

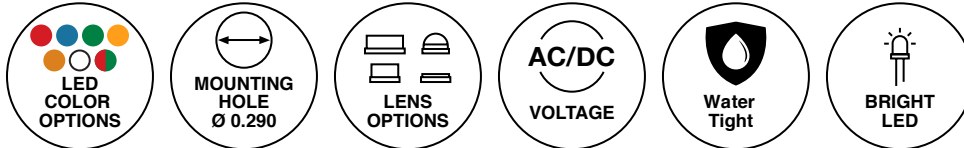
# 90 Series

## Ø .290" (7.37mm)

### LED Panel Mount Indicator



90 Series with built-in long life LED offer superior construction and longer life bi-pin, straight leads, and wire leads termination styles



#### Key Features

- Mounting hole size: .290" (7.37mm)
- Panel Thickness: 0.80" (20.32) Max
- Lens type options: hi-hat, flush, hi-dome, and wide hi-hat all featured with fresnel pattern lens which provides excellent light focus and assures maximum light output
- Lens color options: red, amber, yellow, green, blue, water clear, and smoke
- Voltage options: 2-48 VDC or 120VAC
- Terminals: bi-pin, straight leads, and wire leads (6" wire leads, 24 AWG)
- Wire leads: 6.0" total length (nominal) / .50" stripped (nominal), red anode/black cathode, 24 AWG TPB UL1061 insulation
- LED single color options: red, amber, green, orange, blue, and white
- Bi-color option: red/green
- Spring retainer clip and washer secures uniform placement of the indicator to the panel and is ideal for high vibration environments
- The C option specifies a pin length of .20"
- Offered with white or black bezel, where the black bezel enhances LED contrast
- Available with a variety of LEDs including AllnGaP and InGaN technology for high brightness applications, single color, bi-color and with integrated resistors
- Resistant to shock and vibration
- Watertight socket options for splashdown environments
- Fits socket holder (PS90 or PS90T - sold separately) or wiring plug (CSH90 - sold separately)
- For custom cable length, connectors or colors contact VCC
- Compliant with RoHS and REACH

## Ordering Data

### 905 (No Lens)



Example:

#### 905-NWG120-O

905 Series No Lens, Green LED,  
120V with Straight Leads

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*905-BA2-O	Amber	583	16	60	-	-	Straight Leads	2V	-
*905-NWG24H-O	Green	520	2400	45	-	-	Straight Leads	24V/15mA	26V/18mA
*905-NWG120-O	Green	520	2400	45	-	-	Straight Leads	120VAC/3.5mA	130VAC/4mA

### C905 (905 Series with pin length of .20'')



Example:

#### C905-NWR12H-O

905 Series No Lens, Red LED,  
12V with Bi-Pin

C905-GLP2-O	Green	565	2.3	50	-	-	Bi-Pin	2V	-
C905-NWA12H-O	Amber	592	2800	30	-	-	Bi-Pin	12V/20mA	14V/25mA
C905-NWG12H-O	Green	520	2400	45	-	-	Bi-Pin	12V/15mA	14V/20mA
C905-NWR12H-O	Red	634	2800	30	-	-	Bi-Pin	12V/20mA	14V/25mA
C905-BA24H-O	Amber	583	16	60	-	-	Bi-Pin	24V/17mA	26V/20mA
C905-BCG24H-O	Green	565	80	24	-	-	Bi-Pin	24V/17mA	26V/20mA
C905-BCR24H-O	Red	635	120	35	-	-	Bi-Pin	24V/17mA	26V/20mA
C905-NWA24H-O	Amber	592	2800	30	-	-	Bi-Pin	24V/17mA	26V/20mA
C905-NWG24H-O	Green	520	2400	45	-	-	Bi-Pin	24V/15mA	26V/18mA
C905-NWR24H-O	Red	634	2800	30	-	-	Bi-Pin	24V/17mA	26V/20mA
C905-BCG28H-O	Green	565	80	24	-	-	Bi-Pin	28V/16.5mA	30V/18mA
C905-GLP28H-O	Green	565	2.3	50	-	-	Bi-Pin	-	-
C905-BCG48H-O	Green	565	80	24	-	-	Bi-Pin	48V/15mA	50V/16mA
C905-NKG120-O	Green	520	10000	15	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C905-NKR120-O	Red	634	3600	15	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C905-NWG120-O	Green	520	2400	45	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C905-NWG120-O-R-	Green	520	2400	45	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA

