

**UNE- Alumni Hall Portland
Booster Power Supply Standby Battery Calculations**

BPS10A Strobe Booster Panel

	G1RF-HDVM (Wall Mount Horn Strobe)				G1RF-VM (Wall Mount Strobe Only)				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd				
	88	109	193	248	71	98	188	240				
Panel									0.0700	0.2700		
Circuit 1	2		5							1.1410	54.36 %	
Circuit 2		2	1	1	3			1		1.1120	55.52 %	
Circuit 3		2	3	1			1	1		1.4730	41.08 %	
Circuit 4			4		5		3			1.6910	32.36 %	
									0.0700	5.6870	43.13 %	Remaining % Panel
									Total Quiesce	Total Alarm		

All currents are expressed as mA.
Max current per ckt = 2. Amps. Max current per panel = 10.0 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (5 Minutes) 0.474 AmpHr
 Total Battery Required 2.154 AmpHr
 Total Battery Required + 20% **2.585 AmpHr**
 Battery Supplied **7.2 AmpHr**

Strobe 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 = Total Circuit Length (Feet)
 R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
 V_D = Circuit Voltage Drop (Max allowed is 4.0Vdc)
 I_t = Total Circuit Current

Notes:

- 1 BPS Power supply terminal voltage 24Vdc.
- 2 A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
- 3 Current values listed per device are based on 20Vdc.
- 4 BPS Power supply output is straight DC (not regulated).

STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G1RF-HDVM (Wall Mount Horn Strobe)				G1RF-VM (Wall Mount Strobe Only)				Total Circuit Current	Ω per 1000' Pair		Volt Drop
	15cd	30cd	75cd	95cd	15cd	30cd	75cd	95cd		12AWG (3.5)	14AWG (5.2)	
	91	124	219	257	74	108	205	244				
Panel									Amp	Max Length (Ft)	Max Length (Ft)	
Circuit 1	2	0	5	0	0	0	0	0	1.0400	1098.90	739.64	4.0
Circuit 2	0	2	1	1	3	0	0	1	1.0080	1133.79	763.13	4.0
Circuit 3	0	2	3	1	0	0	1	1	1.2210	936.00	630.00	4.0
Circuit 4	0	0	4	0	5	0	3	0	1.3110	871.74	586.75	4.0