

Table B.310.7 {Detail 1 - One Circuit, 3-1/c in Single Duct}

0-2000 Volt Cable, Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity = 60, 90 or 120, Concrete Thermal resistivity (RHO) = 85, Load Factor = 50% or 100%, Conductor Temperature = 75C (167F).

Size (AWG or kcmil)	1 Electrical Duct (Fig. B-310-2, Detail 1)																		
	Types RHW, THHW, THW THWN, XHHW, USE																		
	COPPER						ALUMINUM OR COPPER-CLAD ALUMINUM												
	NEC			AmpCalc			% Deviation			NEC			AmpCalc			% Deviation			
	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	
60	90	120	60	90	120	60	90	120	60	90	120	60	90	120	60	90	120		
LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF		
50	100	100	50	100	100	50	100	100	50	100	100	50	100	100	50	100	100		
8	63	58	57	63.0	58.2	56.7	0.0%	0.3%	-0.5%	8	49	45	44	49.1	45.4	44.2	0.2%	0.9%	0.5%
6	84	77	75	83.7	76.7	74.5	-0.4%	-0.4%	-0.7%	6	66	60	58	65.2	59.8	58.1	-1.2%	-0.3%	0.2%
4	111	100	98	109.9	100.0	97.0	-1.0%	0.0%	-1.0%	4	86	78	76	85.6	78.0	75.6	-0.5%	0.0%	-0.5%
3	129	116	113	127.5	115.4	111.7	-1.2%	-0.5%	-1.2%	3	101	91	89	99.4	89.9	87.1	-1.6%	-1.2%	-2.1%
2	147	132	128	146.3	131.9	127.5	-0.5%	-0.1%	-0.4%	2	115	103	100	114.0	102.8	99.4	-0.9%	-0.2%	-0.6%
1	171	153	148	169.8	152.1	146.8	-0.7%	-0.6%	-0.8%	1	133	119	115	132.4	118.6	114.4	-0.5%	-0.3%	-0.5%
1/0	197	175	169	195.1	174.0	167.7	-1.0%	-0.6%	-0.8%	1/0	153	136	132	152.1	135.6	130.8	-0.6%	-0.3%	-0.9%
2/0	226	200	193	224.2	198.9	191.5	-0.8%	-0.5%	-0.8%	2/0	176	156	151	174.9	155.2	149.4	-0.6%	-0.5%	-1.1%
3/0	260	228	220	257.7	227.5	218.7	-0.9%	-0.2%	-0.6%	3/0	203	178	172	201.1	177.5	170.6	-0.9%	-0.3%	-0.8%
4/0	301	263	253	298.2	261.4	250.8	-0.9%	-0.6%	-0.9%	4/0	235	205	198	233.0	204.1	195.9	-0.9%	-0.4%	-1.1%
250	334	290	279	331.0	288.6	276.5	-0.9%	-0.5%	-0.9%	250	261	227	218	258.8	225.6	216.2	-0.8%	-0.6%	-0.8%
300	373	321	308	369.0	320.1	306.3	-1.1%	-0.3%	-0.6%	300	293	252	242	289.0	250.7	239.9	-1.4%	-0.5%	-0.9%
350	409	351	337	404.2	349.1	333.7	-1.2%	-0.5%	-1.0%	350	321	276	265	317.2	274.0	261.9	-1.2%	-0.7%	-1.2%
400	442	376	361	437.1	376.1	359.1	-1.1%	0.0%	-0.5%	400	349	297	284	343.8	295.8	282.4	-1.5%	-0.4%	-0.6%
500	503	427	409	496.8	424.5	404.7	-1.2%	-0.6%	-1.1%	500	397	338	323	392.9	335.7	320.0	-1.0%	-0.7%	-0.9%
600	552	468	447	553.9	469.9	447.2	0.3%	0.4%	0.0%	600	446	373	356	440.2	373.5	355.4	-1.3%	0.1%	-0.2%
700	602	509	486	601.6	507.9	482.7	-0.1%	-0.2%	-0.7%	700	488	408	389	481.4	406.4	386.3	-1.4%	-0.4%	-0.7%
750	632	529	505	623.7	525.3	499.1	-1.3%	-0.7%	-1.2%	750	508	425	405	500.9	421.9	400.8	-1.4%	-0.7%	-1.0%
800	654	544	520	644.7	541.8	514.5	-1.4%	-0.4%	-1.1%	800	530	439	418	519.6	436.7	414.7	-2.0%	-0.5%	-0.8%
900	692	575	549	683.6	572.2	542.8	-1.2%	-0.5%	-1.1%	900	563	466	444	555.1	464.6	440.8	-1.4%	-0.3%	-0.7%
1000	730	605	576	718.7	599.5	568.2	-1.5%	-0.9%	-1.4%	1000	597	494	471	587.9	490.4	464.8	-1.5%	-0.7%	-1.3%
Average Deviation =			Average Deviation =			Average Deviation =			Average Deviation =			Average Deviation =			Average Deviation =				

