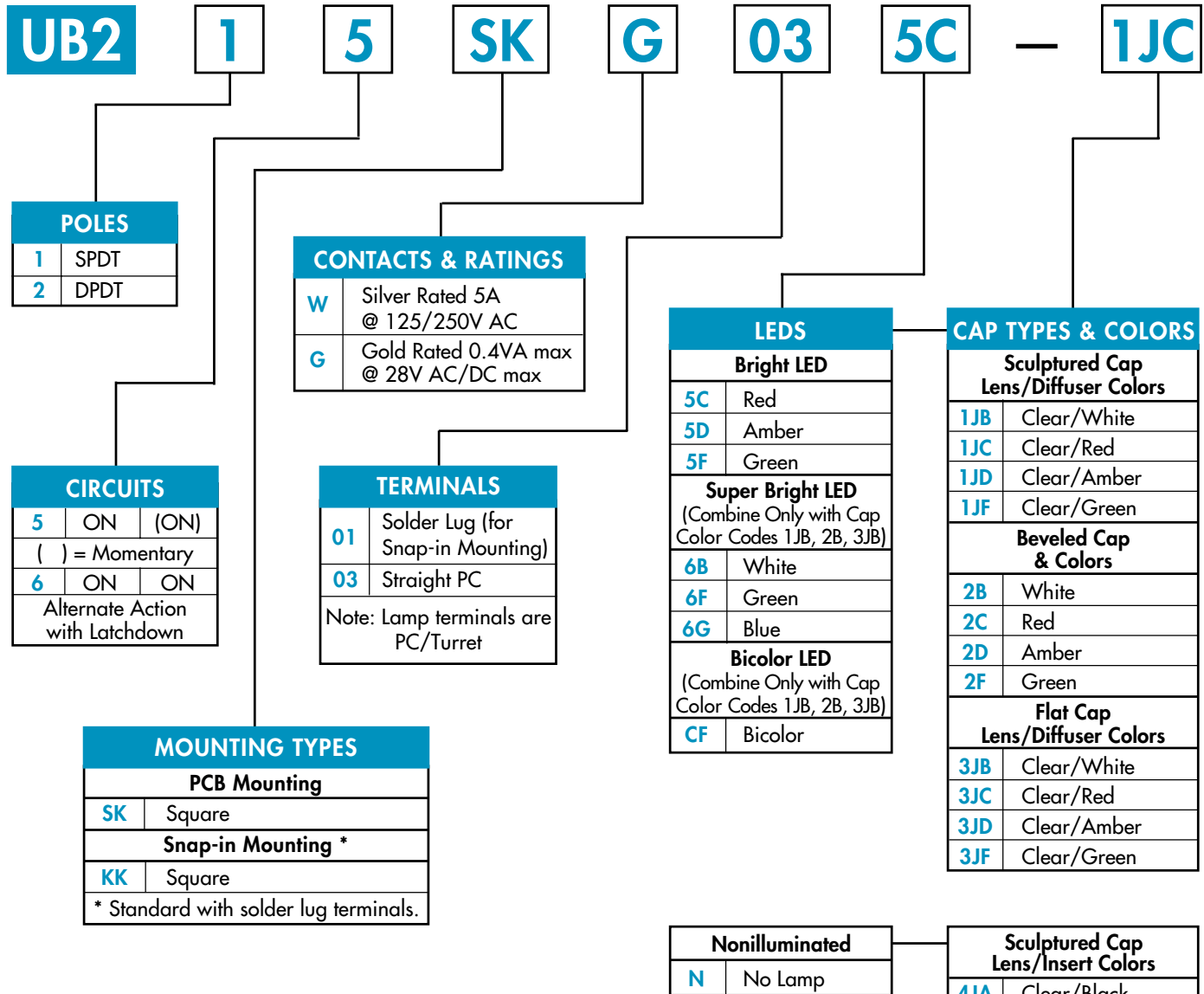
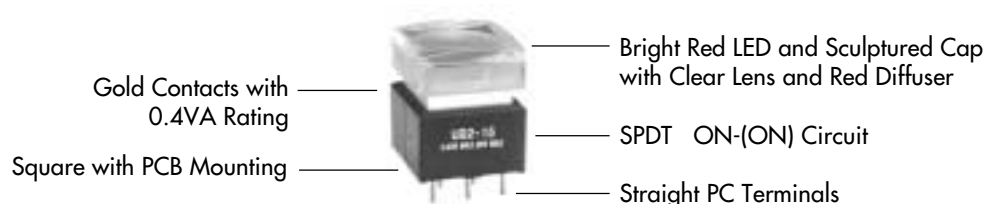


TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

UB215SKG035C-1JC



GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

Power Level (code W): 5A @ 125/250V AC or 5A @ 30V DC
Logic Level (code G): 0.4VA maximum @ 28V AC/DC maximum
 Note: See Supplement Index (page Z1) to find explanation of operating range.

Other Ratings

Contact Resistance: 50 milliohms maximum for silver; 100 milliohms maximum for gold
Insulation Resistance: 200 megohms minimum @ 500V DC
Dielectric Strength: 1,000V AC minimum between contacts;
 1,500V AC minimum between contacts & case
Mechanical Life: 1,000,000 operations minimum for momentary &
 200,000 operations minimum for alternate action
Electrical Life: 10,000 operations minimum for silver;
 200,000 operations minimum for gold
Nominal Operating Force: Single Pole: 194 grams
 Double Pole: 260 grams
Contact Timing: Break before make
Travel: 1.0mm (.039") pretravel; 1.3mm (.051") overtravel; 2.3mm (.091") total travel

Materials & Finishes

Housing/Bezel: Glass fiber reinforced polyamide
Snap-in Frame: Stainless steel
Movable Contactor: Phosphor bronze
Movable Contacts: Silver alloy with silver plating or copper with gold plating over nickel
Stationary Contacts: Silver alloy with silver plating or copper with gold plating over nickel
Switch Terminals: Phosphor bronze with silver or gold plating
Lamp Terminals: Brass with silver plating for bright LED models; brass with tin-lead plating for other models
Base: Glass fiber reinforced liquid crystal polymer

Environmental Data

Operating Temp Range: Illuminated: -25°C through +50°C (-13°F through +122°F) for Bright & Bicolor LEDs
 -20°C through +50°C (-4°F through +122°F) for Super Bright LEDs
 Nonilluminated: -20°C through +70°C (-4°F through +158°F)
Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range
 & returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

Cap Installation Force: 1.53 kg (3.37 lb)
Soldering Time & Temperature: 3 seconds @ 350°C or 5 seconds @ 270°C
Process Seal: Not available

Standards & Certifications

Flammability Standards: UL94V-0 rated base
UL Recognized: All single & double pole models recognized at 5A @ 125/250V AC or
 0.014A @ 28V DC; UL File No. E44145

POLES & CIRCUITS

		Plunger Position () = Momentary		Connected Terminals		Throw & Schematics
Pole	Model	Normal	Down	Normal	Down	Notes: Switch is marked with NC, NO, COM, L+ & L-. Lamp circuit is isolated and requires external power source (schematics on following page).
SP	UB215 UB216*	ON ON	(ON) ON	1-3	1-2	SPDT
DP	UB225 UB226*	ON ON	(ON) ON	1-3 4-6	1-2 4-5	DPDT

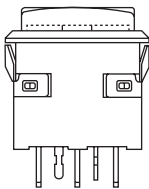
* When in latchdown position for the alternate circuit, cap positions above the housing are:
1.5mm (.059") for snap-in models & 7.0mm (.276") for PCB models.

