



Illuminated Pushbutton

## Specifications

Electrical Ratings	125mA @ 50VDC 125mA @ 125VAC	Actuation Force	300 ± 100gF
Electrical Life	500,000 cycles	Actuation Travel	1.5 ± .25mm
Mechanical Life	1,000,000 cycles	Insulation Resistance	≥ 1000MΩ min
Contact Resistance	≤ 50mΩ initial	Sealing	IP67
Dielectric Strength	1,000Vrms min	Operating Temperature	-30°C (-40°C without LED) to 85°C
		Storage Temperature	-30°C (-40°C without LED) to 85°C

## Materials

Actuator	6/6 Nylon
Housing	6/6 Nylon
Base	Diallyl Phthalate (DAP)
Contacts	Copper Alloy, Gold over Silver plated
Terminals	Copper Alloy, Gold over Silver plated

Contact Factory for wire assembly options

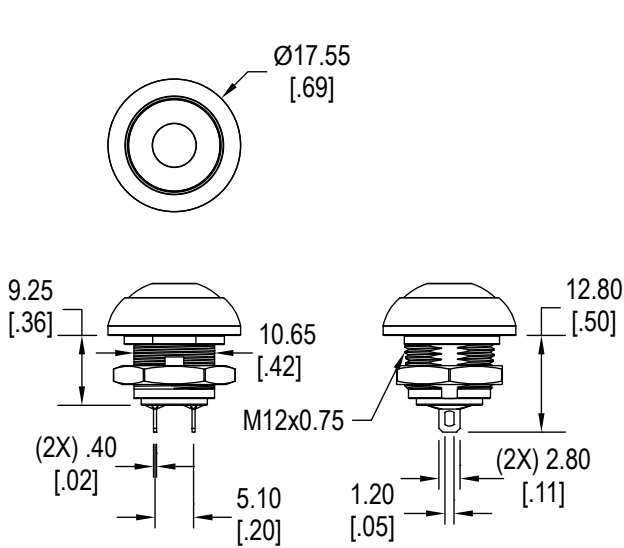


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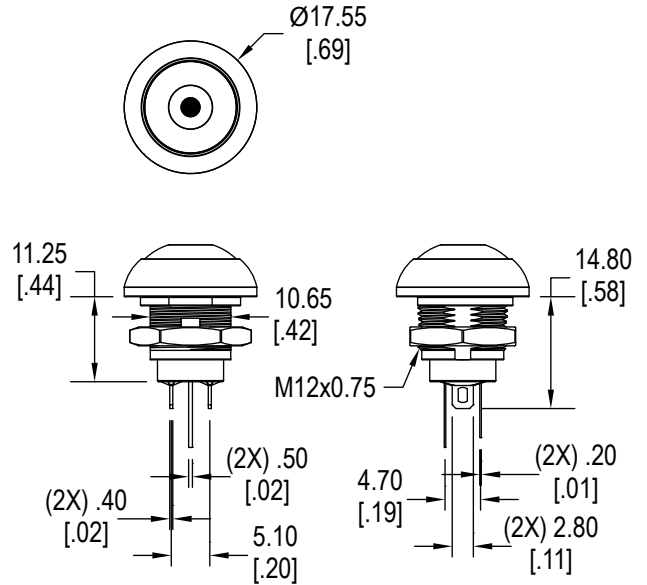
**Ordering Information**

1. Series	ES	A	N	M	L	2	G	B	GB
ES									
2. Contact Configuration	<p>A = SPST N.O. B = SPST N.C. **Not available with Led</p>								
3. Switch Function	<p>L = Latching N = Momentary</p>								
4. Housing / Actuator Finish	<p>M = Matte</p>								
5. Actuator Style	<p>D = Round, no LED F = Round with flat, no LED H = Raised, no LED L = Round with flat, LED S = Square, no LED *Square actuator style not available with latching function</p>								
6. Actuator Color	<p>1 = White 2 = Black 3 = Red 4 = Yellow 5 = Green 6 = Orange 7 = Blue 8 = Dark Gray</p>								
7. Bushing	<p>F = Snap-In (0.8 ~ 1.8mm thick panel) *Not available with latching function G = 12 x 0.75 SI Threaded</p>								
8. Terminals	<p>B = Solder Lug</p>								
9. LED Color	<p>X = no LED R = Red Y = Yellow G = Green PG = Pure Green B = Blue W = White RG = Red/Green dual LED RB = Red/Blue dual LED YG = Yellow/Green dual LED</p>								

