



Illuminated Pushbutton

## Specifications

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

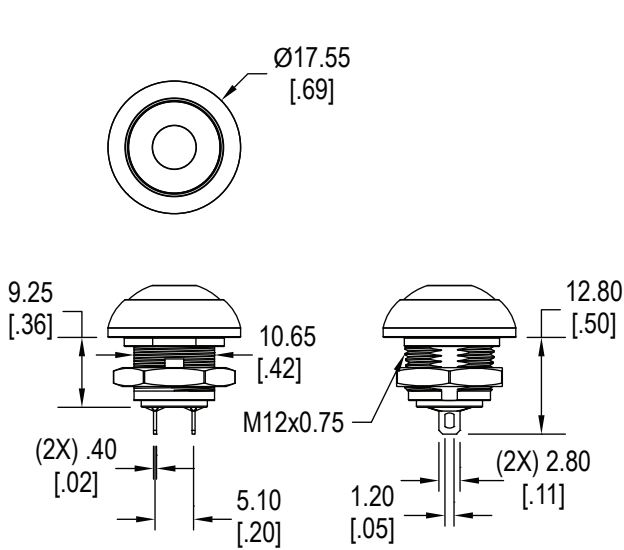


Illuminated Pushbutton

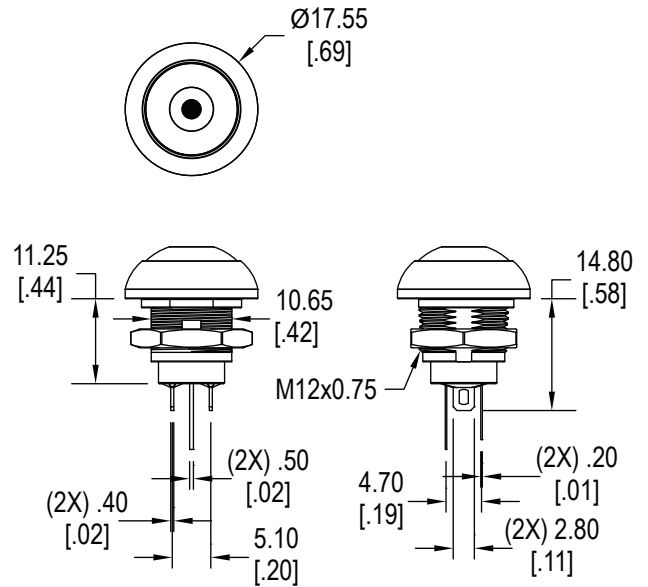
**Ordering Information**

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

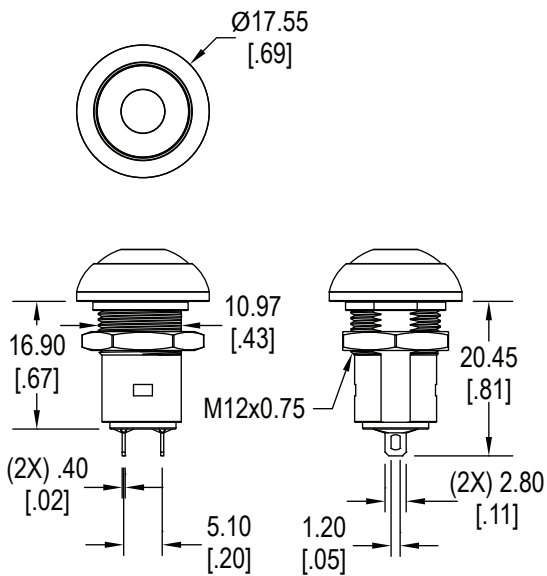
### Dimensions



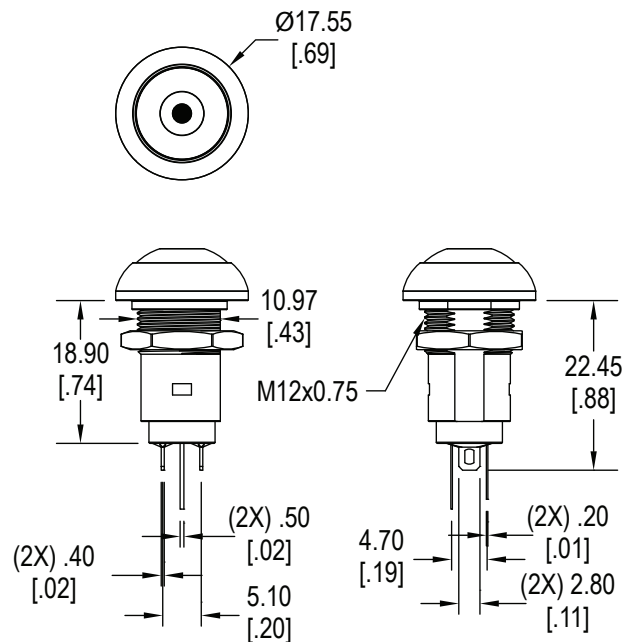
**F = Flat, Round Actuator with no LED**  
**G = Threaded Bushing**



