COPPBAR™ Busbars - AC/DC Current Ratings (20% Copper Vol.)

Size	Corner Radius	Cross Sectional Area	Weight (Approx)	DC Resistance at 20ºC	DC Resistance at 85ºC	Current Rating (Amps): 50ºC Rise Over 35ºC Ambient Temp. (No. of Buses)							
						n =1		n =2		n =3		n =4	
mm	mm	mm²	kg/m	µOhm/m	µOhm/m	DC	AC	DC	AC	DC	AC	DC	AC
30x3	0.8	89.45	0.352	288	364	336	336	609	609				
40x3	0.8	119.45	0.471	216	272	431	430	771	768				
50x3	0.8	149.45	0.589	172	218	521	517	923	918				
60x3	0.8	179.45	0.707	144	181	608	602	1063	1056				
30x4	0.8	119.45	0.471	215	271	395	395	724	723				
40x4	0.8	159.45	0.628	161	203	506	505	917	915				
50x4	0.8	199.45	0.786	128	162	613	609	1098	1092				
60x4	0.8	239.45	0.943	107	135	716	710	1268	1260				
80x4	0.8	319.45	1.259	80	101	814	802	1427	1417				
30x5	0.8	149.45	0.589	172	216	449	449	830	828	1210	1198	1590	1567
40x5	0.8	199.45	0.786	131	166	573	572	1047	1039	1518	1496	1987	1934
50x5	0.8	249.45	0.983	105	132	692	689	1252	1238	1809	1774	2349	2260
60x5	0.8	299.45	1.180	87	110	807	804	1447	1429	2084	2036	2706	2582
80x5	0.8	399.45	1.574	66	83	917	907	1629	1603	2345	2283	3023	2865
100x5	0.8	499.45	1.968	52	66	1024	1008	1801	1769	2593	2517	3326	3131
30x6	0.8	179.45	0.707	148	187	501	501	933	928	1364	1348	1794	1759
40x6	0.8	239.45	0.943	110	139	636	635	1170	1158	1701	1669	2230	2094
50x6	0.8	299.45	1.180	87	111	769	765	1401	1379	2029	1968	2655	2520
60x6	0.8	359.45	1.416	74	93	903	897	1632	1596	2355	2258	3077	2867
80x6	0.8	479.45	1.889	55	69	1164	1147	2084	2036	3010	2878	3857	3577
100x6	0.8	599.45	2.362	44	56	1419	1381	2518	2462	3637	3469	4632	4297
120x6	0.8	719.45	2.835	37	46	1667	1585	2930	2868	4230	4026	5259	4869
30x8	1.2	238.76	0.941	110	138	592	591	1117	1104	1641	1609	2165	2091
40x8	1.2	318.76	1.256	82	104	748	745	1392	1390	2033	1964	2673	2521
50x8	1.2	398.76	1.571	66	82	902	894	1659	1624	2413	2390	3166	2907
60x8	1.2	478.76	1.886	55	68	1053	1040	1921	1853	2785	2591	3646	3256
80x8	1.2	638.76	2.517	41	51	1349	1323	2434	2304	3509	3131	4581	4143
100x8	1.2	798.76	3.147	32	41	1639	1594	2933	2728	4213	3612	5488	4439
120x8	1.2	958.76	3.778	27	34	1920	1840	3406	3164	4890	3780	6079	4389
40x10	1.2	398.76	1.571	67	84	858	851	1614	1572	2367	2251	3120	2871
50x10	1.2	498.76	1.965	53	67	1029	1016	1914	1842	2794	2598	3673	3265
60x10	1.2	598.76	2.359	44	55	1198	1178	2207	2097	3210	2902	4212	3621
80x10	1.2	798.76	3.147	32	41	1529	1488	2779	2580	4021	3452	5259	4263
100x10	1.2	998.76	3.935	26	33	1854	1786	3339	3035	4809	3948	6276	4866
120x10	1.2	1198.76	4.723	22	27	2174	2074	3887	3467	5582	4417	7271	5431
40x12	1.2	478.76	1.886	55	70	957	946	1818	1752	2677	2496	3536	3166
50x12	1.2	598.76	2.359	44	55	1144	1125	2148	2038	3148	2844	4146	3564
60x12	1.2	718.76	2.832	36	46	1329	1299	2469	2307	3606	3159	4740	3926
80x12	1.2	958.76	3.778	27	35	1508	1452	2467	2207	4012	3342	5058	1220
100x12	1.2	1198.76	4.723	22	27	2048	1952	3712	3286	5362	4243	7008	5236
120x12	1.2	1438.76	5.669	19	22	2399	2259	4314	3742	6210	4736	8100	5829
40x15	1.2	598.76	2.359	44	55	1100	1081	2115	2005	3130	2828	4143	3563
50x15	1.2	748.76	2.950	35	44	1310	1278	2486	2306	3660	3182	4834	3972
60x15	1.2	898.76	3.541	29	36	1516	1466	2848	2586	4177	3505	5504	4359
80x15	1.2	1198.76	4.723	22	27	1924	1834	3574	3314	5228	4428	6518	4958
100x15	1.2	1498.76	5.905	18	22	2320	2200	4256	3796	6182	5222	7699	5689
120x15	1.2	1798.76	7.087	15	18	2712	2507	4915	4095	7101	6029	9281	6375