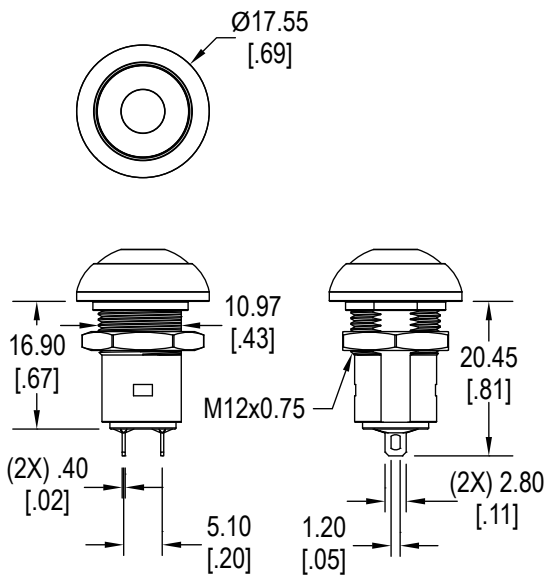
**Dimensions**



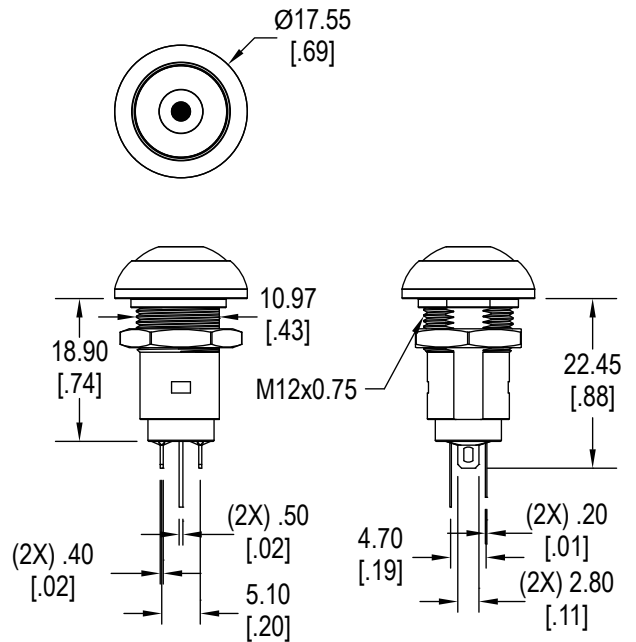
**F = Flat, Round Actuator with no LED**  
**G = Threaded Bushing**



