

**Addition to Bayside Bowl
Portland, Maine
Booster Power Supply Standby Battery Calculations**

	GCHFWF-S7VMC Speaker/Strobe Wall				GCF-VM Strobe Only		GCHFRF-S7VMC Speaker/Strobe Ceiling			757-8A	Quiescent Current (Amp)	Alarm Current (Amp)	Spare Capacity (%)
	15cd	30cd	75cd	95cd	15cd	75cd	30cd	75cd	95cd	110cd			
	65	93	182	238	71	188	151	281	318	180			
											0.0700	0.2700	
Circuit 1			3	3		2				1		1.9540	34.87
Circuit 2		3	1	3			1					1.3260	55.80
Circuit 3			2									0.3640	87.87
Circuit 4	1				2					3		1.3320	55.60
											0.0700	5.2460	47.54

All currents are expressed as mA.

Max current per ckt = 3.0 Amps. Max current per panel = 10 Amps.

Total Quiescent Amp x Time Required (60 Hours)	4.200 AmpHr
Total Alarm Amp x Time Required (15 Minutes)	1.312 AmpHr
Total Battery Required	5.512 AmpHr
Total Battery Required + 20%	6.614 AmpHr
Battery Supplied	7.2 AmpHr

NAC Circuit Voltage Drop/Maximum Length Calculations

Formulas Used:

$$R_t = (D) \times (R_w) / 1000'$$

$$V_d = (R_t) \times (I_t)$$

Substitute for (R_t) and solve for D

$$D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$$

R_t= Total Circuit Resistance
D= Distance Total
R_w= Wire Resistance (Per 1,000' Pair)
V_d= Voltage Drop
I_t= Total Circuit Current

- Notes:**
- 1 NAC Circuit terminal voltage 24Vdc.
 - 2 A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.

NAC CIRCUIT MAX WIRE LENGTH CALCULATION

	GCHFWF-S7VMC Speaker/Strobe Wall				GCF-VM Strobe Only		GCHFRF-S7VMC Speaker/Strobe Ceiling			757-8A	Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	95cd	15cd	30cd	30cd	75cd	95cd	110cd		14AWG (5.2Ω)	
	65	93	182	238	63	90	151	281	318	180			
Circuit 1	0	0	3	3	0	2	0	0	1	0	1.9540	393.67	Ft
Circuit 2	0	3	1	3	0	0	1	0	0	0	1.3260	580.11	Ft
Circuit 3	0	0	2	0	0	0	0	0	0	0	0.3640	2113.27	Ft
Circuit 4	1	0	0	0	2	0	0	0	0	3	1.3320	577.50	Ft