\* Spring retainer and washer included

## Ordering Data

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
C905-NWR120-O	Red	634	2800	30	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C905-NWW120-O	White	-	2500	50	-	-	Bi-Pin	120VAC/3.5mA	130VAC/4mA

### 91 (Hi-Hat Lens)



Example:

#### 91-BCG5H-CGO

91 Series Hi-Hat Lens, Green LED,  
Clear Green Lens, 5V with Straight Leads

### 91W (Hi-Hat Lens)



Example:

#### 91W-NWA12H-CAO

91 Series Hi-Hat Lens, Amber LED,  
Clear Amber Lens, 12V with Wire Leads

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*91-BCA5H-CYO	Amber	583	100	35	Yellow	Clear	Straight Leads	5V/22mA	5.5V/28mA
*91-BCG5H-CGO	Green	565	80	24	Green	Clear	Straight Leads	5V/22mA	5.5V/28mA
*91-BA12H-NAO-R-	Amber	583	16	60	Amber	Diffused	Straight Leads	12V/20mA	14V/25mA
*91-BG12H-NGO	Green	565	10	60	Green	Diffused	Straight Leads	12V/20mA	14V/25mA
*91-BR12H-NRO	Red	635	14	60	Red	Diffused	Straight Leads	12V/20mA	14V/25mA
*91-NWA12H-CAO	Amber	592	2800	30	Amber	Clear	Straight Leads	12V/20mA	14V/25mA
*91-NWR12H-CRO	Red	634	2800	30	Red	Clear	Straight Leads	12V/20mA	14V/25mA
*91-BCG28H-CGO	Green	565	80	24	Green	Clear	Straight Leads	28V/16.5mA	30V/18mA
*91-NKW28H-CWO	White	-	9200	20	Clear	Clear	Straight Leads	28V/15mA	30V/17mA
*91-NWA28H-CAO	Amber	592	2800	30	Amber	Clear	Straight Leads	28V/16.5mA	30V/18mA
*91-NWG28H-CGO	Green	520	2400	45	Green	Clear	Straight Leads	28V/15mA	30V/17mA
*91-NWR28H-CRO	Red	634	2800	30	Red	Clear	Straight Leads	28V/16.5mA	30V/18mA
*91-BCR120-CRO	Red	635	120	35	Red	Clear	Straight Leads	120VAC/3.5mA	130VAC/4mA

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*91W-NWA12H-CAO	Amber	592	2800	30	Amber	Clear	Wire Leads	12V/20mA	14V/25mA
*91W-NWG12H-CGO	Green	520	2400	45	Green	Clear	Wire Leads	12V/15mA	14V/20mA
*91W-NWR12H-CRO	Red	634	2800	30	Red	Clear	Wire Leads	12V/20mA	14V/25mA

\* Spring retainer and washer included

## Ordering Data

### C91 (905 Series with pin length of .20")



Example:

#### C91-BA5H-CAO

91 Series Hi-Hat Lens, Amber LED,  
Clear Amber Lens, 5V with Bi-Pin

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
C91-BA5H-CAO	Amber	583	16	60	Amber	Clear	Bi-Pin	5V/22mA	5.5V/28mA
C91-BCG5H-CGO	Green	565	80	24	Green	Clear	Bi-Pin	5V/22mA	5.5V/28mA
C91-BCG5H-CGO-R-	Green	565	80	24	Green	Clear	Bi-Pin	5V/22mA	5.5V/28mA
C91-BR5H-CRO	Red	635	14	60	Red	Clear	Bi-Pin	5V/22mA	5.5V/28mA
C91-BG15H-CGO	Green	565	10	60	Green	Clear	Bi-Pin	15V/24mA	16.5V/28mA
C91-BA24H-CAO	Amber	583	16	60	Amber	Clear	Bi-Pin	24V/17mA	26V/20mA
C91-BG24H-CGO	Green	565	10	60	Green	Clear	Bi-Pin	24V/17mA	26V/20mA
C91-NWA24H-NAO	Amber	592	2800	30	Amber	Diffused	Bi-Pin	24V/17mA	26V/20mA
C91-NWB24H-NB0	Blue	465	700	45	Blue	Diffused	Bi-Pin	24V/15mA	26V/18mA
C91-NWG24H-NGO	Green	520	2400	45	Green	Diffused	Bi-Pin	24V/15mA	26V/18mA
C91-NWO24H-CWO	Orange	605	2000	30	Clear	Clear	Bi-Pin	24V/17mA	26V/20mA
C91-NWW24H-CWO	White	-	2500	50	Clear	Clear	Bi-Pin	24V/15mA	26V/18mA
C91-BA28H-CAO	Amber	583	16	60	Amber	Clear	Bi-Pin	28V/16.5mA	30V/18mA
C91-BCA28H-CWO	Amber	583	100	35	Clear	Clear	Bi-Pin	28V/16.5mA	30V/18mA
C91-BR28H-CRO	Red	635	14	60	Red	Clear	Bi-Pin	28V/16.5mA	30V/18mA
C91-NWA120-NAO	Amber	592	2800	30	Amber	Diffused	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C91-NWG120-CGO	Green	520	2400	45	Green	Clear	Bi-Pin	120VAC/3.5mA	130VAC/4mA