AmpCalc References:

AmpCalc Library = IEERUB_2, AmpCalc Volume = IEERUB1, 1 kV non-shielded, Duct library = NEC_PVC, 5" duct.

Table B.310.7 {Detail 2 - Three Circuits, 3-1/c in Each Duct}

0-2000 Volt Cable, Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity = 60, 90 or 120, Concrete Thermal resistivity (RHO) = 85, Load Factor = 50% or 100%, Conductor Temperature = 75C (167F).

Size (AWG or kcmil)	3 Electrical Ducts (Fig. B-310-2, Detail 2)																		
	Types RHW, THHW, THW THWN, XHHW, USE																		
	COPPER						ALUMINUM OR COPPER-CLAD ALUMINUM												
	NEC			AmpCalc			% Deviation			NEC			AmpCalc			% Deviation			
	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	
60	90	120	60	90	120	60	90	120	60	90	120	60	90	120	60	90	120		
LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF		
50	100	100	50	100	100	50	100	100	50	100	100	50	100	100	50	100	100		
8	61	51	49	60.4	50.9	48.4	-1.0%	-0.2%	-1.2%	8	47	40	38	47.1	39.7	37.8	0.2%	-0.7%	-0.5%
6	80	67	63	80.0	66.4	63.0	0.0%	-0.9%	0.0%	6	63	52	49	62.3	51.7	49.1	-1.1%	-0.6%	0.2%
4	105	86	81	104.6	85.8	81.2	-0.4%	-0.2%	0.2%	4	79	67	63	81.5	66.8	63.3	3.2%	-0.3%	0.5%
3	122	99	94	121.0	98.2	92.8	-0.8%	-0.8%	-1.3%	3	83	77	73	94.3	76.6	72.3	13.6%	-0.5%	-1.0%
2	139	112	106	138.5	111.7	105.4	-0.4%	-0.3%	-0.6%	2	108	87	82	107.9	87.1	82.1	-0.1%	0.1%	0.1%
1	161	128	121	160.2	127.9	120.3	-0.5%	-0.1%	-0.6%	1	126	100	94	124.8	99.7	93.8	-1.0%	-0.3%	-0.2%
1/0	185	146	137	183.6	145.4	136.7	-0.8%	-0.4%	-0.2%	1/0	144	114	107	143.1	113.4	106.6	-0.6%	-0.5%	-0.4%
2/0	212	166	156	210.4	165.4	155.1	-0.8%	-0.4%	-0.6%	2/0	165	130	121	164.1	129.0	121.0	-0.5%	-0.8%	0.0%
3/0	243	189	177	241.1	187.9	176.0	-0.8%	-0.6%	-0.6%	3/0	189	147	138	188.1	146.7	137.4	-0.5%	-0.2%	-0.4%
