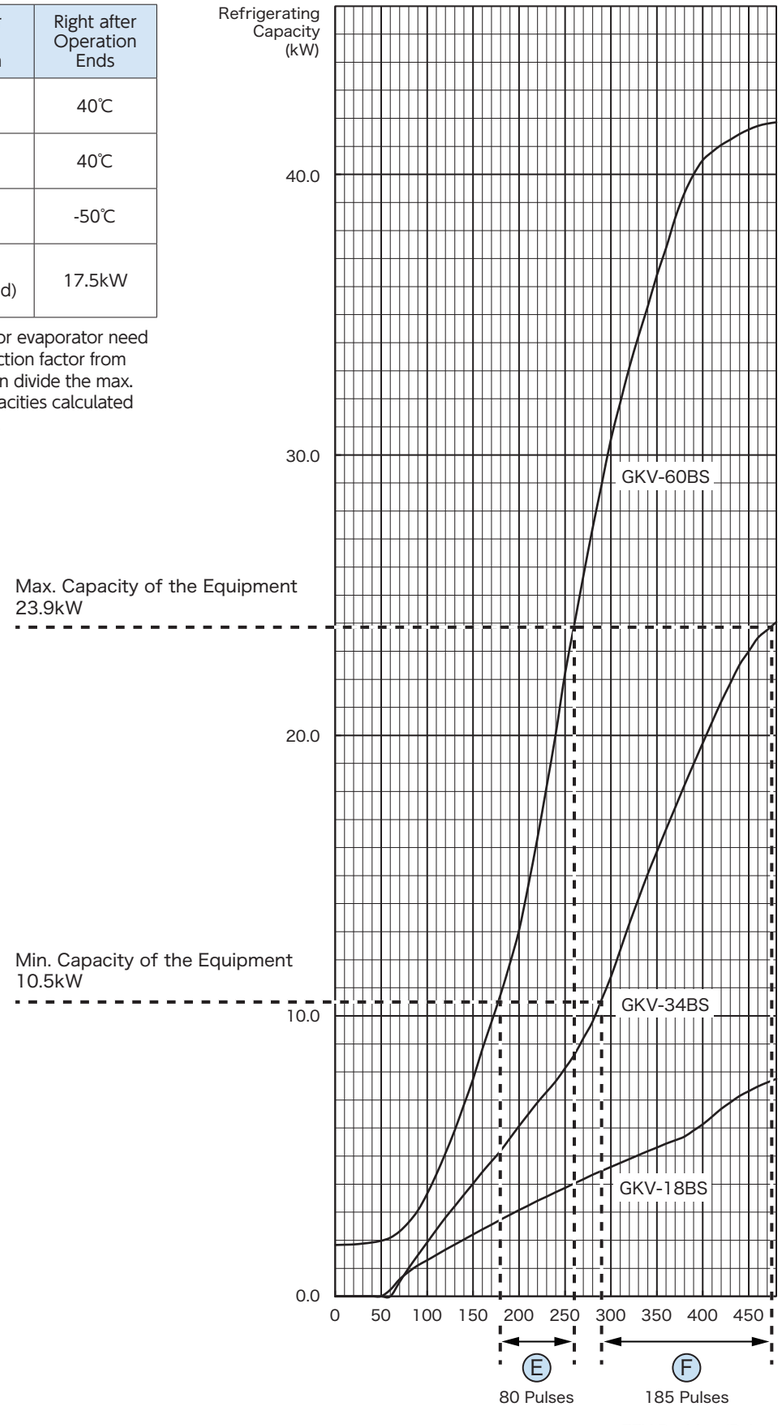
Operating Conditions

Equipment : Rapid Freezer (using a two-stage compression refrigeration unit)
Target Freezing Temperature : -40℃
Refrigerant : R404A

Operating Conditions	Right after Starting Operation	Right after Operation Ends
Condensing Temp. (CT)	40℃	40℃
Subcooling (SC)	30℃	40℃
Evaporating Temp. (ET)	-30℃	-50℃
Required Refrigerating Capacity	37.0kW (at max. load)	17.5kW

＊ If pressure drops in the distributor or evaporator need to be considered, obtain the correction factor from the tables on pages 1 to 3 and then divide the max. and min. required refrigerating capacities calculated previously by the correction factor.

Conditions
Refrigerant : R404A
Evaporating Temp. (ET) : -10℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃



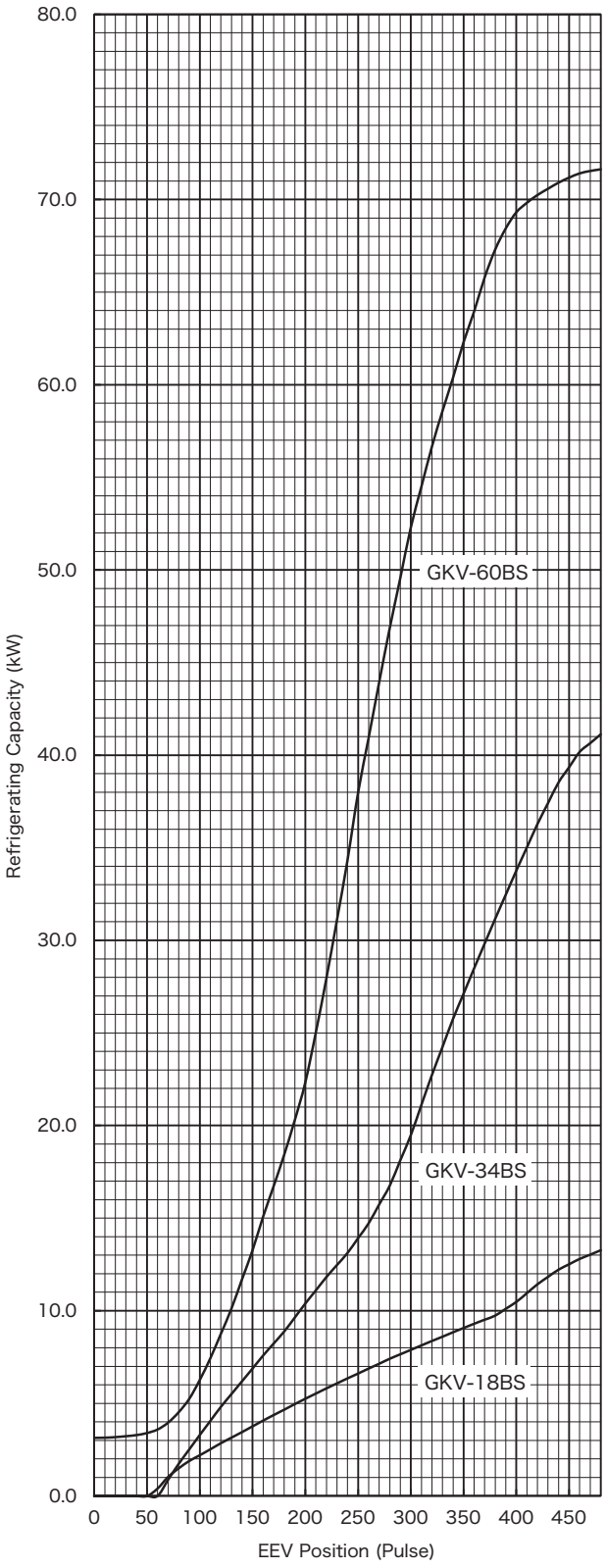
Capacity Chart for GKV

R23 ＜Type GKV＞

Refrigerant : R23
Evaporating Temp. (ET) : -65℃
Condensing Temp. (CT) : 0℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R23



