



# 900 Series Cartridge Type LED Lamps

## Overview

The 900 Series LED cartridge lamp mates with 910 Series lampholders. Constructed with an aluminum case, 900 Series LED lamps are noted for high resistance to shock and vibration, long life, and low power requirements. These may be ordered with multiple lens styles and lens colors.

## Approvals

UL Recognized (Check note 9 for exceptions)

## Specifications

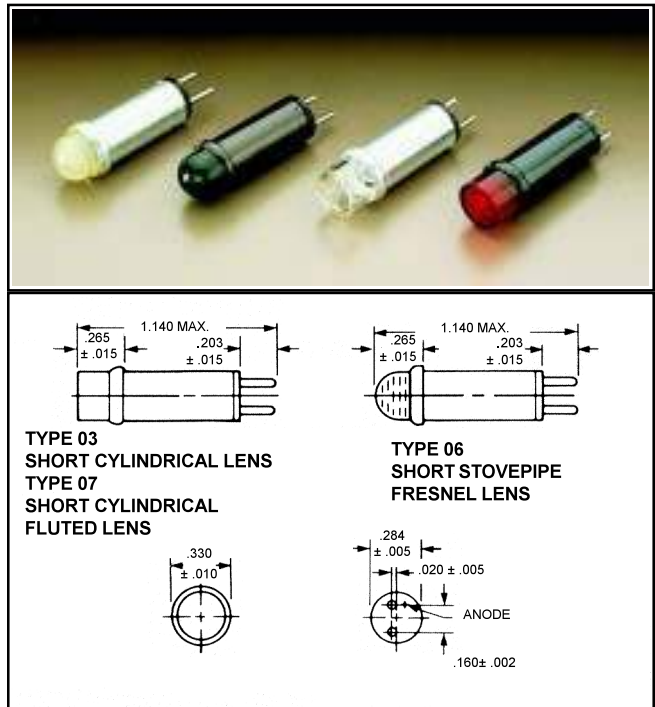
**Sleeve:** Aluminum. Black anodized finish standard; clear anodized finish optional.

**Termination:** .040" diameter stainless steel pins mounted in a nylon header. The anode is identified on the header as the + pin connection.

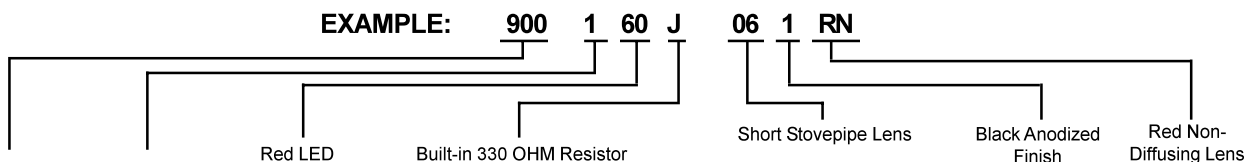
**LED DC Voltage options:** 1.8 to 28 volts.