4/0	280	215	201	277.8	214.2	200.3	-0.8%	-0.4%	-0.3%	4/0	219	168	157	217.0	167.3	156.4	-0.9%	-0.4%	-0.4%
250	310	236	220	307.5	235.2	219.5	-0.8%	-0.3%	-0.2%	250	242	185	172	240.4	183.9	171.7	-0.7%	-0.6%	-0.2%
300	344	260	242	341.8	259.5	241.9	-0.6%	-0.2%	0.0%	300	272	204	190	267.7	203.3	189.5	-1.6%	-0.3%	-0.3%
350	377	283	264	373.5	281.8	262.4	-0.9%	-0.4%	-0.6%	350	296	222	207	293.1	221.2	205.9	-1.0%	-0.4%	-0.5%
400	394	302	280	402.9	302.4	281.3	2.3%	0.1%	0.5%	400	321	238	220	316.9	237.8	221.2	-1.3%	-0.1%	0.5%
500	460	341	316	456.1	339.1	314.9	-0.8%	-0.6%	-0.3%	500	364	270	250	360.7	268.1	249.0	-0.9%	-0.7%	-0.4%
600	511	371	343	506.4	372.7	345.6	-0.9%	0.5%	0.8%	600	408	296	274	402.5	296.2	274.7	-1.3%	0.1%	0.3%
700	553	402	371	548.5	401.0	371.4	-0.8%	-0.2%	0.1%	700	443	321	297	438.9	320.9	297.2	-0.9%	0.0%	0.1%
750	574	417	385	567.8	413.9	383.1	-1.1%	-0.7%	-0.5%	750	461	334	309	456.0	332.4	307.7	-1.1%	-0.5%	-0.4%
800	597	428	395	586.2	426.0	394.2	-1.8%	-0.5%	-0.2%	800	481	344	318	472.5	343.4	317.7	-1.8%	-0.2%	-0.1%
900	628	450	415	620.1	448.3	414.4	-1.3%	-0.4%	-0.1%	900	510	365	337	503.5	364.0	336.5	-1.3%	-0.3%	-0.1%
1000	659	472	435	650.6	468.1	432.4	-1.3%	-0.8%	-0.6%	1000	538	385	355	532.2	382.9	353.7	-1.1%	-0.5%	-0.4%
			Average Deviation =			-0.7% -0.4% -0.3%						Average Deviation =			0.0% -0.4% -0.2%				

AmpCalc References:

AmpCalc Library = IEERUB_2, AmpCalc Volume = IEERUB1, 1 kV non-shielded, Duct library = NEC_PVC, 5" duct.

Table B.310.7 {Detail 3 - Six Circuits, 3-1/c in Each Duct}

0-2000 Volt Cable, Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity = 60, 90 or 120, Concrete Thermal resistivity (RHO) = 85, Load Factor = 50% or 100%, Conductor Temperature = 75C (167F).

