

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

BPS10A Strobe Booster Panel

	GCF-HDVM (Ceiling Mount Horn Strobe)				GCF-VM (Ceiling Mount Strobe Only)				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	95cd	15cd	30cd	75cd	95cd				
	91	124	219	257	74	108	205	244				
Panel									0.0700	0.2700		
Circuit 1	2		1		2					0.5490	78.04 %	
Circuit 2			2				3			1.0530	57.88 %	
Circuit 3	1		1		2					0.4580	81.68 %	
Circuit 4	1		1		1		1			0.5890	76.44 %	
									0.0700	2.9190	70.81 %	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) 0.243 AmpHr
 Total Battery Required 1.923 AmpHr
 Total Battery Required + 20% **2.308 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

	GCF-HDVM (Ceiling Mount Horn Strobe)				GCF-VM (Ceiling 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		Max Length (Ft)	Max Length (Ft)	
Panel									Amp			
Circuit 1	2	0	1	0	2	0	0	0	0.4600	2484.47	1672.24	4.0
Circuit 2	0	0	2	0	0	0	3	0	0.5770	1980.69	1333.16	4.0
Circuit 3	1	0	1	0	2	0	0	0	0.3950	2893.31	1947.42	4.0
Circuit 4	1	0	1	0	1	0	1	0	0.3920	2915.45	1962.32	4.0