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

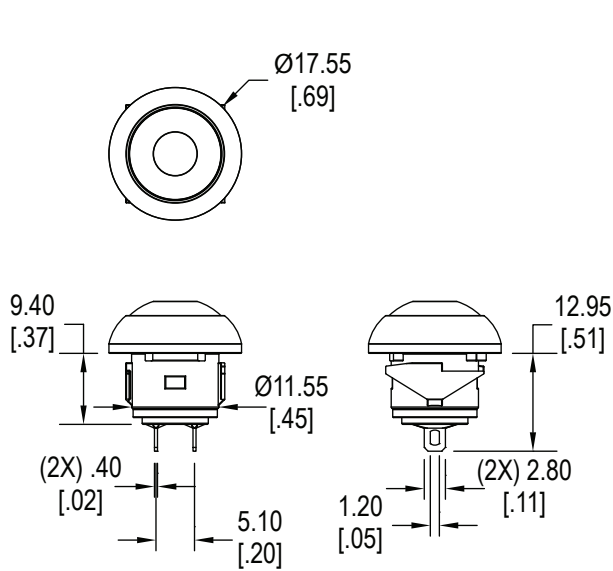


**F = Flat, Round Actuator with no LED, Latching**  
**G = Threaded Bushing**

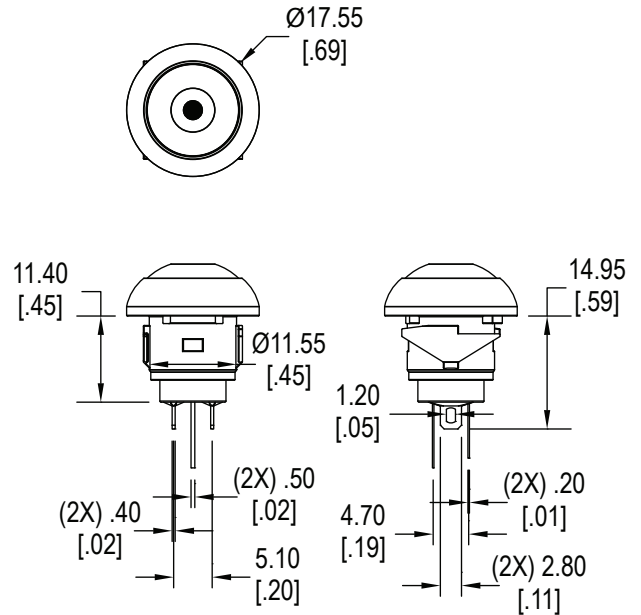


**L = Flat, Round Actuator with LED, Latching**  
**G = Threaded Bushing**

**Dimensions**

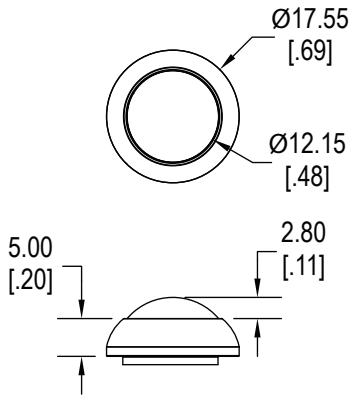


**F = Flat, Round Actuator with no LED**  
**F = Snap-In Bushing**

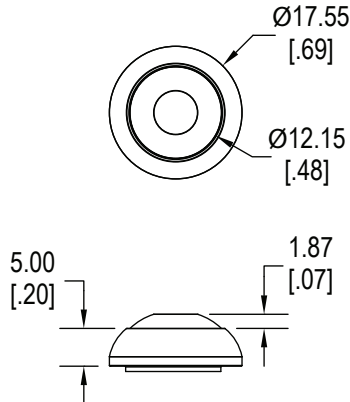


**L = Flat, Round Actuator with LED**  
**F = Snap-In Bushing**

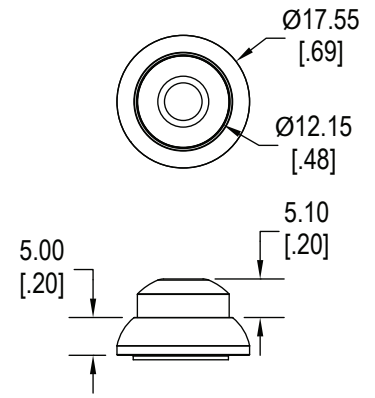
### Actuators



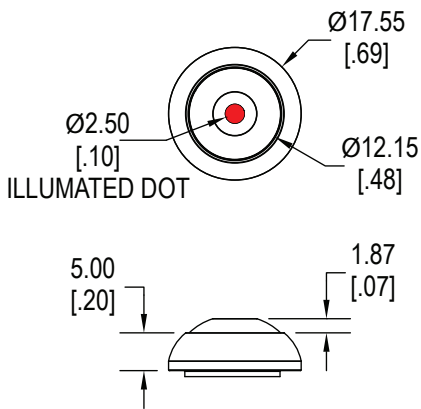