Note:

Reclculation graphs should be used for design conditions different than those stated. For compatibility, recalculation graphs computed for the same base

The calculated values on this data sheet are based on the following parameters:

Ambient Temperature: 35℃

Busbar temperature: 85℃

Temperature rise: 50℃

n = number of bars in parallel

Current ratings assums still but unconfined air, with busbars mounted on edge

Current ratings are based on "Temperature Rise of Busbars"

For multiple bars arrangement, the space between the bars is equal to busbar thickness

COPPBAR™ Busbars - AC/DC Current Ratings (15% Copper vol.)

Size	Corner Radius	Cross Sectional Area	Weight (Approx)	DC Resistance at 20°C	DC Resistance at 85°C	Current Rating (Amps): 50°C Rise Over 35°C Ambient Temp. (No. of Buses)							
						n =1		n =2		n =3		n =4	
mm	mm	mm²	kg/m	µOhm/m	µOhm/m	DC	AC	DC	AC	DC	AC	DC	AC
30x3	0.8	89.45	0.325	296	374	327	327	592	592				
40x3	0.8	119.45	0.434	222	280	419	418	750	747				
50x3	0.8	149.45	0.543	177	224	507	503	897	892				
60x3	0.8	179.45	0.651	148	186	591	585	1034	1027				
30x4	0.8	119.45	0.434	221	279	384	384	704	703				
40x4	0.8	159.45	0.579	165	209	492	491	892	890				
50x4	0.8	199.45	0.724	132	167	596	592	1068	1062				
60x4	0.8	239.45	0.869	110	139	696	690	1233	1225				
80x4	0.8	319.45	1.160	82	104	792	780	1388	1378				
30x5	0.8	149.45	0.543	176	222	437	437	807	805	1177	1165	1546	1523
40x5	0.8	199.45	0.724	135	170	557	556	1018	1010	1476	1454	1932	1879
50x5	0.8	249.45	0.906	108	136	673	670	1218	1204	1760	1725	2285	2196
60x5	0.8	299.45	1.087	90	113	784	781	1407	1389	2026	1978	2632	2508
80x5	0.8	399.45	1.450	67	85	892	882	1585	1559	2281	2219	2940	2782
100x5	0.8	499.45	1.813	54	68	996	980	1751	1719	2522	2446	3234	3039
30x6	0.8	179.45	0.651	152	192	487	487	908	903	1326	1310	1745	1710
40x6	0.8	239.45	0.869	113	143	618	617	1138	1126	1654	1622	2169	2094
50x6	0.8	299.45	1.087	90	114	748	744	1362	1340	1973	1912	2582	2447
60x6	0.8	359.45	1.305	76	95	878	872	1587	1551	2291	2194	2992	2782
80x6	0.8	479.45	1.740	57	71	1132	1115	2026	1978	2928	2796	3751	3471
100x6	0.8	599.45	2.176	46	57	1380	1342	2449	2393	3537	3369	4505	4170
120x6	0.8	719.45	2.612	38	48	1621	1539	2849	2787	4114	3910	5115	4725
30x8	1.2	238.76	0.867	113	142	575	574	1086	1073	1596	1564	2105	2031
40x8	1.2	318.76	1.157	85	107	727	724	1353	1351	1978	1909	2600	2448
50x8	1.2	398.76	1.448	67	84	877	869	1614	1579	2347	2324	3079	2820
60x8	1.2	478.76	1.738	56	70	1024	1011	1869	1801	2708	2514	3546	3156
80x8	1.2	638.76	2.319	42	52	1312	1286	2367	2237	3413	3035	4455	4017
100x8	1.2	798.76	2.900	33	42	1594	1549	2853	2648	4097	3496	5338	4289
120x8	1.2	958.76	3.480	28	35	1867	1787	3313	3071	4756	3646	5912	4222
40x10	1.2	398.76	1.448	69	86	835	828	1570	1528	2302	2186	3034	2785
50x10	1.2	498.76	1.811	55	69	1001	988	1861	1789	2717	2521	3573	3165
60x10	1.2	598.76	2.174	45	57	1165	1145	2146	2036	3122	2814	4096	3505
80x10	1.2	798.76	2.900	33	42	1487	1446	2703	2504	3911	3342	5115	4119
100x10	1.2	998.76	3.626	27	34	1803	1735	3247	2943	4677	3816	6104	4694
120x10	1.2	1198.76	4.352	22	28	2114	2014	3780	3360	5428	4263	7071	5231
40x12	1.2	478.76	1.738	57	72	931	920	1768	1702	2603	2422	3439	3069
50x12	1.2	598.76	2.174	45	57	1113	1094	2089	1979	3061	2757	4032	3450
60x12	1.2	718.76	2.609	37	47	1293	1263	2402	2240	3507	3060	4610	3796
80x12	1.2	958.76	3.480	28	36	1466	1410	2399	2139	3902	3232	4919	1220
100x12	1.2	1198.76	4.352	22	28	1992	1896	3611	3185	5215	4096	6816	5044
120x12	1.2	1438.76	5.223	19	23	2334	2194	4196	3624	6039	4565	7878	5607
40x15	1.2	598.76	2.174	45	57	1070	1051	2057	1947	3044	2742	4030	3450
50x15	1.2	748.76	2.718	36	45	1274	1242	2418	2238	3560	3082	4702	3840
60x15	1.2	898.76	3.263	30	37	1475	1425	2770	2508	4062	3390	5353	4208
80x15	1.2	1198.76	4.352	23	28	1871	1781	3476	3216	5085	4285	6339	4779
100x15	1.2	1498.76	5.441	18	22	2257	2137	4139	3679	6012	5052	7487	5477
120x15	1.2	1798.76	6.530	15	19	2638	2433	4780	3960	6906	5834	9027	6121