### 94 (Flush Lens)



Example:

#### 94-LRG2-CWO

94 Series Flush Lens, Red/Green LED,  
Clear Lens, 2V with Straight Leads

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*94-LRG2-CWO	Red/Green	660/565	90/40	60	Clear	Clear	Straight Leads	2V	-

\* Spring retainer and washer included

## Ordering Data

### C94 (94 Series with pin length of .20")



Example:

#### C94-NKB24H-NBO

94 Series Flush Lens, Blue LED,  
Diffused Blue Lens, 24V with Bi-Pin

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
C94-LRG2-CWO	Red/Green	660/565	90/40	60	Clear	Clear	Bi-Pin	2V	-
C94-NWG12H-NGO	Green	520	2400	45	Green	Diffused	Bi-Pin	12V/15mA	14V/20mA
C94-NKB24H-NBO	Blue	465	3000	15	Blue	Diffused	Bi-Pin	24V/15mA	26V/18mA
C94-NWG24H-NGO	Green	520	2400	45	Green	Diffused	Bi-Pin	24V/15mA	26V/18mA

### 961 (Wide Hi-Hat Lens)



Example:

#### 961W-BCA28H-CA9

C91 Series Wide Hi-Hat Lens, Amber LED,  
Clear Amber Lens, 28V with Wire Leads

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*961W-NWG5H-CWO	Green	520	2400	45	Clear	Clear	Wire Leads	5V/15mA	5.5V/23mA
*961W-BCA28H-CA9	Amber	583	100	35	Amber	Clear	Wire Leads	28V/16.5mA	30V/18mA

### C961 (961 Series with pin length of .20")



Example:

#### C961-NWR24H-CWO

91 Series Wide Hi-Hat Lens, Red LED,  
Clear Lens, 24V with Bi-Pin

C961-NWR24H-CWO	Red	634	2800	30	Clear	Clear	Bi-Pin	24V/17mA	26V/20mA
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\* Spring retainer and washer included

## Ordering Data

### 96 (Hi-Dome Lens)



Example:

#### 96-BG12H-CGO

96 Series Hi-Dome Lens, Green LED,  
Clear Green Lens, 12V with Straight Leads

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
*96-BG12H-CGO	Green	565	10	60	Green	Clear	Straight Leads	12V/20mA	14V/25mA
*96-NWB28H-NW9	Blue	465	700	45	Clear	Diffused	Straight Leads	28V/15mA	30V/17mA

### C96 (96 Series with pin length of .20")



Example:

#### C96-BG12H-NGO

96 Series Hi-Dome Lens, Green LED,  
Diffused Green Lens, 12V with Bi-Pin

Part Number	Color	$\lambda_{pk}$ (nm)	Iv (mcd)	Viewing Angle	Lens Color	Lens Diffusion	Terminals	Voltage/Current	
								Design Vf/If	Max Vf/If
C96-BG12H-NGO	Green	565	10	60	Green	Diffused	Bi-Pin	12V/20mA	14V/25mA
C96-BR12H-CRO	Red	635	14	60	Red	Clear	Bi-Pin	12V/20mA	14V/25mA
C96-NKR12H-CRO	Red	634	3600	15	Red	Clear	Bi-Pin	12V/20mA	14V/25mA
C96-BCA14H-CAO	Amber	583	100	35	Amber	Clear	Bi-Pin	14V	-
C96-BCG14H-CGO	Green	565	80	24	Green	Clear	Bi-Pin	14V	-
C96-BCG24H-CGO	Green	565	80	24	Green	Clear	Bi-Pin	24V/17mA	26V/20mA
C96-NWA24H-NAO	Amber	592	2800	30	Amber	Diffused	Bi-Pin	24V/17mA	26V/20mA
C96-NWG24H-SO	Green	520	2400	45	Smoke	-	Bi-Pin	24V/15mA	26V/18mA
C96-NWR24H-CRO	Red	634	2800	30	Red	Clear	Bi-Pin	24V/17mA	26V/20mA
C96-NWR24H-NRO	Red	634	2800	30	Red	Diffused	Bi-Pin	24V/17mA	26V/20mA
C96-NWR24H-SO	Red	634	2800	30	Smoke	-	Bi-Pin	24V/17mA	26V/20mA
C96-BCG28H-CGO	Green	565	80	24	Green	Clear	Bi-Pin	28V/16.5mA	30V/18mA
C96-NWG120-CGO	Green	520	2400	45	Green	Clear	Bi-Pin	120VAC/3.5mA	130VAC/4mA
C96-R120-CRO	Red	-	-	-	Red	Clear	Bi-Pin	120VAC/3.5mA	130VAC/4mA