**Lens:** Heat resistant, high strength polycarbonate.

**Lens Marking:** Cylindrical lenses may be stamped. Contact factory.



## ORDERING INFORMATION:



Series Number	Termination	Lamp Code	Resistor			Lens Type	Sleeve Finish	Lens Color
			Code	Current	Volts			
900	1 Stainless steel pins standard	60 (Red LED)	Nominal 10 mA			03 Short Cylindrical 06 <sup>2</sup> Short Stovepipe Fresnel 07 <sup>2</sup> Short Cylindrical Fluted	1 Black Anodized-standard	Nondiffusing (Clear)
			X	NONE	1.8			
			U	200 OHM	3.6			
		J <sup>9</sup>	330 OHM	5				
		W	430 OHM	6				
		Y	820 OHM	10				
	66 (Green LED)	K <sup>9</sup>	1000 OHM	12				
		G <sup>9</sup>	1200 OHM	14				
		L <sup>9</sup>	2700 OHM	28				
	A Tin-plated stainless steel pins for printed circuit board mounting	68 (Yellow LED)	Nominal 20 mA				2 Clear (Silver) Anodized	CN Colorless (60,66,68) <sup>3</sup> WN White (60,66,68) <sup>3</sup> AN Amber (68) <sup>3</sup> GN Green (66) <sup>3</sup> RN Red (60) <sup>3</sup> YN Yellow (68) <sup>3</sup>
			V	100 OHM	3.6			
			M <sup>9</sup>	180 OHM	5			
		P	220 OHM	6				
Z		390 OHM	10					
N <sup>9</sup>		620 OHM	14					
H <sup>9</sup>		1300 OHM	28					
<sup>2</sup> Recommended for best light distribution. <sup>3</sup> Lamp Code Number. When specifying lens color, use only with lamp codes shown. <sup>9</sup> Not UL Recognized								

# 900 Series Cartridge Type Incandescent Lamps

## Overview

The 900 Series incandescent cartridge lamp mates with 910 Series lampholders. Constructed with an aluminum case, 900 Series incandescent lamps are noted for high brightness. These may be ordered with multiple lens styles and lens colors.

## Approvals

UL Recognized .

## Specifications

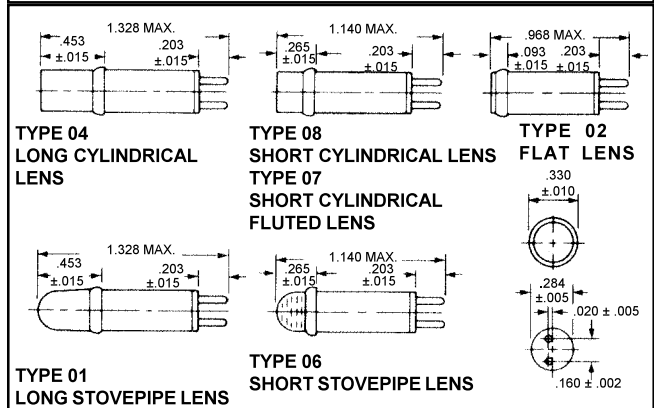
**Sleeve:** Aluminum. Clear anodized finish standard; black anodized finish optional.

**Termination:** .040" diameter stainless steel pins mounted in a nylon header.

**Incandescent AC or DC Voltage options:** 1.35 to 28 volts.

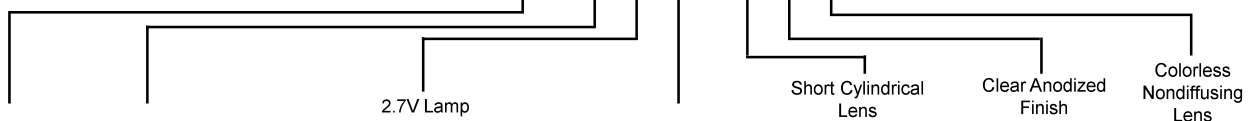
**Lens:** Heat resistant, high strength polycarbonate. Translucent lens colors are normally used for incandescent cartridge lamps as they give an evenly diffused light over the lens surface. When Type 08 (short cylindrical) lens is used in the 910 Series holder with a screw-on lens cap, specify "colorless nondiffusing" for 08 lens color.