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

・ET -70 to -40℃ / CT over 0℃

Correction Factor for R23 Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃)						
		0	10	20	30	40	50	60
-70	0	1.00	1.16	1.31	1.46	1.60	1.74	1.88
	-10	0.99	1.12	1.25	1.37	1.49	1.61	—
	-20	0.95	1.05	1.16	1.26	1.36	—	—
	-30	0.87	0.95	1.04	1.12	—	—	—
	-40	0.76	0.82	0.89	—	—	—	—
-65	0	1.00	1.16	1.31	1.45	1.59	1.73	1.87
	-10	0.99	1.11	1.24	1.36	1.48	1.60	—
	-20	0.93	1.04	1.14	1.24	1.34	—	—
	-30	0.85	0.93	1.01	1.09	—	—	—
	-40	0.72	0.79	0.85	—	—	—	—
-60	0	1.00	1.15	1.30	1.44	1.58	1.72	—
	-10	0.98	1.10	1.22	1.34	1.46	—	—
	-20	0.92	1.02	1.12	1.21	—	—	—
	-30	0.82	0.90	0.97	—	—	—	—
	-40	0.67	0.73	—	—	—	—	—
-55	0	0.99	1.14	1.28	1.43	1.57	1.70	—
	-10	0.96	1.08	1.20	1.32	1.43	—	—
	-20	0.89	0.99	1.08	1.18	—	—	—
	-30	0.77	0.85	0.92	—	—	—	—
	-40	0.61	0.66	—	—	—	—	—
-50	0	0.97	1.12	1.26	1.40	1.54	—	—
	-10	0.94	1.06	1.17	1.29	—	—	—
	-20	0.85	0.95	1.04	—	—	—	—
	-30	0.72	0.79	—	—	—	—	—
	-40	0.52	—	—	—	—	—	—
-45	0	0.96	1.10	1.24	1.37	1.51	—	—
	-10	0.91	1.02	1.13	1.24	—	—	—
	-20	0.81	0.90	0.98	—	—	—	—
	-30	0.65	0.71	—	—	—	—	—
	-40	0.38	—	—	—	—	—	—
-40	0	0.93	1.07	1.20	1.34	—	—	—
	-10	0.87	0.98	1.08	—	—	—	—
	-20	0.75	0.83	—	—	—	—	—
	-30	0.55	—	—	—	—	—	—
-35	0	0.90	1.03	1.16	1.29	—	—	—
	-10	0.82	0.92	1.02	—	—	—	—
	-20	0.67	0.74	—	—	—	—	—
	-30	0.40	—	—	—	—	—	—
-30	0	0.86	0.98	1.11	—	—	—	—
	-10	0.76	0.85	—	—	—	—	—
	-20	0.57	—	—	—	—	—	—
-25	0	0.80	0.92	1.04	—	—	—	—
	-10	0.67	0.76	—	—	—	—	—
	-20	0.41	—	—	—	—	—	—
-20	0	0.74	0.85	—	—	—	—	—
	-10	0.57	—	—	—	—	—	—

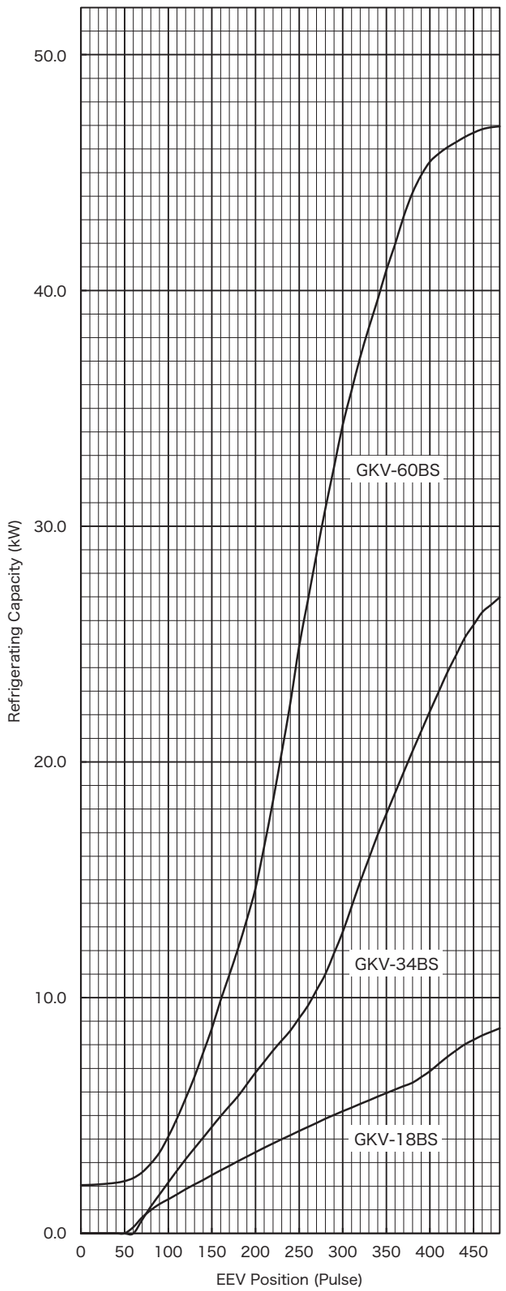
Capacity Chart for GKV

R134a ＜Type GKV＞

Refrigerant : R134a
Evaporating Temp. (ET) : -10℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R134a



Correction Factor for R134a　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃) 0	10	20	30	40	50	60
-70	50	0.77	0.93	1.08	1.23	1.38	1.53	1.68
	45	0.80	0.94	1.08	1.22	1.36	1.50	1.64
	40	0.81	0.95	1.08	1.21	1.34	1.47	1.60
	35	0.82	0.95	1.07	1.19	1.31	1.44	1.56
	30	0.82	0.94	1.05	1.17	1.28	1.39	1.51
-60	50	0.83	0.98	1.13	1.28	1.44	1.59	1.73
	45	0.85	0.99	1.13	1.28	1.42	1.56	1.70
	40	0.86	0.99	1.13	1.26	1.39	1.52	1.65
	35	0.86	0.99	1.11	1.24	1.36	1.48	1.60
	30	0.86	0.98	1.09	1.21	1.32	1.43	1.55
-50	50	0.88	1.03	1.19	1.34	1.49	1.64	1.79
	45	0.90	1.04	1.18	1.32	1.46	1.60	1.74
	40	0.90	1.04	1.17	1.30	1.43	1.56	1.70
	35	0.91	1.03	1.15	1.28	1.40	1.52	1.64
	30	0.90	1.01	1.13	1.24	1.36	1.47	1.58
-40	50	0.93	1.08	1.23	1.38	1.53	1.68	1.83
	45	0.94	1.08	1.22	1.37	1.51	1.65	1.79
	40	0.94	1.08	1.21	1.34	1.47	1.60	1.73
	35	0.94	1.06	1.19	1.31	1.43	1.55	1.67
	30	0.93	1.04	1.16	1.27	1.38	1.49	1.61
-30	50	0.97	1.12	1.27	1.42	1.57	1.72	1.87
	45	0.98	1.12	1.26	1.40	1.54	1.68	1.81
	40	0.98	1.11	1.24	1.37	1.50	1.62	1.75
	35	0.97	1.09	1.21	1.33	1.45	1.57	1.69
	30	0.95	1.06	1.17	1.28	1.39	1.50	—
-25	50	0.99	1.14	1.29	1.44	1.59	1.73	1.88
	45	0.99	1.13	1.27	1.41	1.55	1.69	1.82
	40	0.99	1.12	1.25	1.38	1.50	1.63	1.76
	35	0.98	1.10	1.21	1.33	1.45	1.57	—
	30	0.95	1.07	1.17	1.28	1.39	1.50	—
-20	50	1.00	1.15	1.30	1.45	1.60	1.74	1.89
	45	1.00	1.14	1.28	1.42	1.56	1.69	1.83
	40	1.00	1.12	1.25	1.38	1.51	1.63	—
	35	0.98	1.10	1.22	1.33	1.45	1.57	—
	30	0.96	1.06	1.17	1.28	1.39	—	—
-15	50	1.01	1.16	1.31	1.46	1.60	1.75	1.89
	45	1.01	1.15	1.29	1.42	1.56	1.69	—
	40	1.00	1.13	1.25	1.38	1.50	1.63	—
	35	0.98	1.10	1.21	1.33	1.44	—	—
	30	0.95	1.06	1.16	1.27	1.37	—	—
-10	50	1.02	1.17	1.32	1.46	1.60	1.75	—
	45	1.02	1.15	1.29	1.42	1.55	1.69	—
	40	1.00	1.12	1.25	1.37	1.49	—	—
	35	0.97	1.09	1.20	1.31	1.43	—	—
	30	0.94	1.04	1.15	1.25	—	—	—
-5	50	1.03	1.17	1.32	1.46	1.60	1.74	—
	45	1.02	1.15	1.28	1.41	1.54	—	—
	40	0.99	1.12	1.24	1.36	1.48	—	—
	35	0.96	1.07	1.18	1.29	—	—	—
	30	0.92	1.02	1.12	1.22	—	—	—
0	50	1.02	1.17	1.31	1.45	1.59	—	—
	45	1.01	1.14	1.27	1.40	1.52	—	—
	40	0.98	1.10	1.22	1.33	—	—	—
	35	0.94	1.05	1.16	1.26	—	—	—
	30	0.89	0.99	1.08	—	—	—	—
5	50	1.02	1.16	1.29	1.43	1.56	—	—
	45	1.00	1.12	1.25	1.37	—	—	—
	40	0.96	1.07	1.19	1.30	—	—	—
	35	0.91	1.02	1.12	—	—	—	—
	30	0.85	0.94	1.03	—	—	—	—
10	50	1.00	1.14	1.27	1.40	—	—	—
	45	0.97	1.09	1.21	1.33	—	—	—
	40	0.93	1.04	1.15	—	—	—	—
	35	0.87	0.97	1.06	—	—	—	—
	30	0.80	0.88	—	—	—	—	—