\* Spring retainer and washer included

## Accessory Options

### CSH90 (Wiring Plug with Collar)



Part Number

CSH90

### L92 (Lens)

90 Series Lens for PS90, PS90T socket and C905, 905



Part Number	Lens Diffusion	Lens Color
L92-CG	Clear	Green
L92-S	-	Smoke

### NW5-WT (Neoprene Mounting Washer)



Part Number

NW5-WT

## Accessory Options

### PS90 (Solder Terminal)



### PS90 - Watertight



Part Number	Lens Diffusion	Lens Color	Watertight
PS90	-	-	-
PS90-L92-CG-WT	Clear	Green	Yes
PS90-L92-CW-WT	Clear	Clear	Yes
PS90-L92-NA-WT	Diffused	Amber	Yes
PS90-L92-NW-WT	Diffused	Clear	Yes
PS90-R-	-	-	-

### PS90T (Turret Terminal)



### PS90T - Watertight

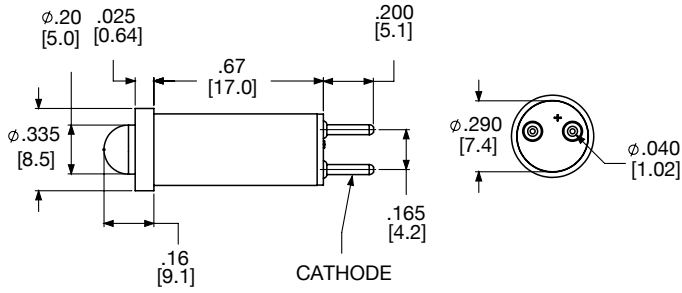


Part Number	Lens Diffusion	Lens Color	Watertight
PS90T	-	-	-
PS90T-L92-NG-WT	Diffused	Green	Yes
PS90T-L92-NR-WT	Diffused	Red	Yes
PS90T-L92-NW-WT	Diffused	Clear	Yes
PS90T-L92-NY-WT	Diffused	Yellow	Yes

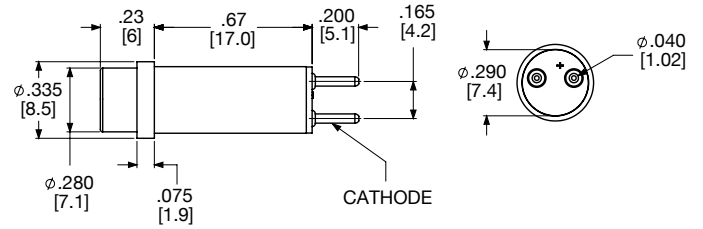


# Product Dimensions

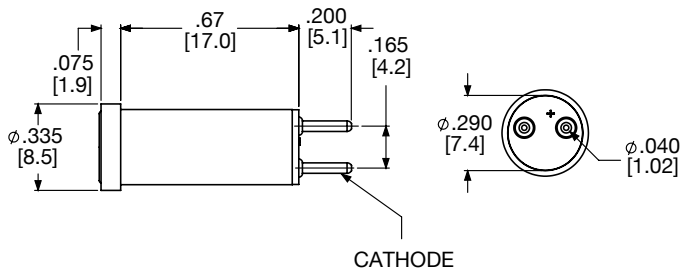
## 905 (No Lens)