Note:

Reclculation graphs should be used for design conditions different than those stated. For compatibility, recalculation graphs computed for the same base parameters must be used with the tabulated values.

The calculated values on this data sheet are based on the following parameters:

Ambient Temperature: 35℃
Busbar temperature: 85℃
Temperature rise: 50℃
n = number of bars in parallel

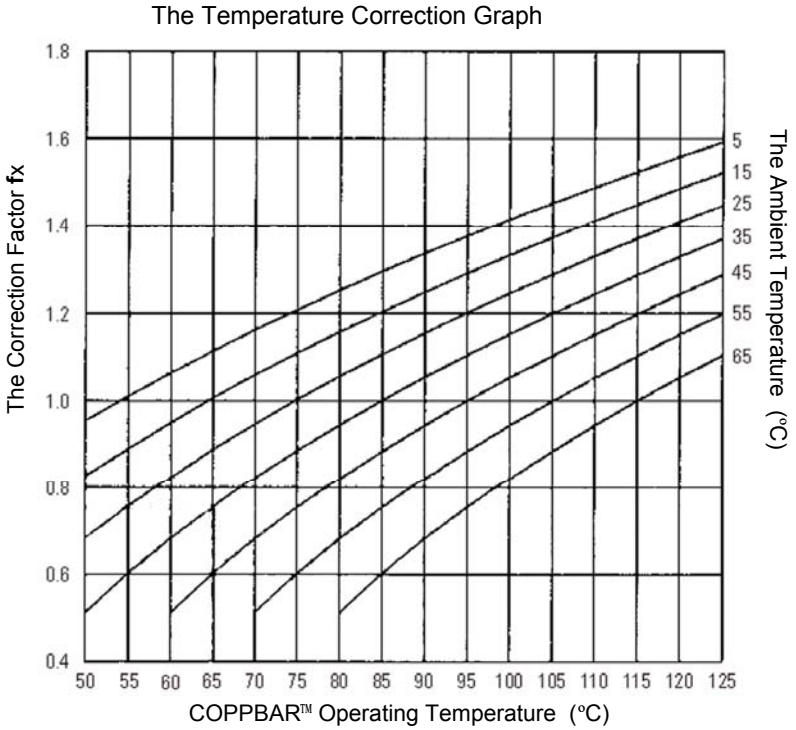
Current ratings assums still but unconfined air, with busbars mounted on edge.
Current ratings are based on "Temperature Rise of Busbars"
For multiple bars arrangement, the space between the bars is equal to busbar thickness

The Temperature Corraction Graph

Alternative Temperature Conditions

Obtain the temperature correction factor Fx by following:

1. Locate the new ambient temperature
2. Locate the COPPBAR™* operating temperature on the x-axis
3. Read out the temperature correction factor Fx from the y-axis



The temperature correction factor fx could be determined from the graph in order to correct the COPPBAR™ current ratings for diferent design parameters. The following is a sample:

Specification	80 x 10
The new ambient temperature °C	35
The new COPPBAR™ temperature °C	65
DC current (from table) I_{dc}	1529
AC current (from table) I_{ac}	1488
The temperature correction factor (from graph) f_x	0.75
New DC current I_{dc}	1147
New AC current I_{ac}	1116

* COPPBAR™ - Trademark owned by ACM, the isothermal produced copper clad aluminum composite busbars.