**Lens Marking:** Cylindrical lenses may be stamped. Contact factory.



## ORDERING INFORMATION:

EXAMPLE: **900 1 06 X 08 2 CN**



Series Number	Termination	Lamp					Resistor	Lens Type	Sleeve Finish	Lens Color												
		Code	Volts	MA	MSCP	Life (Hrs)																
900	1 Stainless steel pins standard	05 <sup>2</sup>	1.35	60	.01	3,000	X (NONE)	01 <sup>3</sup> Long Stovepipe	1	Nondiffusing (Clear)												
		06 <sup>2</sup>	2.7	60	.04	6,000																
		07 <sup>2</sup>	3.0	15	.003	10,000					02 <sup>4</sup> Flat	Black Anodized	AN Amber									
		17	5.0	60	.03	30,000																
		10	6.0	40	.04	10,000								04 Long Cylindrical	2	BN Blue						
		16	6.0	60	.13	3,000																
		11	6.0	200	.60	1,000											06 <sup>5</sup> Short Stovepipe Fresnel	Clear (Silver) Anodized standard	CN Colorless			
		01	6.3	40	.03	20,000																
		12	6.3	200	.55	5,000														07 <sup>5</sup> Short Cylindrical Fluted	2	GN Green
		02	6.3	200	.40	20,000																
	08 <sup>2</sup>	10.0	14	.006	50,000	08 <sup>4</sup> Short Cylindrical		2	RN Red													
	09 <sup>2</sup>	10.0	40	.08	5,000																	
	18	12.0	40	.10	10,000					2	Clear (Silver) Anodized standard	WN White (Cloudy)										
	13	14.0	80	.50	1,500																	
	03	14.0	80	.30	15,000								2	Clear (Silver) Anodized standard	YN Yellow							
	20 <sup>2</sup>	14.0	17	.03	25,000																	
	21 <sup>2</sup>	18.0	20	.08	15,000											2	Clear (Silver) Anodized standard	Translucent				
	14	18.0	40	.15	10,000																	
	15	28.0	40	.34	4,000														2	Clear (Silver) Anodized standard	AT Amber	
	19	28.0	40	.15	10,000																	
04	28.0	40	.30	7,000	2	Clear (Silver) Anodized standard	BT Blue															
14	18.0	40	.15	10,000																		
15	28.0	40	.34	4,000				2	Clear (Silver) Anodized standard	GT Green												
19	28.0	40	.15	10,000																		
04	28.0	40	.30	7,000							2	Clear (Silver) Anodized standard	RT Red									
14	18.0	40	.15	10,000																		
15	28.0	40	.34	4,000										2	Clear (Silver) Anodized standard	WT White						
19	28.0	40	.15	10,000																		
04	28.0	40	.30	7,000													2	Clear (Silver) Anodized standard	YT Yellow			
14	18.0	40	.15	10,000																		

<sup>1</sup> MSCP - Mean Spherical Candle Power.

<sup>2</sup> Because of relatively low light output, these lamps should be used with non-diffusing (clear) lens colors only. Lamp ratings are compiled from a leading lamp manufacturer's catalog.

<sup>3</sup> Best suited for wide angle viewing.

<sup>4</sup> For High Temperature application, contact factory.

<sup>5</sup> Nondiffusing lens colors only. Types 06 and 07 are recommended for best light distribution.

# 900/901 Series Cartridge Type Neon Lamps

## Overview

The 900 Series neon cartridge lamp mates with 910 Series lampholders. Constructed with an aluminum case, the 900/901 series neon lamps are ideally suited for 125 volt applications. The 901 series cartridge lamps are 0.125" longer than the 900 series to accept blue or green neon lamps and mate with the 911 series lampholders. Please consult the table below.

## Approvals

UL Recognized (Check note 9 for exceptions)