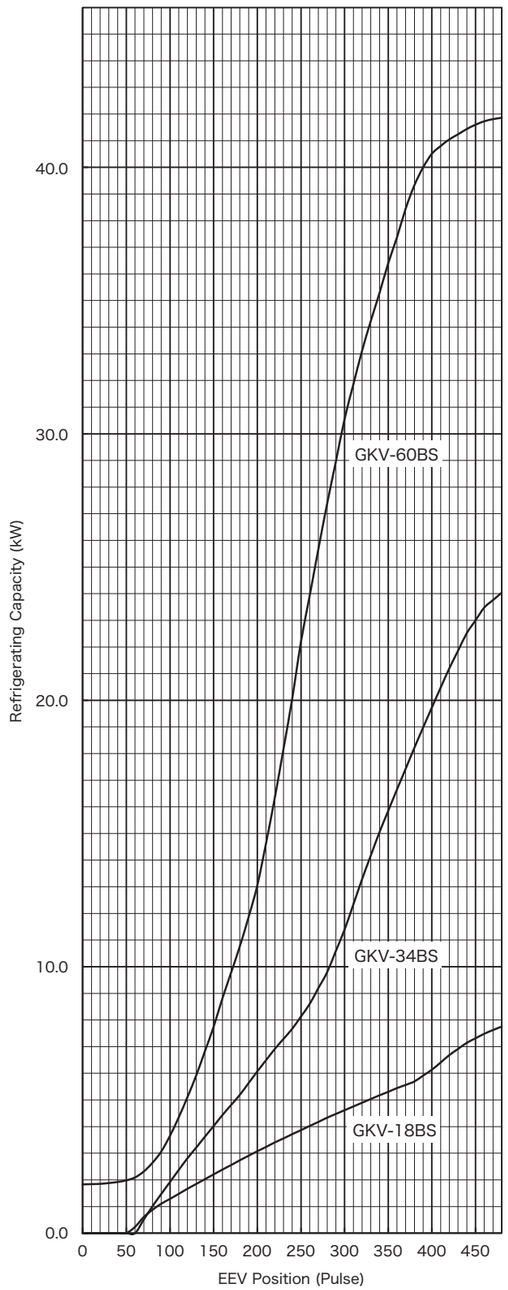
Capacity Chart for GKV

R404A ＜Type GKV＞

Refrigerant : R404A
Evaporating Temp. (ET) : -10℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R404A



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

- ET -70 to -60℃ / CT 40℃ or more
- ET -50 to -25℃ / CT 45℃ or more
- ET -20 to -5℃ / CT 50℃

Correction Factor for R404A　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃) 0	10	20	30	40	50	60
-70	50	0.61	0.85	1.08	1.30	1.52	1.74	1.95
	45	0.69	0.91	1.12	1.33	1.54	1.74	1.94
	40	0.75	0.96	1.16	1.35	1.54	1.73	1.92
	35	0.80	0.99	1.18	1.36	1.54	1.72	1.90
	30	0.84	1.02	1.19	1.36	1.53	1.70	1.86
-60	50	0.68	0.92	1.15	1.37	1.59	1.81	2.03
	45	0.76	0.98	1.19	1.40	1.61	1.81	2.01
	40	0.82	1.02	1.22	1.41	1.61	1.80	1.99
	35	0.86	1.05	1.24	1.42	1.60	1.78	1.96
	30	0.90	1.07	1.24	1.41	1.58	1.75	1.91
-50	50	0.75	0.99	1.22	1.44	1.66	1.88	2.09
	45	0.82	1.04	1.25	1.46	1.67	1.87	2.07
	40	0.87	1.08	1.28	1.47	1.66	1.85	2.04
	35	0.92	1.10	1.29	1.47	1.65	1.83	2.00
	30	0.95	1.12	1.29	1.46	1.63	1.79	1.96
-40	50	0.81	1.05	1.28	1.50	1.72	1.93	2.15
	45	0.87	1.09	1.31	1.51	1.72	1.92	2.12
	40	0.92	1.13	1.32	1.52	1.71	1.90	2.08
	35	0.96	1.15	1.33	1.51	1.69	1.86	2.04
	30	0.98	1.16	1.33	1.49	1.66	1.82	1.98
-30	50	0.86	1.10	1.33	1.55	1.76	1.98	2.19
	45	0.92	1.14	1.35	1.55	1.76	1.96	2.15
	40	0.96	1.16	1.36	1.55	1.74	1.92	2.11
	35	0.99	1.18	1.36	1.53	1.71	1.88	2.05
	30	1.01	1.18	1.35	1.51	1.67	1.83	—
-25	50	0.88	1.12	1.35	1.57	1.78	1.99	2.20
	45	0.94	1.16	1.36	1.57	1.77	1.97	2.16
	40	0.98	1.18	1.37	1.56	1.75	1.93	2.11
	35	1.01	1.19	1.36	1.54	1.71	1.88	—
	30	1.02	1.18	1.35	1.51	1.67	1.82	—
-20	50	0.90	1.14	1.36	1.58	1.79	2.00	2.21
	45	0.96	1.17	1.38	1.58	1.78	1.97	2.16
	40	0.99	1.19	1.38	1.56	1.75	1.93	—
	35	1.01	1.19	1.37	1.54	1.71	1.87	—
	30	1.02	1.18	1.34	1.50	1.66	—	—
-15	50	0.92	1.15	1.37	1.59	1.80	2.01	2.21
	45	0.97	1.18	1.38	1.58	1.78	1.97	—
	40	1.00	1.19	1.38	1.56	1.74	1.92	—
	35	1.01	1.19	1.36	1.53	1.69	—	—
	30	1.02	1.17	1.33	1.48	1.64	—	—
-10	50	0.93	1.16	1.38	1.59	1.80	2.00	—
	45	0.97	1.18	1.38	1.58	1.77	1.96	—
	40	1.00	1.19	1.37	1.55	1.73	—	—
	35	1.01	1.18	1.35	1.51	1.67	—	—
	30	1.00	1.16	1.31	1.46	—	—	—
-5	50	0.94	1.16	1.38	1.58	1.79	1.99	—
	45	0.98	1.18	1.37	1.57	1.75	—	—
	40	0.99	1.18	1.36	1.53	1.70	—	—
	35	1.00	1.16	1.32	1.48	—	—	—
	30	0.98	1.13	1.28	1.42	—	—	—
0	50	0.94	1.16	1.37	1.57	1.77	—	—
	45	0.97	1.17	1.36	1.54	1.73	—	—
	40	0.98	1.16	1.33	1.50	—	—	—
	35	0.98	1.14	1.29	1.44	—	—	—
	30	0.95	1.09	1.23	—	—	—	—
5	50	0.93	1.15	1.35	1.55	1.74	—	—
	45	0.96	1.15	1.33	1.51	—	—	—
	40	0.96	1.13	1.30	1.46	—	—	—
	35	0.94	1.10	1.24	—	—	—	—
	30	0.91	1.04	1.17	—	—	—	—
10	50	0.92	1.13	1.33	1.52	—	—	—
	45	0.94	1.12	1.30	1.47	—	—	—
	40	0.93	1.09	1.25	—	—	—	—
	35	0.90	1.04	1.18	—	—	—	—
	30	0.85	0.97	—	—	—	—	—