SHAPES & MOUNTING TYPES

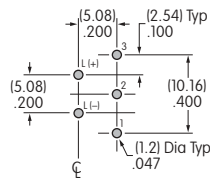
PCB Mounting

SK

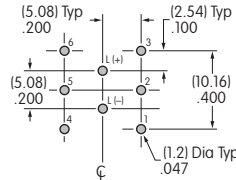
Square



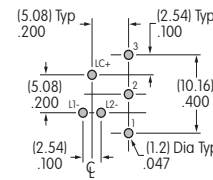
SP, Single Color LED



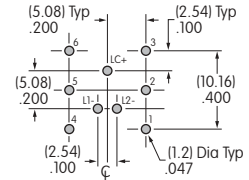
DP, Single Color LED



SP, Bicolor LED



DP, Bicolor LED

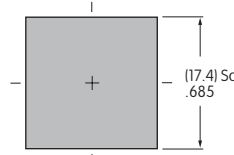
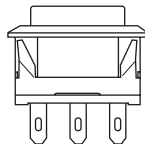


Nonilluminated models have no lamp terminals.

Snap-In Mounting (Solder Lug)

KK

Square with Bezel



Panel Thickness
1.0 ~ 3.2mm
(.039 ~ .126")

CONTACT MATERIALS & RATINGS

W

Silver Contacts

Power Level

5A @ 125V AC & 250V AC

G

Gold Contacts

Logic Level

0.4VA maximum @ 28V AC/DC maximum

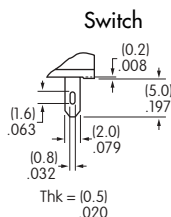
See Supplement Index (page Z1) for complete explanation of operating range.

TERMINALS

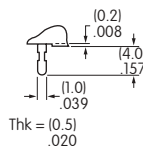
01

Solder Lug

.032" x .063" oblong hole accommodates two solid or stranded 24-gauge wires.

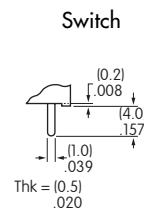


Lamp

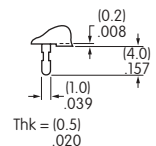


03

Straight PC



Lamp



LED COLORS & SPECIFICATIONS

Electrical specifications are determined at a basic temperature of 25°C. LED circuit is independent of switch operation.

If the source voltage is greater than rated voltage, a ballast resistor is required.

The ballast resistor calculation and more lamp detail are shown in the Supplement; see Supplement Index (page Z1).

Bright, Super Bright, & Bicolor LEDs

Super Bright LED is Electrostatic Sensitive	Color	Bright			Units	Super Bright			Bicolor	Units
		5C	5D	5F		6B	6F	6G	CF	
		Red	Amber	Green		White	Green	Blue	Red/Green	
Forward Peak Current	I_{FM}	30	30	25	mA	25	25	25	60/60	mA
Continuous Forward Current	I_F	20	20	20	mA	20	20	20	48/48	mA
Forward Voltage	V_F	1.85	2.0	2.25	V	3.6	3.5	3.6	1.8/2.0	V
Reverse Peak Voltage	V_{RM}	5	5	5	V	5	5	5	5/5	V
Current Reduction Rate Above 25°C	ΔI_F	0.40	0.42	0.46	mA/°C	0.40	0.40	0.40	1.0/1.0	mA/°C

Bright Single Color LED with 1 element

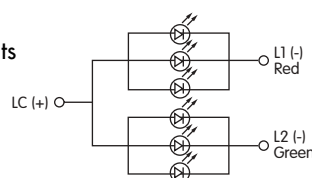


Super Bright Single Color LED with 1 element



Bicolor LED with 6 elements

Super Bright and Bicolor LEDs combine only with cap color codes 1JB, 2B, and 3JB.



Orange color can be achieved by lighting red and green simultaneously on the bi-color LED.

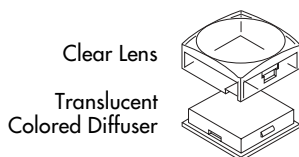
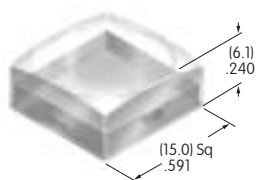
N

Nonilluminated Code N indicates that no lamp is used.

