

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

BPS10A Strobe Booster Panel

	G1RF-HDVM (Wall Mount Horn Strobe)				Wall Mount Strobe Only		Ceiling SO		Quiescent Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	110cd	15cd	30cd	30cd	75cd				
Panel	88	109	193	248	71	98	108	205	0.0700	0.2700		
Circuit 1	6	1	3	1	4					1.7480	30.08 %	
Circuit 2	3		4	2	4	1				1.9140	36.20 %	
Circuit 3	1		6	1	1		1	1		1.9930	33.57 %	
Circuit 4			1							0.1930	92.28 %	
									0.0700	6.1180	38.82 %	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) 0.510 AmpHr
 Total Battery Required 2.190 AmpHr
 Total Battery Required + 20% **2.628** 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)				Wall Mount Strobe Only		Ceiling SO		Total Circuit Current	Ω per 1000' Pair		Volt Drop
	15cd	30cd	75cd	110cd	15cd	30cd	30cd	75cd		12AWG (3.5)	14AWG (5.2)	
Panel	88	109	193	248	71	98	108	205	Amp	Max Length (Ft)	Max Length (Ft)	
Circuit 1	6	1	3	1	4	0	0	0	1.5630	731.19	492.15	4.0
Circuit 2	3	0	4	2	4	1	0	0	1.9390	589.41	396.72	4.0
Circuit 3	1	0	6	1	1	0	1	1	1.7200	664.45	447.23	4.0
Circuit 4	0	0	1	0	0	0	0	0	0.1820	6279.43	4226.54	4.0