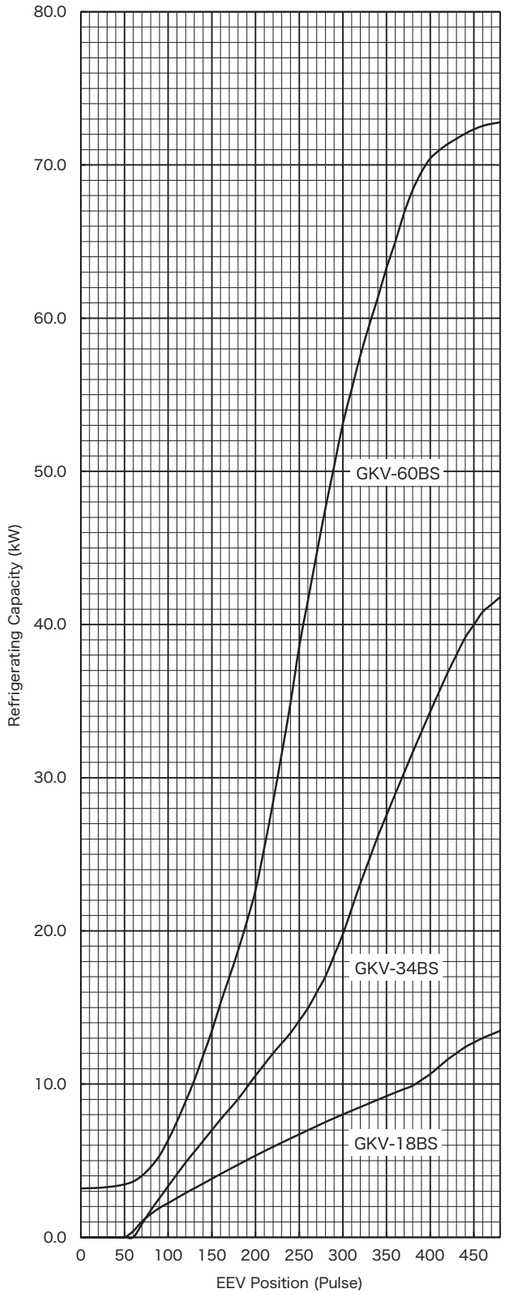
Capacity Chart for GKV

R410A ＜Type GKV＞

Refrigerant : R410A
Evaporating Temp. (ET) : -20℃
Condensing Temp. (CT) : 30℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R410A



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

- ET -70 ～ -30℃ / CT 35℃ or more
- ET -25 ～ -15℃ / CT 40℃ or more
- ET -10 ～ 0℃ / CT 45℃ or more
- ET 5 ～ 10℃ / CT 50℃ or more

Correction Factor for R410A　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃)						
		0	10	20	30	40	50	60
-70	50	0.86	1.05	1.23	1.40	1.58	1.74	1.91
	45	0.90	1.08	1.24	1.41	1.57	1.72	1.88
	40	0.93	1.09	1.25	1.40	1.55	1.69	1.84
	35	0.95	1.10	1.24	1.38	1.52	1.66	1.80
	30	0.96	1.10	1.23	1.36	1.49	1.62	1.75
-60	50	0.90	1.09	1.27	1.44	1.62	1.78	1.95
	45	0.94	1.11	1.28	1.44	1.60	1.76	1.91
	40	0.96	1.13	1.28	1.43	1.58	1.73	1.87
	35	0.98	1.13	1.27	1.41	1.55	1.69	1.83
	30	0.99	1.13	1.26	1.39	1.52	1.65	1.77
-50	50	0.92	1.11	1.29	1.47	1.64	1.81	1.97
	45	0.96	1.13	1.30	1.46	1.62	1.78	1.93
	40	0.99	1.15	1.30	1.45	1.60	1.74	1.89
	35	1.00	1.15	1.29	1.43	1.57	1.70	1.84
	30	1.00	1.14	1.27	1.40	1.53	1.66	1.78
-40	50	0.95	1.14	1.32	1.49	1.66	1.83	1.99
	45	0.98	1.16	1.32	1.48	1.64	1.80	1.95
	40	1.01	1.16	1.32	1.47	1.61	1.76	1.90
	35	1.02	1.16	1.30	1.44	1.58	1.71	1.85
	30	1.02	1.15	1.28	1.41	1.54	1.66	1.78
-30	50	0.97	1.16	1.34	1.51	1.68	1.84	2.00
	45	1.00	1.17	1.33	1.49	1.65	1.80	1.95
	40	1.02	1.17	1.32	1.47	1.61	1.76	1.90
	35	1.02	1.16	1.30	1.44	1.57	1.70	1.83
	30	1.02	1.15	1.27	1.40	1.52	1.64	—
-25	50	0.98	1.16	1.34	1.51	1.68	1.84	2.00
	45	1.00	1.17	1.33	1.49	1.65	1.80	1.95
	40	1.02	1.17	1.32	1.47	1.61	1.75	1.89
	35	1.02	1.16	1.30	1.43	1.56	1.69	—
	30	1.01	1.14	1.26	1.39	1.51	1.63	—
-20	50	0.98	1.16	1.34	1.51	1.67	1.83	1.99
	45	1.00	1.17	1.33	1.49	1.64	1.79	1.93
	40	1.01	1.17	1.31	1.46	1.60	1.73	—
	35	1.01	1.15	1.29	1.42	1.55	1.67	—
	30	1.00	1.13	1.25	1.37	1.49	—	—
-15	50	0.98	1.16	1.33	1.50	1.66	1.82	1.98
	45	1.00	1.16	1.32	1.47	1.62	1.77	—
	40	1.01	1.16	1.30	1.44	1.58	1.71	—
	35	1.00	1.14	1.27	1.40	1.52	—	—
	30	0.98	1.11	1.23	1.34	1.46	—	—
-10	50	0.97	1.15	1.32	1.49	1.64	1.80	—
	45	0.99	1.15	1.31	1.46	1.60	1.75	—
	40	0.99	1.14	1.28	1.42	1.55	—	—
	35	0.98	1.11	1.24	1.37	1.49	—	—
	30	0.96	1.08	1.19	1.31	—	—	—
-5	50	0.96	1.14	1.31	1.47	1.62	1.78	—
	45	0.98	1.13	1.29	1.43	1.58	—	—
	40	0.97	1.12	1.25	1.39	1.52	—	—
	35	0.96	1.09	1.21	1.33	—	—	—
	30	0.93	1.04	1.15	1.26	—	—	—
0	50	0.95	1.12	1.28	1.44	1.59	—	—
	45	0.96	1.11	1.26	1.40	1.54	—	—
	40	0.95	1.09	1.22	1.35	—	—	—
	35	0.93	1.05	1.17	1.28	—	—	—
	30	0.89	1.00	1.10	—	—	—	—
5	50	0.93	1.10	1.25	1.41	1.55	—	—
	45	0.93	1.08	1.22	1.36	—	—	—
	40	0.92	1.05	1.17	1.30	—	—	—
	35	0.89	1.00	1.11	—	—	—	—
	30	0.84	0.94	1.04	—	—	—	—
10	50	0.90	1.06	1.22	1.36	—	—	—
	45	0.90	1.04	1.18	1.31	—	—	—
	40	0.87	1.00	1.12	—	—	—	—
	35	0.83	0.94	1.05	—	—	—	—
	30	0.77	0.87	—	—	—	—	—