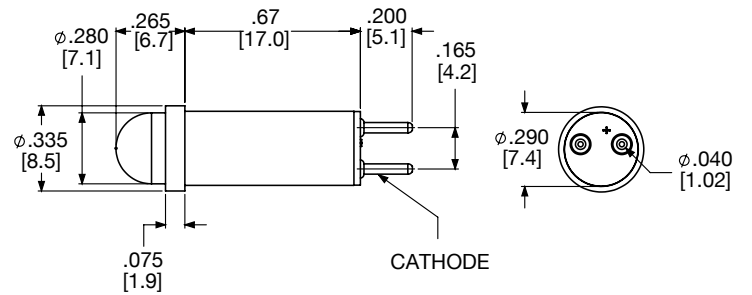
## 91 (Hi-Hat Lens)



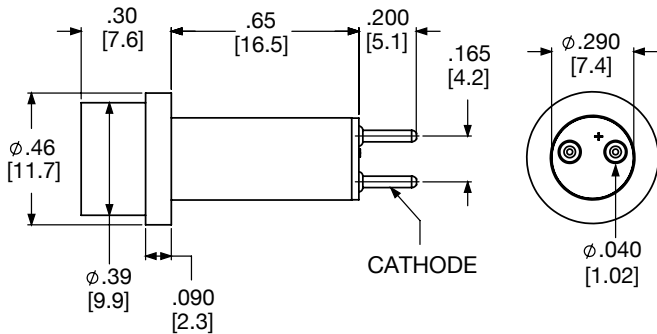
## 94 (Flush Lens)



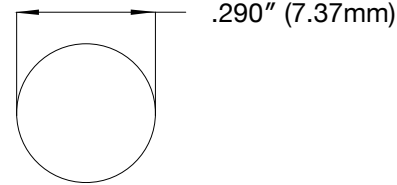
## 96 (Hi-Dome Lens)



## 961 (Wide Hi-Hat Lens)



## Recommended Mounting Hole

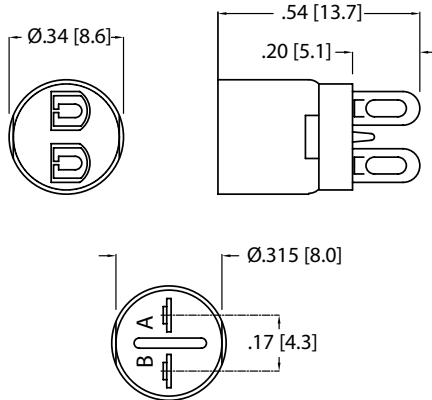


### Notes:

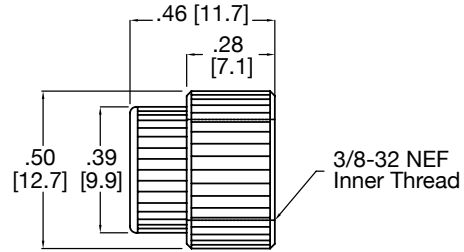
1. All dimensions are in inches [millimeters]
2. Tolerance is  $\pm 0.25''$  unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

## Product Dimensions

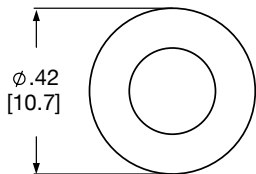
### CSH90 (Wiring Plug Collar)



