

Absolute Health

1 City Center, 1st Floor
Portland, ME

Existing Booster Calculations - Additions shown **BOLD**

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WHEELOCK HORN/STROBE BOOSTER PANEL STANDBY BATTERY CALCULATION

	E50 Speaker/Strobe				STR Strobe Only			Quiescent Supervisory Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd				
Candela Current (ma)	41	63	109	140	57	85	135				
Panel								0.0800			
(Existing)			6		3				0.8250	72.50 %	
(Existing)			8		1				0.9290	69.03 %	
(Existing)			7		5				1.0480	65.07 %	
Circuit 4	1	4			9				0.8060	73.13 %	
								0.0800	3.6080		
All currents are expressed as 24Vdc mA.								Total Quiescent	Total Alarm		
Max current per ckt = 2.0 Amps. Max current per panel = 8.0 Amps.										63.92 %	Remaining % Panel

Total Quiescent Amp x Time Required (60 Hours) 4.800 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 0.902 AmpHr
 Total Battery Required 5.702 AmpHr
 Total Battery Required + 15% **6.557** AmpHr
 Battery Supplied **7.2** AmpHr

(Based on 24VDC RMS w/ Max Voltage Drop of 3.4VDC)

Field Ckt	E50 Speaker/Strobe				STR Strobe Only			Total Circuit Current	Ω per 1000' Pair		Voltage Drop
	15cd	30cd	75cd	110cd	15cd	30cd	75cd		12AWG (3.5)	14AWG (5.2)	
	41	63	109	140	57	85	135	Amps	Length	Length	
1	0	0	6	0	3	0	0	0.8250	1177	793	3.4VDC
2	0	0	8	0	1	0	0	0.9290	1046	704	3.4VDC
3	0	0	7	0	5	0	0	1.0480	927	624	3.4VDC
4	1	4	0	0	9	0	0	0.8060	1205	811	3.4VDC

Formulas used:

$$Rt = (D) \times (Rw) / 1000'$$

$$VD = (Rt) \times (It)$$

Substitute for (Rt) and solve for (D)

$$D = ((3.4) \times (1000)) / ((Rw) \times (It))$$

Rt = Total Circuit Resistance
 D = Total Circuit Length (Feet)
 Rw = Wire Resistance per 1000' Pair
 VD = Circuit Voltage Drop (Max allowed is 3.4Vdc)
 It = Total Circuit Current