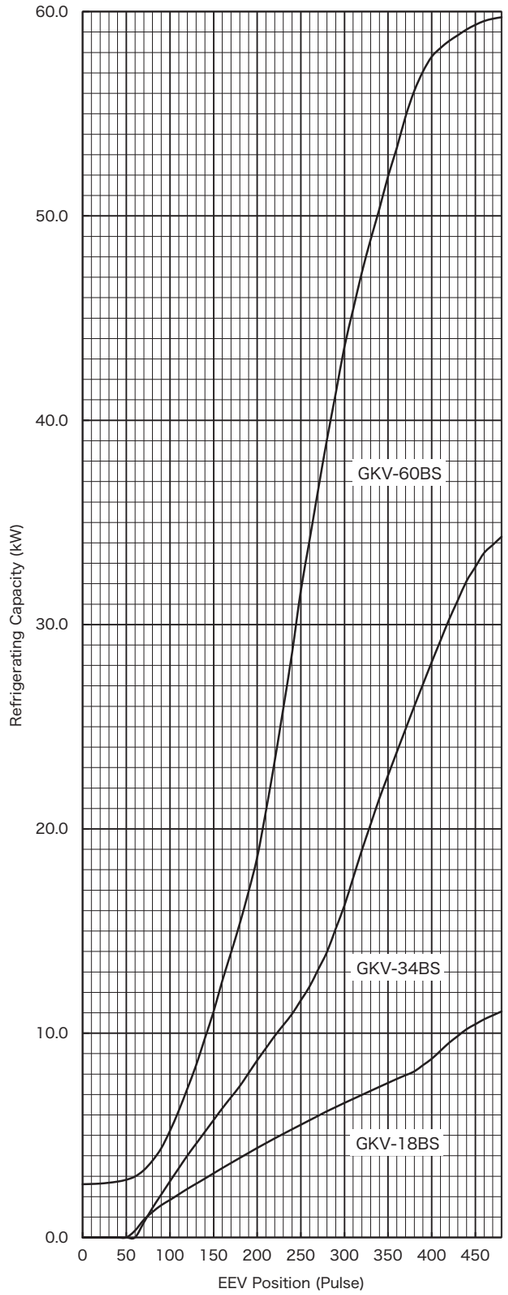
Capacity Chart for GKV

R448A ＜Type GKV＞

Refrigerant : R448A
Evaporating Temp. (ET) : -10℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R448A



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

- ET -70 to -50℃ / CT 40℃ or more
- ET -40 to -15℃ / CT 45℃ or more
- ET -10 to 0℃ / CT 50℃

Correction Factor for R448A　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃)						
		0	10	20	30	40	50	60
-70	50	0.72	0.90	1.07	1.24	1.40	1.57	1.73
	45	0.76	0.93	1.09	1.25	1.40	1.56	1.71
	40	0.80	0.95	1.10	1.25	1.39	1.54	1.68
	35	0.82	0.96	1.10	1.24	1.38	1.52	1.65
	30	0.84	0.97	1.10	1.23	1.36	1.49	1.61
-60	50	0.77	0.95	1.12	1.29	1.46	1.62	1.79
	45	0.81	0.98	1.14	1.30	1.45	1.61	1.76
	40	0.84	1.00	1.15	1.29	1.44	1.59	1.73
	35	0.87	1.01	1.15	1.29	1.42	1.56	1.69
	30	0.88	1.01	1.14	1.27	1.40	1.53	1.65
-50	50	0.82	1.00	1.17	1.34	1.51	1.67	1.84
	45	0.86	1.02	1.18	1.34	1.50	1.65	1.81
	40	0.89	1.04	1.19	1.34	1.48	1.63	1.77
	35	0.90	1.05	1.19	1.32	1.46	1.60	1.73
	30	0.91	1.05	1.18	1.30	1.43	1.56	1.68
-40	50	0.90	1.08	1.25	1.42	1.59	1.75	1.92
	45	0.93	1.10	1.26	1.42	1.57	1.73	1.88
	40	0.95	1.11	1.26	1.40	1.55	1.69	1.84
	35	0.97	1.11	1.25	1.38	1.52	1.66	1.79
	30	0.97	1.10	1.23	1.36	1.49	1.61	1.74
-30	50	0.94	1.11	1.29	1.45	1.62	1.78	1.94
	45	0.96	1.13	1.29	1.44	1.60	1.75	1.90
	40	0.98	1.13	1.28	1.43	1.57	1.71	1.86
	35	0.99	1.13	1.27	1.40	1.54	1.67	1.80
	30	0.99	1.12	1.24	1.37	1.49	1.62	—
-25	50	0.95	1.13	1.30	1.47	1.63	1.79	1.95
	45	0.98	1.14	1.30	1.45	1.61	1.76	1.91
	40	0.99	1.14	1.29	1.43	1.58	1.72	1.86
	35	1.00	1.13	1.27	1.41	1.54	1.67	—
	30	0.99	1.12	1.25	1.37	1.49	1.61	—
-20	50	0.96	1.14	1.31	1.47	1.64	1.61	1.96
	45	0.99	1.15	1.31	1.46	1.61	1.76	1.91
	40	1.00	1.15	1.29	1.44	1.58	1.72	—
	35	1.00	1.14	1.27	1.40	1.53	1.66	—
	30	0.99	1.12	1.24	1.36	1.48	—	—
-15	50	0.97	1.15	1.31	1.48	1.64	1.80	1.96
	45	0.99	1.15	1.31	1.46	1.61	1.76	—
	40	1.00	1.15	1.29	1.43	1.57	1.71	—
	35	1.00	1.13	1.27	1.40	1.53	—	—
	30	0.99	1.11	1.23	1.35	1.47	—	—
-10	50	0.98	1.15	1.32	1.48	1.64	1.80	—
	45	1.00	1.15	1.31	1.46	1.60	1.75	—
	40	1.00	1.14	1.29	1.42	1.56	—	—
	35	0.99	1.13	1.26	1.38	1.51	—	—
	30	0.98	1.10	1.22	1.33	—	—	—
-5	50	0.98	1.15	1.31	1.47	1.63	1.79	—
	45	0.99	1.15	1.30	1.45	1.59	—	—
	40	0.99	1.13	1.27	1.41	1.54	—	—
	35	0.98	1.11	1.24	1.36	—	—	—
	30	0.96	1.08	1.19	1.30	—	—	—
0	50	0.98	1.14	1.31	1.46	1.62	—	—
	45	0.99	1.14	1.29	1.43	1.57	—	—
	40	0.98	1.12	1.25	1.39	—	—	—
	35	0.96	1.09	1.21	1.33	—	—	—
	30	0.93	1.05	1.16	—	—	—	—
5	50	0.97	1.13	1.29	1.44	1.59	—	—
	45	0.97	1.12	1.26	1.40	—	—	—
	40	0.96	1.10	1.23	1.35	—	—	—
	35	0.94	1.06	1.17	—	—	—	—
	30	0.90	1.01	1.11	—	—	—	—
10	50	0.96	1.12	1.27	1.42	—	—	—
	45	0.95	1.10	1.23	1.37	—	—	—
	40	0.93	1.06	1.19	—	—	—	—
	35	0.90	1.02	1.13	—	—	—	—
	30	0.85	0.95	—	—	—	—	—