**D = Round, no LED**



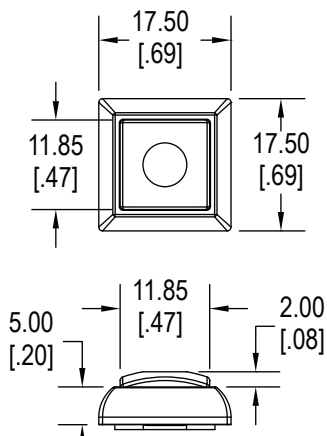
**F = Round with Flat, no LED**



**H = Raised, no LED**

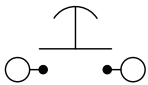


**L = Round with Flat, LED**

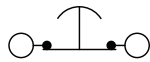


**S = Square, no LED**

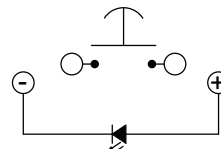
### Schematics



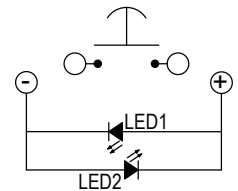
**SPST N.O.**



**SPST N.C.**

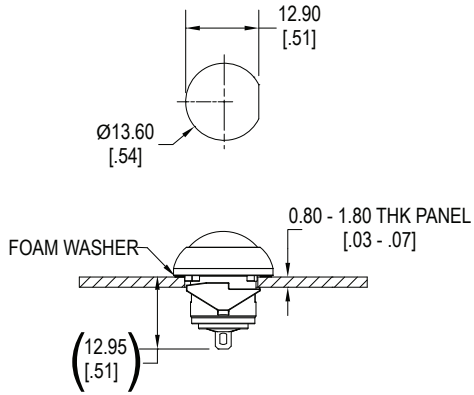


**SPST N.O. with LED**

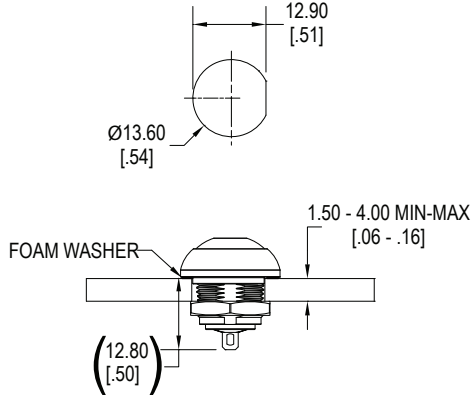


**SPST N.O. with Dual LED**

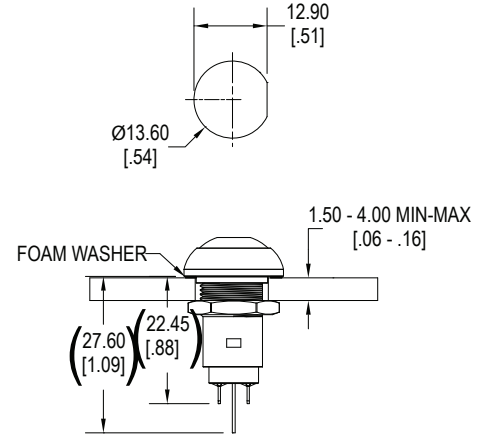
### Panel Cut Out



**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     |