Size (AWG or kcmil)	6 Electrical Ducts (Fig. B-310-2, Detail 3)																		
	Types RHW, THHW, THW THWN, XHHW, USE																		
	COPPER						ALUMINUM OR COPPER-CLAD ALUMINUM												
	NEC			AmpCalc			% Deviation			NEC			AmpCalc			% Deviation			
	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	RHO	
60	90	120	60	90	120	60	90	120	60	90	120	60	90	120	60	90	120		
LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF		
50	100	100	50	100	100	50	100	100	50	100	100	50	100	100	50	100	100		
8	57	44	41	57.1	43.6	40.7	0.2%	-0.9%	-0.7%	8	45	34	32	44.5	34.0	31.7	-1.1%	0.0%	-0.9%
6	75	56	53	75.1	56.3	52.4	0.1%	0.5%	-1.1%	6	59	44	41	58.6	43.9	40.8	-0.7%	-0.2%	-0.5%
4	98	73	67	97.8	72.3	67.0	-0.2%	-1.0%	0.0%	4	77	57	52	76.2	56.3	52.2	-1.0%	-1.2%	0.4%
3	113	83	77	112.7	82.3	76.2	-0.3%	-0.8%	-1.0%	3	84	65	60	87.8	64.1	59.4	4.5%	-1.4%	-1.0%
2	129	93	86	128.7	93.2	86.2	-0.2%	0.2%	0.2%	2	101	73	67	100.3	72.7	67.2	-0.7%	-0.4%	0.3%
1	149	106	98	148.2	106.1	97.9	-0.5%	0.1%	-0.1%	1	116	83	77	115.6	82.7	76.3	-0.3%	-0.4%	-0.9%
1/0	170	121	111	169.4	120.2	110.7	-0.4%	-0.7%	-0.3%	1/0	133	94	87	132.1	93.7	86.3	-0.7%	-0.3%	-0.8%
2/0	194	136	126	193.5	136.0	125.2	-0.3%	0.0%	-0.6%	2/0	151	106	98	150.9	106.1	97.6	-0.1%	0.1%	-0.4%
3/0	222	154	142	221.0	154.0	141.5	-0.5%	0.0%	-0.4%	3/0	173	121	111	172.5	120.2	110.4	-0.3%	-0.7%	-0.5%
4/0	255	175	161	253.6	174.6	160.1	-0.5%	-0.2%	-0.6%	4/0	199	137	126	198.1	136.3	125.1	-0.5%	-0.5%	-0.7%
250	281	192	176	279.7	190.9	174.9	-0.5%	-0.6%	-0.6%	250	220	150	137	218.7	149.2	136.7	-0.6%	-0.5%	-0.2%
300	310	210	192	310.0	209.9	192.1	0.0%	0.0%	0.1%	300	245	165	151	242.8	164.4	150.4	-0.9%	-0.4%	-0.4%
350	340	228	209	337.8	227.3	207.8	-0.6%	-0.3%	-0.6%	350	266	179	164	265.1	178.3	163.1	-0.3%	-0.4%	-0.5%
400	368	243	223	363.6	243.2	222.2	-1.2%	0.1%	-0.4%	400	288	191	174	286.0	191.3	174.8	-0.7%	0.2%	0.5%
500	412	273	249	410.0	271.6	247.8	-0.5%	-0.5%	-0.5%	500	326	216	197	324.2	214.8	195.9	-0.6%	-0.6%	-0.6%
600	457	296	270	453.2	297.2	270.8	-0.8%	0.4%	0.3%	600	365	236	215	360.2	236.2	215.3	-1.3%	0.1%	0.1%
700	492	319	291	489.4	318.8	290.3	-0.5%	-0.1%	-0.2%	700	394	255	232	391.6	255.1	232.3	-0.6%	0.0%	0.1%
750	509	330	301	506.0	328.7	299.1	-0.6%	-0.4%	-0.6%	750	409	265	241	406.4	263.9	240.2	-0.6%	-0.4%	-0.3%
800	527	338	308	521.7	337.9	307.4	-1.0%	0.0%	-0.2%	800	427	273	247	420.5	272.3	247.8	-1.5%	-0.3%	0.3%
900	554	355	323	550.6	354.8	322.6	-0.6%	-0.1%	-0.1%	900	450	288	261	447.1	288.1	261.9	-0.6%	0.0%	0.3%
1000	581	372	338	576.4	369.8	336.0	-0.8%	-0.6%	-0.6%	1000	475	304	276	471.5	302.5	274.9	-0.7%	-0.5%	-0.4%
Average Deviation =			-0.5%	-0.2%	-0.4%	Average Deviation =			-0.4%	-0.4%	-0.3%								

AmpCalc References:

AmpCalc Library = IEERUB_2, AmpCalc Volume = IEERUB1, 1 kV non-shielded, Duct library = NEC_PVC, 5" duct.