**L = Flat, Round Actuator with LED**  
**G = Threaded Bushing**

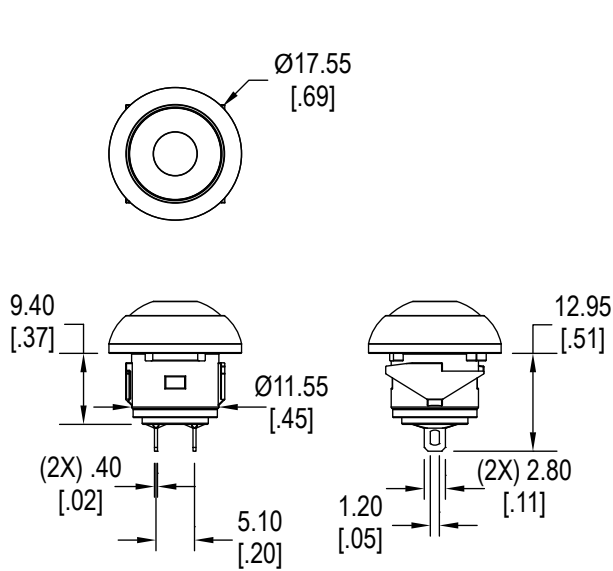


**F = Flat, Round Actuator with no LED, Latching**  
**G = Threaded Bushing**

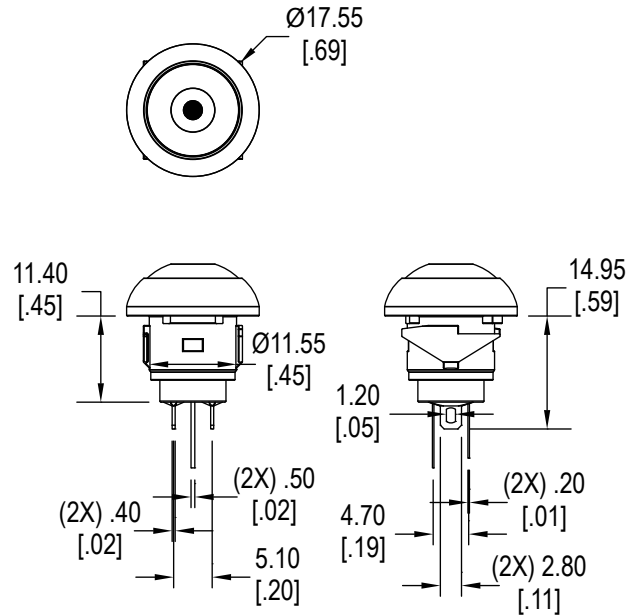


**L = Flat, Round Actuator with LED, Latching**  
**G = Threaded Bushing**

**Dimensions**

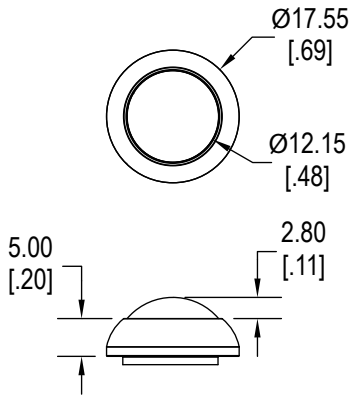


**F = Flat, Round Actuator with no LED**  
**F = Snap-In Bushing**

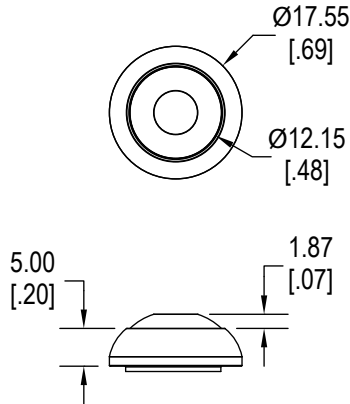


**L = Flat, Round Actuator with LED**  
**F = Snap-In Bushing**

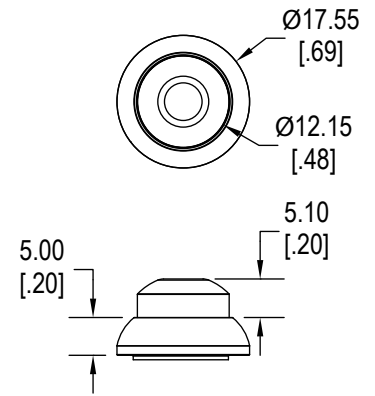
### Actuators



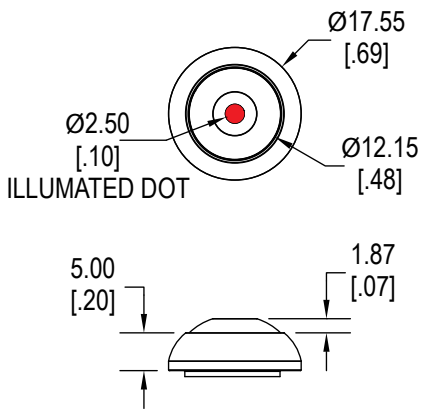
**D = Round, no LED**



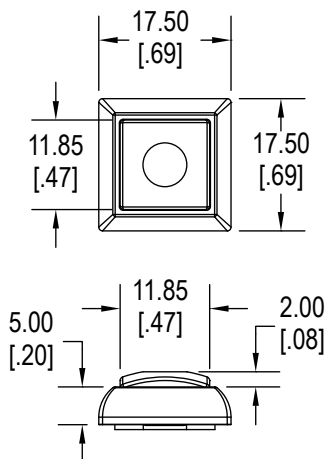
**F = Round with Flat, no LED**



**H = Raised, no LED**

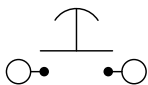


**L = Round with Flat, LED**

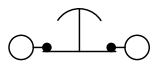


**S = Square, no LED**

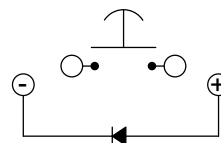
### Schematics



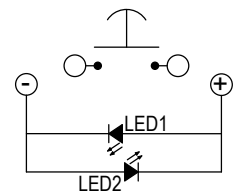
**SPST N.O.**



**SPST N.C.**

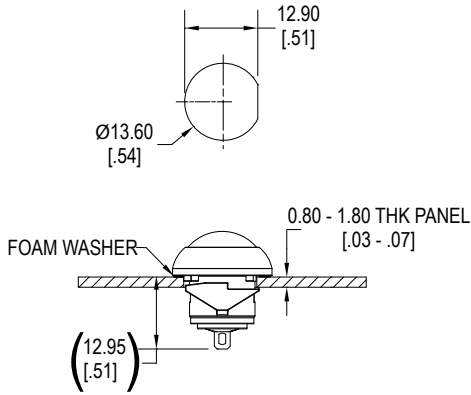