CAP TYPES & COLOR COMBINATIONS FOR ILLUMINATED

1

AT3074 Sculptured



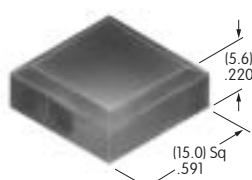
Lens/Diffuser Colors Available:

JB Clear/White	JD Clear/Amber
JC Clear/Red	JF Clear/Green

Material: Polycarbonate
Finish: Glossy

2

AT3075 Beveled



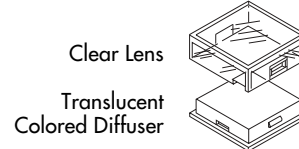
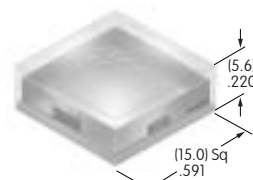
Cap Colors Available:

B White	D Amber
C Red	F Green

Material: Polycarbonate
Finish: Glossy

3

AT3076 Flat



Lens/Diffuser Colors Available:

JB Clear/White	JD Clear/Amber
JC Clear/Red	JF Clear/Green

Material: Polycarbonate
Finish: Glossy

CAP TYPES & COLOR COMBINATIONS FOR NONILLUMINATED

4 AT3073 Sculptured

Lens/Insert
Colors Available:

JA Clear/
Black

JB Clear/
White

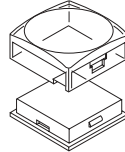
JC Clear/
Red

JE Clear/
Yellow

JF Clear/
Green

Clear Lens

Opaque
Colored
Insert



Material: Polycarbonate

Finish: Glossy

5 AT3077 Beveled

Cap
Colors Available:

A Black

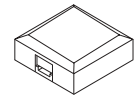
B White

C Red

E Yellow

F Green

Opaque
Colored Cap

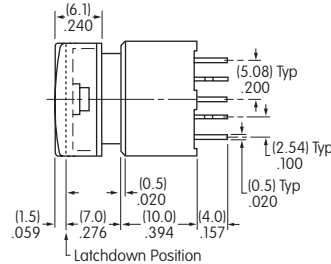
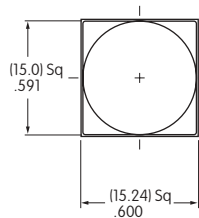


Material: Polycarbonate

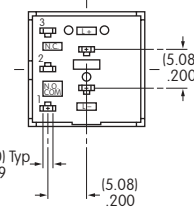
Finish: Glossy

TYPICAL SWITCH DIMENSIONS

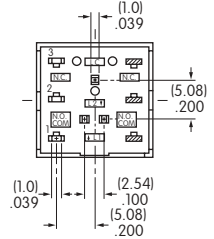
Single Pole • PCB Mount



Single Color LED



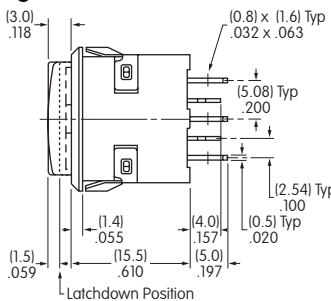
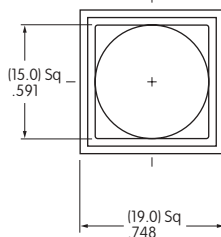
Bicolor LED



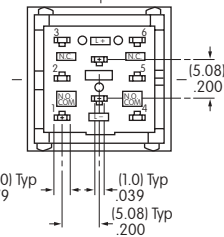
UB215SKG035C-1JC

Single Color LED Side View

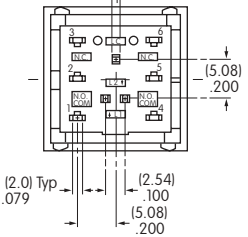
Double Pole • Snap-in Mount • Solder Lug



Single Color LED



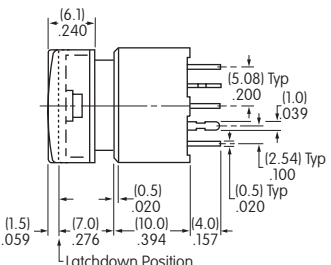
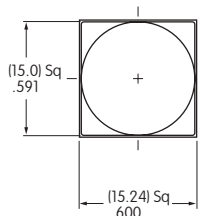
Bicolor LED



