

Voltage Drop Tables



The Following information is provided to assist in planning layouts for emergency lighting systems. The National Electrical Code® limits voltage drop to a maximum of 5% of nominal. Thus, circuit runs must be of sufficient size to maintain operating voltage when remote fixtures are connected to the emergency lighting equipment. The tables below show the maximum distance the emergency remote can be mounted from the main battery source, wire gauge, and catalog of the remote used.

Catalog Description	Maximum from Battery Source(Ft)*					
	3.6V Battery System					
	Wet Location/Outdoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
ERE SGL WP RD	63	100	158	252	400	
ERE T WP RD	31	50	79	126	200	
ERE SGL WP SQ	47	75	119	189	300	
ERE SGTL WP SQ	23	37	59	94	150	
Light Commerical/Indoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG	
ERE SGL RD	63	100	158	252	400	
ERE T RD	31	50	79	126	200	
ERE SGL SQ	47	75	119	189	300	
ERE T SQ	23	37	59	94	150	

**Assuming a Homerun Connection from battery source. Considered 5% of battery nominal voltage drop across total wire length, per NEC.*

Catalog Description	Maximum from Battery Source(Ft)*					
	6V Battery System					
	Wet Location/Outdoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
ERE SGL WP SQ	78	125	198	315	501	
ERE T WP SQ	39	62	99	157	250	
Light Commerical/Indoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG	
ERE SGL SQ	78	125	198	315	501	
ERE T SQ	39	62	99	157	250	
ELMRE LP220L SGL	63	100	160	254	404	
ELMRE LP220L T	36	57	90	143	228	
ELMRE SP640L SGL	22	36	57	90	143	
ELMRE SP640L T	12	19	30	48	77	

**Assuming a Homerun Connection from battery source. Considered 5% of battery nominal voltage drop across total wire length, per NEC.*

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Maximum from Battery Source(Ft)*					
9.6V Battery System					
Wet Location/Outdoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
ERE SGL WP SQ	47	75	119	189	301
ERE T WP SQ	24	38	60	95	150
ELMRW LP220L SGL	65	105	175	275	435
ELMRW LP220L T	37	58	92	147	233
ELMRW SP640L SGL	23	35	58	90	145
ELMRW SP640L T	13	20	33	50	80
AFB OELR WT	52	82	130	207	330
AFF OELR WT	12	19	30	48	77
AFF OELR FCT	12	19	30	48	77
Light Commerical/Indoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
ERE SGL SQ	47	75	119	189	301
ERE T SQ	24	38	60	95	150
ELMRE LP220L SGL	65	105	175	275	435
ELMRE LP220L T	37	58	92	147	233
ELMRE SP640L SGL	23	35	58	90	145
ELMRE SP640L T	13	20	33	50	80
ELMRE SP1100L SGL	38	60	95	150	239
ELMRE SP1100L T	18	29	46	73	116
Light / Heavy Industrial	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
INDRE SP640L SGL	23	35	58	90	145
INDRE SP640L T	13	20	33	50	80
INDRE SP1100L SGL	38	60	95	150	239
INDRE SP1100L T	18	29	46	73	116
INDRE SP2200L SGL	11	18	28	45	71
INDRE SP2200L T	10	16	25	40	63
Heavy Industrial/Demanding	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
EXTLRE SP640L SGL	23	35	58	90	145
EXTLRE SP640L T	13	20	33	50	80
EXTLRE SP1100L SGL	38	60	95	150	239
EXTLRE SP1100L T	18	29	46	73	116
EXTLRE SP2200L SGL	11	18	28	45	71
EXTLRE SP2200L T	10	16	25	40	63

Catalog Description

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Catalog Description	Maximum from Battery Source(Ft)*				
	12.8V Battery System				
	Wet Location/Outdoor	18 AWG	16 AWG	14 AWG	12 AWG
ELMRW LP220L SGL	248	394	626	995	1582
ELMRW LP220L T	140	222	353	561	892
ELMRW SP640L SGL	88	139	222	353	561
ELMRW SP640L T	47	75	119	190	302
INDRE SP640L SGL	88	139	222	353	561
INDRE SP640L T	47	75	119	190	302
INDRE SP1100L SGL	56	89	141	224	357
INDRE SP1100L T	28	44	71	112	178
INDRE SP2200L SGL	26	41	65	103	164
INDRE SP2200L T	15	24	39	62	98
AFB OELR WT	120	191	304	484	769
AFF OELR WT	37	59	94	150	239
AFF OELR FCT	37	59	94	150	239
Light Commercial/Indoor	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
ELMRE LP220L SGL	248	394	626	995	1582
ELMRE LP220L T	140	222	353	561	892
ELMRE SP640L SGL	88	139	222	353	561
ELMRE SP640L T	47	75	119	190	302
ELMRE SP1100L SGL	56	89	141	224	357
ELMRE SP1100L T	28	44	71	112	178
Heavy Industrial/NEMA 4X	18 AWG	16 AWG	14 AWG	12 AWG	10 AWG
EXTLRE SP640L SGL	88	139	222	353	561
EXTLRE SP640L T	47	75	119	190	302
EXTLRE SP1100L SGL	56	89	141	224	357
EXTLRE SP1100L T	28	44	71	112	178
EXTLRE SP2200L SGL	26	41	65	103	164
EXTLRE SP2200L T	15	24	39	62	98

*Assuming a Homerun Connection from battery source. Considered 5% of battery nominal voltage drop across total wire length, per NEC.

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