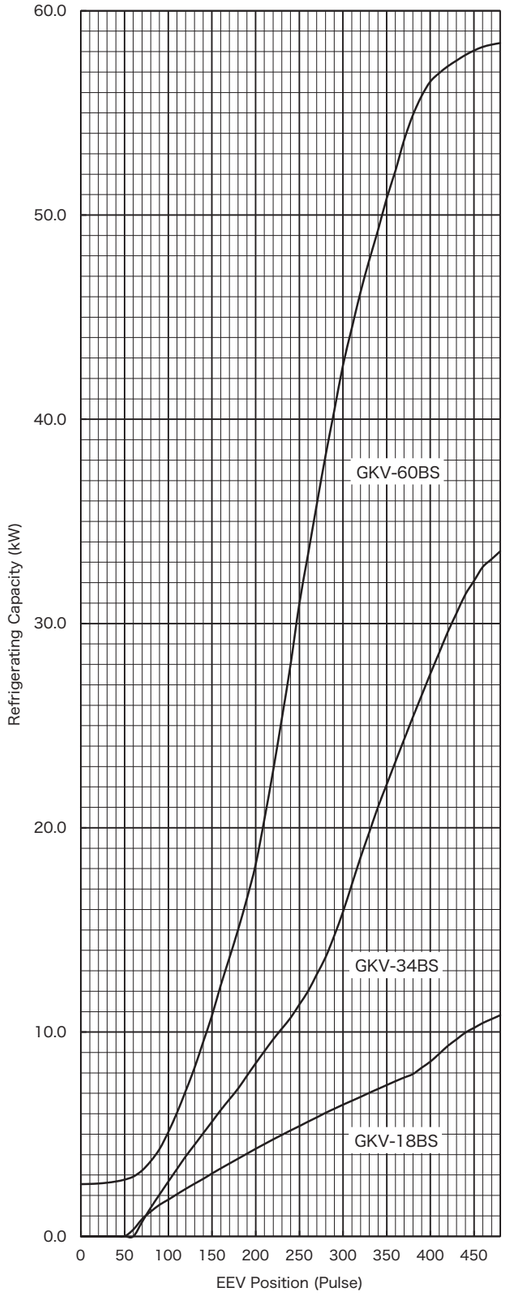
Capacity Chart for GKV

R449A ＜Type GKV＞

Refrigerant : R449A
Evaporating Temp. (ET) : -10℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R449A



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

・ET -60 to -50℃ / CT 40℃ or more
・ET -40 to -15℃ / CT 45℃ or more
・ET -10 to 0℃ / CT 50℃

Correction Factor for R449A　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃) 0	10	20	30	40	50	60
-70	50	0.75	0.93	1.10	1.27	1.44	1.61	1.78
	45	0.79	0.96	1.12	1.28	1.44	1.60	1.75
	40	0.83	0.98	1.13	1.28	1.43	1.58	1.72
	35	0.85	0.99	1.14	1.28	1.41	1.55	1.69
	30	0.87	1.00	1.13	1.26	1.39	1.52	1.65
-60	50	0.80	0.98	1.16	1.33	1.50	1.67	1.83
	45	0.84	1.01	1.17	1.33	1.49	1.65	1.80
	40	0.87	1.03	1.18	1.33	1.48	1.63	1.77
	35	0.89	1.04	1.18	1.32	1.46	1.60	1.73
	30	0.91	1.04	1.17	1.30	1.43	1.56	1.69
-50	50	0.85	1.03	1.21	1.38	1.55	1.71	1.88
	45	0.89	1.06	1.22	1.38	1.54	1.69	1.85
	40	0.91	1.07	1.22	1.37	1.52	1.67	1.81
	35	0.93	1.08	1.22	1.36	1.50	1.63	1.77
	30	0.94	1.07	1.21	1.34	1.47	1.59	1.72
-40	50	0.90	1.08	1.25	1.42	1.59	1.76	1.92
	45	0.93	1.10	1.26	1.42	1.58	1.73	1.89
	40	0.95	1.11	1.26	1.41	1.56	1.70	1.85
	35	0.97	1.11	1.25	1.39	1.53	1.66	1.80
	30	0.97	1.10	1.23	1.36	1.49	1.62	1.74
-30	50	0.93	1.11	1.29	1.46	1.62	1.79	1.95
	45	0.96	1.13	1.29	1.45	1.60	1.76	1.91
	40	0.98	1.13	1.28	1.43	1.58	1.72	1.86
	35	0.99	1.13	1.27	1.41	1.54	1.68	1.81
	30	0.99	1.12	1.25	1.37	1.50	1.62	—
-25	50	0.95	1.13	1.30	1.47	1.64	1.80	1.96
	45	0.97	1.14	1.30	1.46	1.61	1.77	1.92
	40	0.99	1.14	1.29	1.44	1.58	1.73	1.87
	35	1.00	1.14	1.27	1.41	1.54	1.68	—
	30	0.99	1.12	1.25	1.37	1.50	1.62	—
-20	50	0.96	1.14	1.31	1.48	1.64	1.81	1.97
	45	0.98	1.15	1.31	1.46	1.62	1.77	1.92
	40	1.00	1.15	1.30	1.44	1.58	1.72	—
	35	1.00	1.14	1.27	1.41	1.54	1.67	—
	30	0.99	1.12	1.24	1.37	1.49	—	—
-15	50	0.97	1.15	1.32	1.48	1.65	1.81	1.97
	45	0.99	1.15	1.31	1.46	1.62	1.77	—
	40	1.00	1.15	1.29	1.44	1.58	1.72	—
	35	1.00	1.14	1.27	1.40	1.53	—	—
	30	0.99	1.11	1.23	1.36	1.48	—	—
-10	50	0.98	1.15	1.32	1.48	1.64	1.80	—
	45	0.99	1.15	1.31	1.46	1.61	1.76	—
	40	1.00	1.15	1.29	1.43	1.57	—	—
	35	0.99	1.13	1.26	1.39	1.51	—	—
	30	0.98	1.10	1.22	1.34	—	—	—
-5	50	0.98	1.15	1.32	1.48	1.64	1.79	—
	45	0.99	1.15	1.30	1.45	1.60	—	—
	40	0.99	1.14	1.28	1.41	1.55	—	—
	35	0.98	1.11	1.24	1.37	—	—	—
	30	0.96	1.08	1.19	1.31	—	—	—
0	50	0.98	1.15	1.31	1.47	1.62	—	—
	45	0.99	1.14	1.29	1.43	1.58	—	—
	40	0.98	1.12	1.26	1.39	—	—	—
	35	0.96	1.09	1.21	1.34	—	—	—
	30	0.94	1.05	1.16	—	—	—	—
5	50	0.97	1.13	1.29	1.45	1.60	—	—
	45	0.97	1.12	1.27	1.41	—	—	—
	40	0.96	1.10	1.23	1.36	—	—	—
	35	0.94	1.06	1.18	—	—	—	—
	30	0.90	1.01	1.11	—	—	—	—
10	50	0.96	1.12	1.27	1.42	—	—	—
	45	0.95	1.10	1.24	1.37	—	—	—
	40	0.94	1.06	1.19	—	—	—	—
	35	0.90	1.02	1.13	—	—	—	—
	30	0.85	0.96	—	—	—	—	—