### L92 (Lens)



### NW5-WT (Neoprene Mounting Washer)

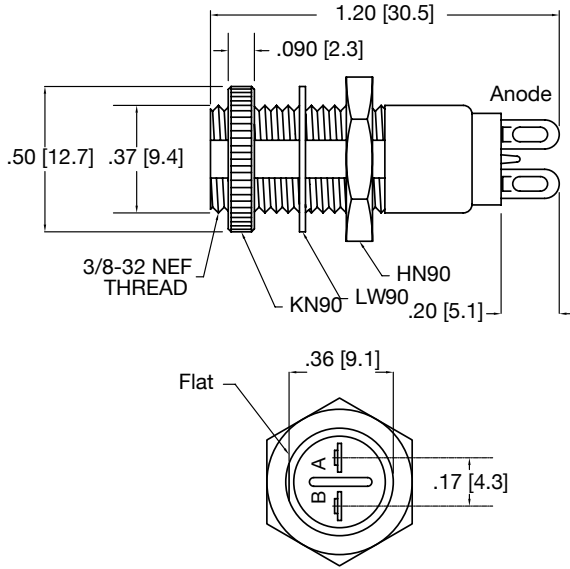


#### Notes:

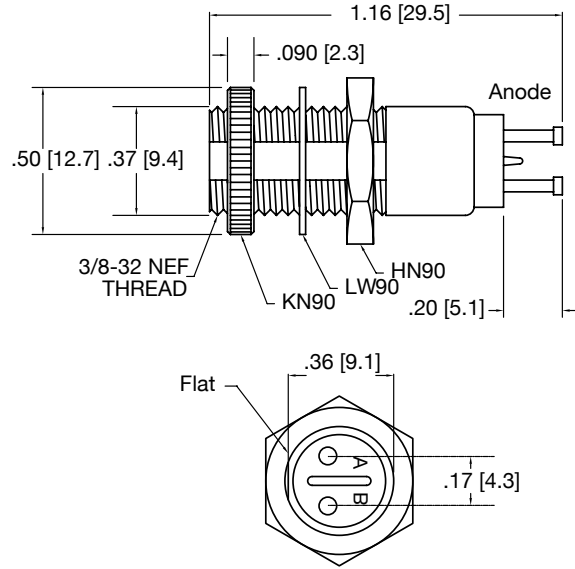
1. All dimensions are in inches [millimeters]
2. Tolerance is  $\pm 0.25''$  unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

# Product Dimensions

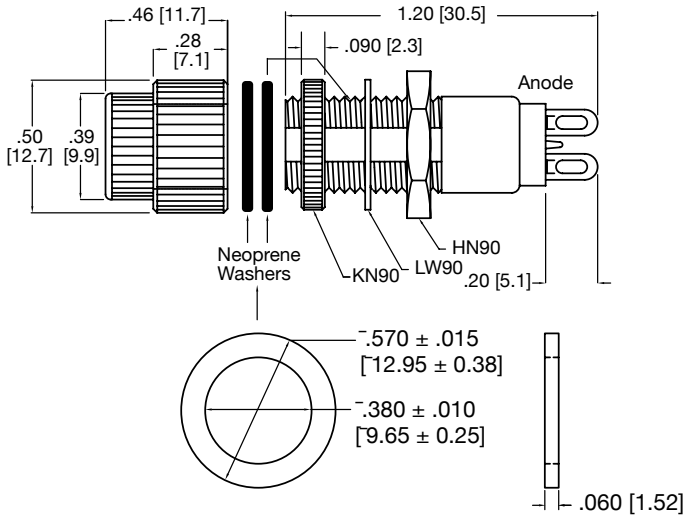
## PS90 (Solder Terminal)



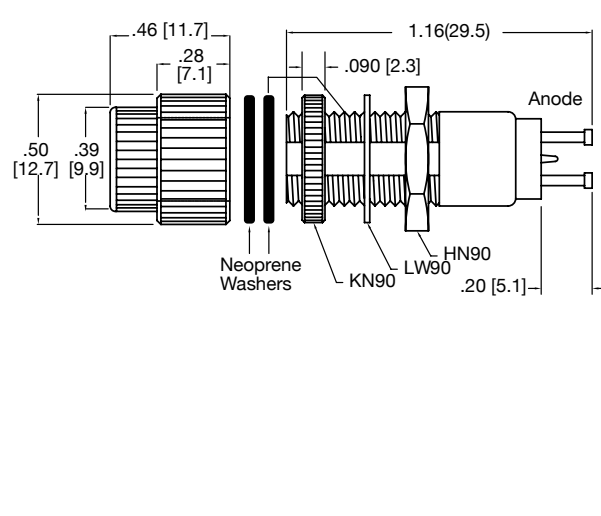
## PS90T (Turret Terminal)



## PS90 - Watertight



## PS90T - Watertight



### Mounting Hole Diameter

Ø 0.375"/0.385" [Ø 9.525/9.779]

### Maximum Panel Thickness

Max: 0.80" [20.32]

#### Notes:

1. All dimensions are in inches [millimeters]
2. Tolerance is  $\pm 0.25''$  unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

## Product Specifications

Materials	
Housing	Black nylon, except 961 & 964 which are white nylon
Lens	Lexan
Pin	Brass
Wire Leads	Tinned copper conductor TPB insulation
NW5-WT	Black neoprene Hardness: SHORE A 80

Temperature Specifications	
Operating Temperature	-30°C to 60°C
Storage Temperature	-40°C to 100°C

Installation Specifications	
Mounting Hole	0.290" to 0.291" [7.37 to 7.39]
Panel Thickness	0.25" max
Wire Leads	24 AWG - 300V lead color: red and black 6.0" long min stripped 0.5" nom red anode/black cathode, 24 AWG TPB UL1061 insulation. Contact sales for other lengths, gauges and colors.

## Compliances and Approvals