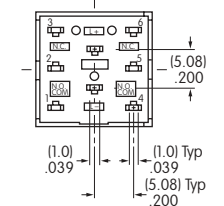
UB226KKW016F-1JF

Single Color LED Side View

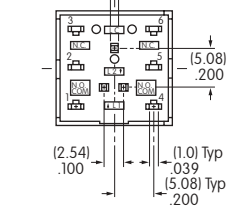
Double Pole • PCB Mount



Single Color LED



Bicolor LED

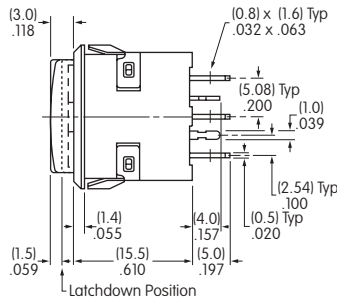
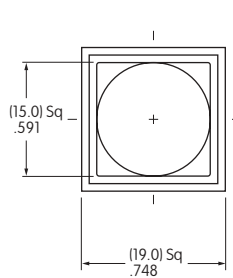


UB225SKG03CF-1JB

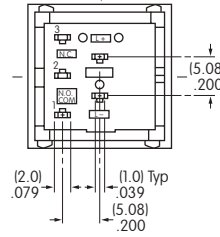
Bicolor LED Side View

TYPICAL SWITCH DIMENSIONS

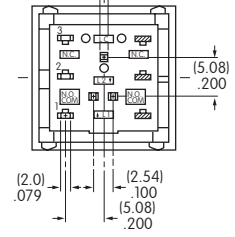
Single Pole Snap-in Mount Solder Lug



Single Color LED



Bicolor LED



UB216KKW01CF-1JB

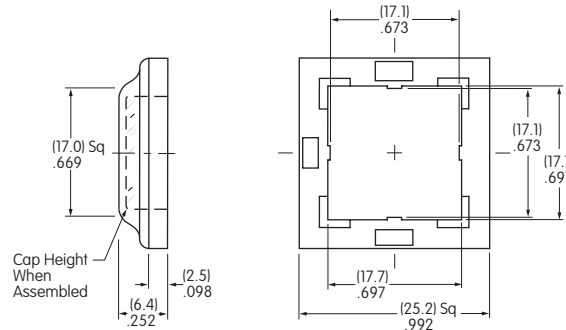
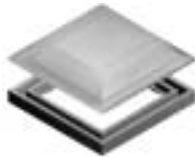
Bicolor LED Side View

OPTIONAL ACCESSORIES

Splash Cover

AT4145 Square

Not for use with
barrier type
models.

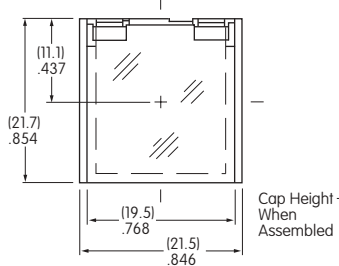


Materials
Lid: Clear PVC
Operating temperature range:
0°C ~ +70°C
(32°F ~ 158°C).
Gasket: Polyethylene

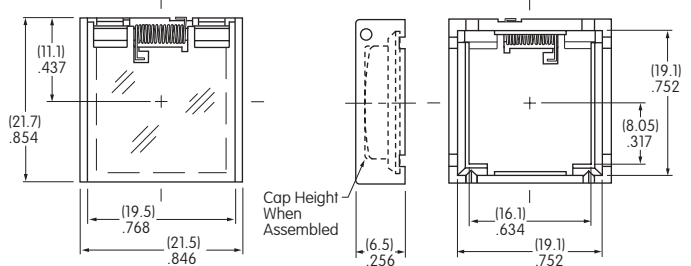
Panel Thickness
1.0mm ~ 2.5mm
(.039" ~ .098")

Protective Guards for Snap-in Mount

AT4141 Opens 90°



AT4142 Opens 180° (spring loaded for automatic closing)