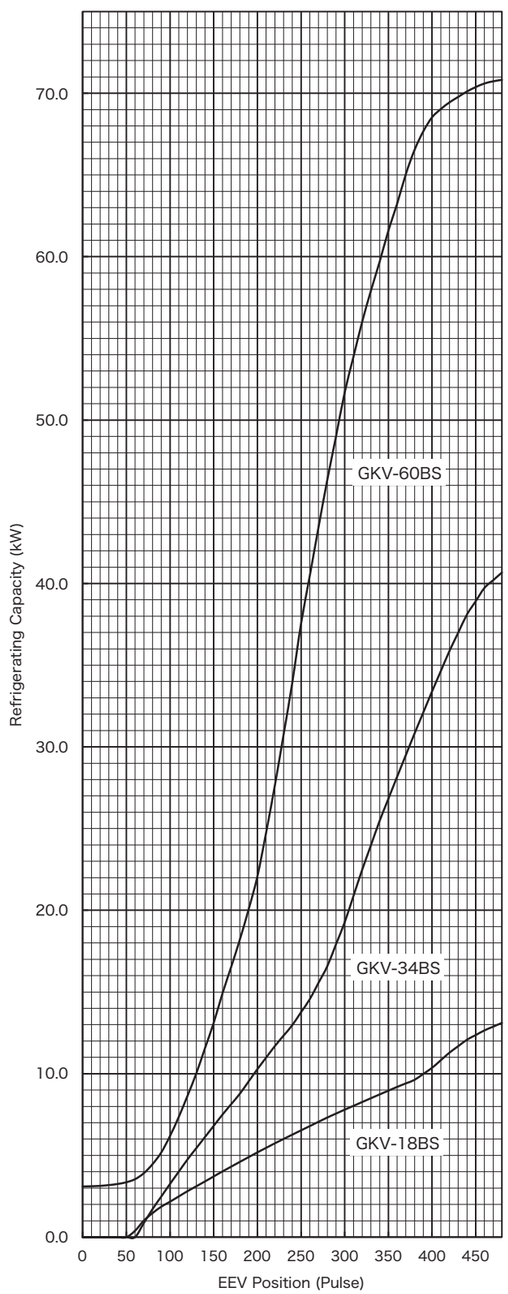
Capacity Chart for GKV

R407H ＜Type GKV＞

Refrigerant : R407H
Evaporating Temp. (ET) : -15℃
Condensing Temp. (CT) : 40℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R407H



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

・ET -70 to -60℃ / CT 40℃ or more
・ET -50 to -15℃ / CT 45℃ or more
・ET -10 to 0℃ / CT 50℃

Correction Factor for R407H　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃) 0	10	20	30	40	50	60
-70	50	0.83	0.98	1.13	1.28	1.42	1.57	1.71
	45	0.85	1.00	1.14	1.27	1.41	1.54	1.68
	40	0.87	1.00	1.13	1.26	1.39	1.52	1.64
	35	0.88	1.00	1.13	1.25	1.36	1.48	1.60
	30	0.88	1.00	1.11	1.22	1.34	1.45	1.56
-60	50	0.87	1.02	1.17	1.32	1.47	1.61	1.75
	45	0.89	1.04	1.18	1.31	1.45	1.58	1.72
	40	0.91	1.04	1.17	1.30	1.43	1.55	1.68
	35	0.91	1.04	1.16	1.28	1.40	1.52	1.64
	30	0.91	1.03	1.14	1.26	1.37	1.48	1.59
-50	50	0.91	1.06	1.21	1.36	1.51	1.65	1.79
	45	0.93	1.07	1.21	1.35	1.49	1.62	1.76
	40	0.94	1.07	1.20	1.33	1.46	1.59	1.71
	35	0.95	1.07	1.19	1.31	1.43	1.55	1.67
	30	0.94	1.06	1.17	1.28	1.39	1.50	1.61
-40	50	0.94	1.10	1.25	1.39	1.54	1.68	1.82
	45	0.96	1.10	1.24	1.38	1.52	1.65	1.78
	40	0.97	1.10	1.23	1.36	1.49	1.61	1.74
	35	0.97	1.09	1.21	1.33	1.45	1.57	1.69
	30	0.96	1.08	1.19	1.30	1.41	1.52	1.63
-30	50	0.97	1.12	1.27	1.42	1.56	1.71	1.85
	45	0.98	1.13	1.27	1.40	1.54	1.67	1.80
	40	0.99	1.12	1.25	1.38	1.50	1.63	1.75
	35	0.99	1.11	1.23	1.35	1.46	1.58	1.69
	30	0.98	1.09	1.20	1.31	1.42	1.52	—
-25	50	0.98	1.13	1.28	1.43	1.57	1.71	1.85
	45	0.99	1.13	1.27	1.41	1.54	1.67	1.80
	40	1.00	1.13	1.25	1.38	1.50	1.63	1.75
	35	0.99	1.11	1.23	1.35	1.46	1.58	—
	30	0.98	1.09	1.20	1.30	1.41	1.52	—
-20	50	0.99	1.14	1.29	1.43	1.58	1.72	1.85
	45	1.00	1.14	1.28	1.41	1.54	1.67	1.80
	40	1.00	1.13	1.26	1.38	1.50	1.62	—
	35	0.99	1.11	1.23	1.34	1.46	1.57	—
	30	0.98	1.08	1.19	1.30	1.40	—	—
-15	50	1.00	1.15	1.29	1.43	1.58	1.71	1.85
	45	1.00	1.14	1.28	1.41	1.54	1.67	—
	40	1.00	1.13	1.25	1.37	1.50	1.62	—
	35	0.99	1.11	1.22	1.33	1.44	—	—
	30	0.97	1.08	1.18	1.28	1.39	—	—
-10	50	1.00	1.15	1.29	1.43	1.57	1.71	—
	45	1.00	1.14	1.27	1.40	1.53	1.66	—
	40	1.00	1.12	1.24	1.36	1.48	—	—
	35	0.98	1.09	1.21	1.32	1.43	—	—
	30	0.96	1.06	1.16	1.26	—	—	—
-5	50	1.00	1.14	1.29	1.42	1.56	1.70	—
	45	1.00	1.13	1.26	1.39	1.52	—	—
	40	0.99	1.11	1.23	1.35	1.46	—	—
	35	0.97	1.08	1.19	1.30	—	—	—
	30	0.94	1.04	1.14	1.24	—	—	—
0	50	0.99	1.13	1.27	1.41	1.54	—	—
	45	0.99	1.12	1.25	1.37	1.49	—	—
	40	0.97	1.09	1.21	1.32	—	—	—
	35	0.95	1.06	1.16	1.27	—	—	—
	30	0.91	1.01	1.10	—	—	—	—
5	50	0.98	1.12	1.26	1.39	1.52	—	—
	45	0.97	1.10	1.22	1.35	—	—	—
	40	0.95	1.07	1.18	1.29	—	—	—
	35	0.92	1.02	1.13	—	—	—	—
	30	0.88	0.97	1.06	—	—	—	—
10	50	0.96	1.10	1.23	1.36	—	—	—
	45	0.95	1.07	1.19	1.31	—	—	—
	40	0.92	1.03	1.14	—	—	—	—
	35	0.88	0.98	1.08	—	—	—	—
	30	0.83	0.92	—	—	—	—	—