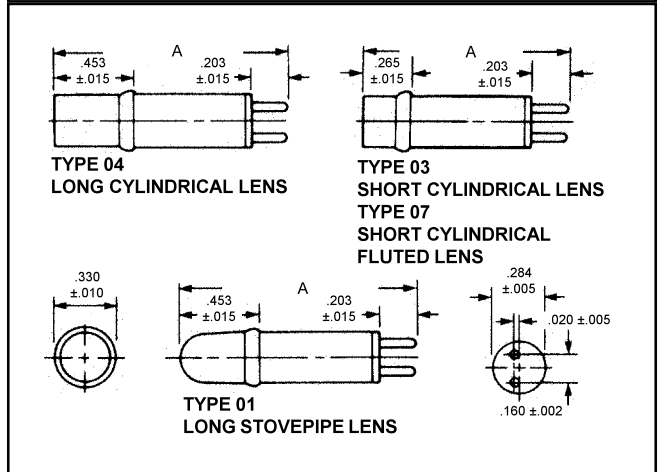
## Specifications

**Sleeve:** Aluminum. Clear anodized finish standard. Black anodized finish optional.

**Termination:** .040" dia. stainless steel pins mounted in nylon header.

**Voltage options:** **Std. Brightness**, 105 to 125 AC or DC volts. **High Brightness**, 110 to 125 AC volts. **Green Neon**, 115 to 125 AC or DC volts. **Blue Neon**, 105 to 125 AC volts or 105 to 150 DC volts.

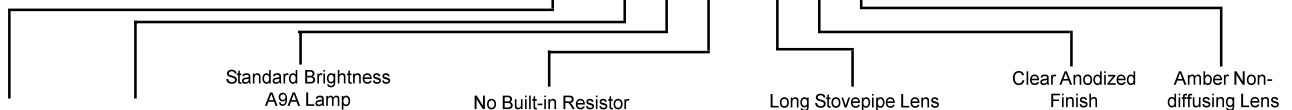
**Lens:** Heat resistant, high strength polycarbonate. When type 03 (short cylindrical) lens is used in a 910 or 911 Series holder with a screw-on lens cap, specify "colorless nondiffusing" for 03 lens color. **Lens Marking:** Cylindrical lenses may be stamped. Contact factory.



Lens Type	Dimension A in Inches (Max.)	
	900 Series	901 Series
01	1.328	1.453
03	1.140	1.265
04	1.328	1.453
07	1.140	1.265

## ORDERING INFORMATION:

EXAMPLE: 900 1 50 X 01 2 AN



Series Number	Termination	Lamp Code	Resistor		Lens Type	Sleeve Finish	Lens Color
			Code	Internal Resistor Value			
900	1	Note: Reference Lamp Selection Guide.	X <sup>5</sup>	No Built-In Resistor	01 <sup>6</sup> Long Stovepipe	1	Nondiffusing (Clear)
901	Stainless steel pins standard	52 <sup>1</sup> Standard Brightness A1B	C	56K OHM, 3K Life Hrs.	03 Short Cylindrical	Black Anodized	AN Amber
		53 <sup>1</sup> High Brightness A1C	E <sup>9</sup>	100K OHM, 15K Life Hrs.	04 Long Cylindrical		2
		51 <sup>2</sup> High Brightness C2A (NE2H)	T	150K OHM, 25K Life Hrs.	07 <sup>7</sup> Short Cylindrical Fluted	Clear (Silver) Anodized Standard	WN White
	50 <sup>2</sup> Standard Brightness A9A (NE2E)	X <sup>5</sup>	No Built-In Resistor		YN Yellow		
	56 <sup>3</sup> Green Neon	A	22K OHM, 5K Life Hrs.		BN <sup>8</sup> Blue		
	57 <sup>4</sup> Blue Neon	S	33K OHM, 25K Life Hrs.		GN <sup>8</sup> Green		
	Tin-plated stainless steel pins for printed circuit board mounting		C	56K OHM, 25K Life Hrs.			

<sup>1</sup> Use with lens colors AN, CN, RN, WN, or YN.  
<sup>2</sup> For use on 900 series only with type 01 and 04 lenses.  
<sup>3</sup> For use on 901 series only with lens colors GN, CN, or WN.  
<sup>4</sup> For use on 901 series with lens colors BN, CN, or WN.  
<sup>5</sup> External resistor required.  
<sup>6</sup> Best suited for wide angle viewing.  
<sup>7</sup> Recommended for best light distribution.  
<sup>8</sup> For 901 series only when used with blue or green lamp respectively.  
<sup>9</sup> Not UL Recognized