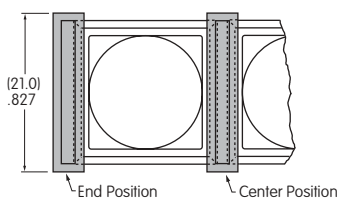


Materials: Clear Polycarbonate Cover & Black GFR Polyamide Base; Recommended Panel Thickness: 1.0 ~ 2.7mm (.039" ~ .106")

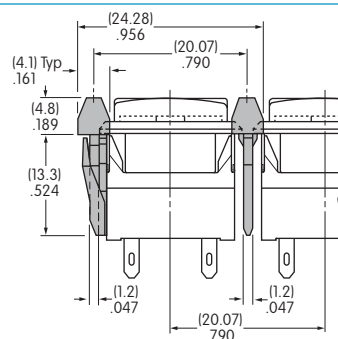
Barriers for Snap-in Mount

AT4143 End

AT4144 Center

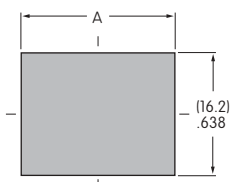


Material: Polyamide



Cutouts for More
Than 1 Switch

$A = .786" \times \text{Number of Switches} + .051"$



LEGENDS

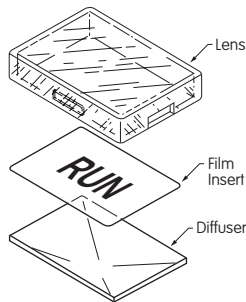
General information and basic specifications are presented here for customers who want to do their own legends.

Suggested Printable Area for UB Lens & Film Insert

Square Cap

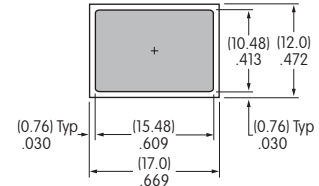
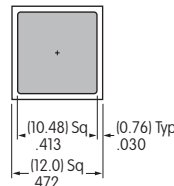


Rectangular Cap

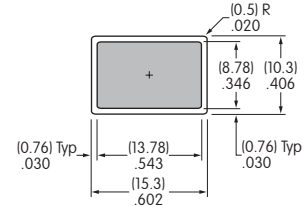
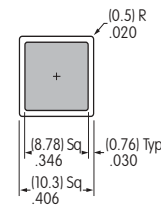


Shaded areas are printable areas.

Lens



Film Insert



Recommended Print Methods:

Screen Print on Lens or Film Insert; Pad Print on Lens. Epoxy based ink is recommended.

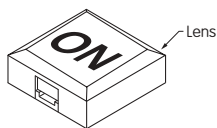
Film Insert: Clear Polyester

4 mil max. thickness

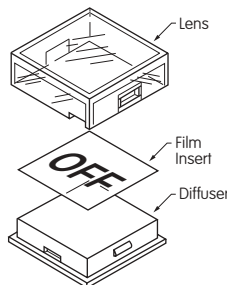
Suggested Printable Area for UB2 Lens & Film Insert

Shaded areas are printable areas.

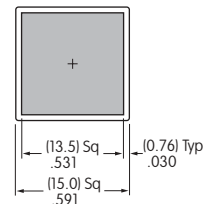
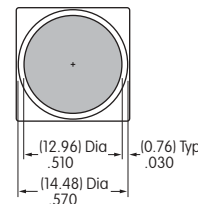
Beveled Cap



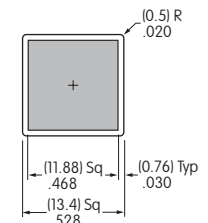
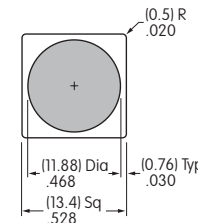
Flat Cap



Lens



Film Insert



Recommended Print Methods:

Screen Print on Lens or Film Insert; Pad Print on Lens. Epoxy based ink is recommended.

Film Insert: Clear Polyester

4 mil max. thickness

LEGEND PACKET FOR ORDERING CAPS WITH LEGENDS



1. To order caps with legends contact the factory and request the UB/UB2 Legend Packet.
2. Once you determine your desired legend, fill out the ordering work sheet included in the packet.
3. Return the completed work sheet to receive a quotation.