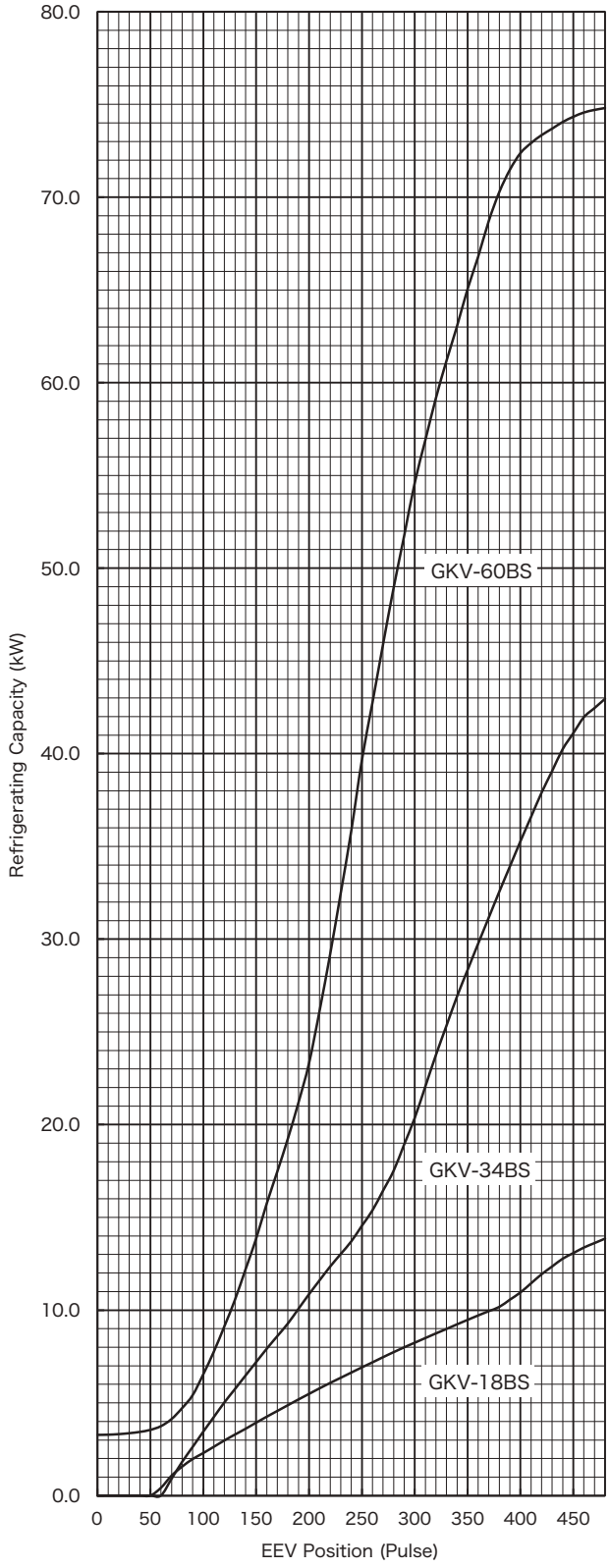
Capacity Chart for GKV

R463A-J ＜Type GKV＞

Refrigerant : R463A-J
Evaporating Temp. (ET) : -20℃
Condensing Temp. (CT) : 30℃
Subcooling : 0℃
Superheat : 5℃

MOPD :
GKV-18BS 3.5 MPa
GKV-34BS 1.77 MPa
GKV-60BS 1.77 MPa

Capacity Chart for R463A-J



＊GKV-34BS, 60BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

- ET -60 to -25℃ / CT 30℃ or more
- ET -20 to -10℃ / CT 35℃ or more
- ET -5 to 5℃ / CT 40℃ or more
- ET 10℃ / CT 45℃ or more

Correction Factor for R463A-J　　Superheat : 5℃

ET (℃)	CT (℃)	Subcooling (℃)						
		0	10	20	30	40	50	60
-70	50	0.78	0.96	1.14	1.31	1.47	1.64	1.80
	45	0.82	0.99	1.16	1.32	1.48	1.63	1.79
	40	0.86	1.02	1.17	1.32	1.47	1.62	1.76
	35	0.89	1.04	1.18	1.32	1.46	1.60	1.73
	30	0.91	1.04	1.18	1.31	1.44	1.57	1.70
-60	50	0.82	1.01	1.18	1.35	1.52	1.69	1.85
	45	0.87	1.04	1.20	1.36	1.52	1.68	1.83
	40	0.90	1.06	1.21	1.36	1.51	1.66	1.81
	35	0.93	1.07	1.22	1.36	1.50	1.64	1.77
	30	0.94	1.08	1.21	1.35	1.48	1.61	1.73
-50	50	0.86	1.05	1.22	1.40	1.56	1.73	1.89
	45	0.90	1.08	1.24	1.40	1.56	1.72	1.87
	40	0.94	1.10	1.25	1.40	1.55	1.69	1.84
	35	0.96	1.11	1.25	1.39	1.53	1.67	1.80
	30	0.97	1.11	1.24	1.37	1.50	1.63	1.76
-40	50	0.90	1.08	1.26	1.43	1.60	1.76	1.93
	45	0.94	1.11	1.27	1.43	1.59	1.75	1.90
	40	0.97	1.12	1.28	1.43	1.57	1.72	1.86
	35	0.99	1.13	1.27	1.41	1.55	1.69	1.82
	30	1.00	1.13	1.26	1.39	1.52	1.65	1.78
-30	50	0.93	1.11	1.29	1.46	1.62	1.79	1.95
	45	0.96	1.13	1.30	1.45	1.61	1.76	1.91
	40	0.99	1.14	1.30	1.44	1.59	1.73	1.88
	35	1.00	1.15	1.29	1.43	1.56	1.70	1.83
	30	1.01	1.14	1.27	1.40	1.53	1.65	—
-25	50	0.94	1.12	1.30	1.47	1.63	1.79	1.95
	45	0.97	1.14	1.30	1.46	1.62	1.77	1.92
	40	1.00	1.15	1.30	1.45	1.59	1.73	1.88
	35	1.01	1.15	1.29	1.43	1.56	1.69	—
	30	1.01	1.14	1.27	1.40	1.52	1.65	—
-20	50	0.95	1.13	1.30	1.47	1.63	1.80	1.95
	45	0.98	1.15	1.31	1.46	1.62	1.77	1.92
	40	1.00	1.15	1.30	1.45	1.59	1.73	—
	35	1.01	1.15	1.29	1.42	1.56	1.69	—
	30	1.01	1.14	1.27	1.39	1.51	—	—
-15	50	0.95	1.13	1.30	1.47	1.63	1.79	1.95
	45	0.98	1.15	1.31	1.46	1.61	1.76	—
	40	1.00	1.15	1.30	1.44	1.58	1.72	—
	35	1.01	1.15	1.28	1.41	1.54	—	—
	30	1.00	1.13	1.25	1.38	1.50	—	—
-10	50	0.95	1.13	1.30	1.47	1.63	1.79	—
	45	0.98	1.14	1.30	1.45	1.60	1.75	—
	40	1.00	1.14	1.29	1.43	1.57	—	—
	35	1.00	1.14	1.27	1.40	1.53	—	—
	30	0.99	1.12	1.24	1.36	—	—	—
-5	50	0.95	1.13	1.30	1.46	1.62	1.77	—
	45	0.98	1.14	1.29	1.44	1.59	—	—
	40	0.99	1.13	1.28	1.41	1.55	—	—
	35	0.99	1.12	1.25	1.38	—	—	—
	30	0.97	1.10	1.21	1.33	—	—	—
0	50	0.95	1.12	1.28	1.44	1.60	—	—
	45	0.97	1.12	1.28	1.42	1.57	—	—
	40	0.97	1.12	1.25	1.39	—	—	—
	35	0.97	1.10	1.22	1.35	—	—	—
	30	0.95	1.07	1.18	—	—	—	—
5	50	0.94	1.11	1.27	1.42	1.57	—	—
	45	0.95	1.11	1.25	1.40	—	—	—
	40	0.95	1.09	1.23	1.36	—	—	—
	35	0.94	1.07	1.19	—	—	—	—
	30	0.92	1.03	1.14	—	—	—	—
10	50	0.92	1.09	1.24	1.39	—	—	—
	45	0.93	1.08	1.22	1.36	—	—	—
	40	0.93	1.06	1.19	—	—	—	—
	35	0.91	1.03	1.14	—	—	—	—
	30	0.87	0.98	—	—	—	—	—