**SPST N.O. with LED**

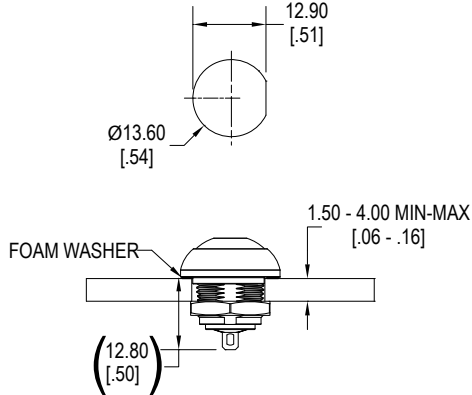


**SPST N.O. with Dual LED**

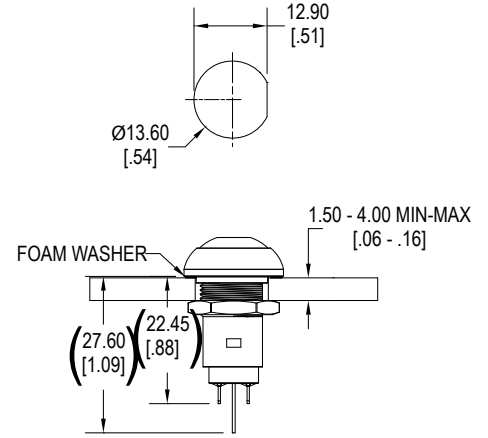
### Panel Cut Out



**F = Snap-In Bushing**



**G = Threaded Bushing Momentary**



**G = Threaded Bushing Latching**

### LED Characteristics

LED Ratings		Color						
		R	Y	G	B	O	W	Units
Reverse Voltage	$V_R$	5	5	5	5	5	5	V
Forward Current (avg)	$I_F$	30	30	30	30	30	30	mA
Forward Current (peak)	$I_{FS}$	100	100	100	100	100	100	mA
Reverse Current $V_R = 5V$	$I_R$	100	100	100	100	100	1	$\mu A$
Power Dissipation	$P_T$	80	100	100	120	120	120	mW
Operating & Storage Temperature	$T_A$	-30 ~ +85						C°
Forward Voltage (typ) $I_F = 20mA$	$V_F$	2.1	2.1	2.0	3.2	3.2	3.2	V
Forward Voltage (max) $I_F = 20mA$	$V_F$	2.6	2.6	2.6	3.6	3.6	3.6	V
Wavelength at Peak Emission $I_F = 20mA$	$\lambda_P$	645	590	570	470	525	n/a	nm
Spectral Line Half-Width $I_F = 20mA$	$\Delta\lambda$	22	15	30	30	30	n/a	nm
Luminous Intensity, $I_F = 20mA$	LI	100	200	100	150	300	250	mcd
Viewing Angle	$\Theta$	35	35	35	35	35	35	deg