



Light Pipe Selector Guide

Optopipe® Lightpipes





Why Light Pipes?

Visual status indication provides for safe and reliable operation of electrical equipment, instruments, and electronic devices and also serves diagnostic purposes as well. While lamp holders, which utilize separate incandescent or neon bulbs and lens caps, dominated the market in the majority of the 20th century, LED-based light sources are predominantly used today to provide visual indication.

Technical Solutions

Light-pipes provide front-panel indication where:

- Traditional indicators are too large or other space constraints exist
- Indication is required over, around, or beneath front-panel components
- EMI/RFI concerns require location of the light source away from the front-panel
- Indication is desired after all mechanical design considerations were made

We also design light-pipes for non-diagnostic applications, including lighted company logos. Light loss between the LED and light-pipe interface must be considered and there is also additional transmission loss through the pipe or wherever there is a bend. The shape of the light-pipe also influences the output. Dialight's design engineers will recommend the best LED for use with each light-pipe.

Configuration and features

Almost any configuration or size can be accommodated and we currently offer standard solutions in:

Single Element	Round Lens	Vertical	Shielded	Over RS-232
Multiple Element	Square Lens	Horizontal	Textured Lens	Over SFP Cage
Single Row	Rectangular Lens	Vertical Right Angle	Polished Lens	Under PCB Mount
Multiple Row	Illuminated Corner	Horizontal Right Angle		

Mounting Consideration

Most light-pipes are mounted to a PCB by pressing into holes drilled into the PCB. Depending on the application, epoxy is also indicated for additional support. Some light-pipes are designed to press into the front-panel and rest on the PCB, just above the LED(s). Heat-staking is another process that is used to mount light-pipes in specific applications.

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The following pages are organized as a product overview. Additional information including detailed specs, are available at: www.dialight.com.

The most recent version of this selector guide can be found at:

www.dialight.com/assets/brochures_and_catalogs/indication/lightpipe_selector_guide.pdf

Dialight Optopipes®

Dialight's expertise in LED indication and lighting is apparent in our line of engineered light-pipes. Dialight has been a leading manufacturer of lightpipes for network communication and electronic equipment for more than 10 years. Our 200 standard and custom solutions are complemented by new designs resulting from customer requirements or market developments. Dialight's optical and mechanical engineers use the latest modeling tools to develop mechanical and optical simulations that ensure expected performance of the design. SLAs are available to represent the physical and optical characteristics of the design. Dialight also has an extensive optics lab for post-design measurement and analysis. With various single and multiple position products for either Panel Mount or PCB Mount oriented lightpipes already in production, we also have the added capability to manufacture custom solutions to meet your specific requirements.

Features and Benefits

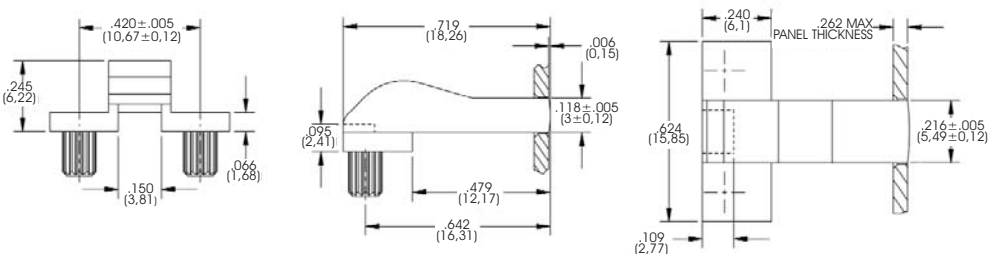
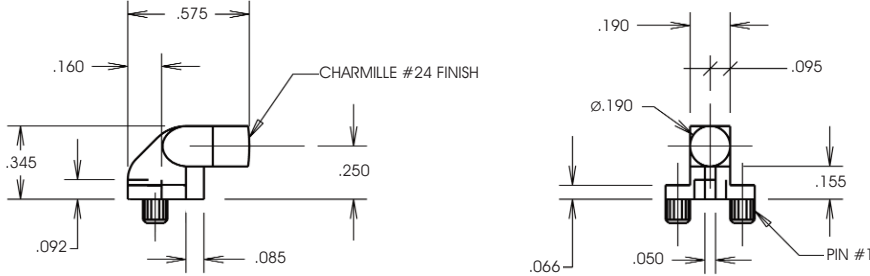
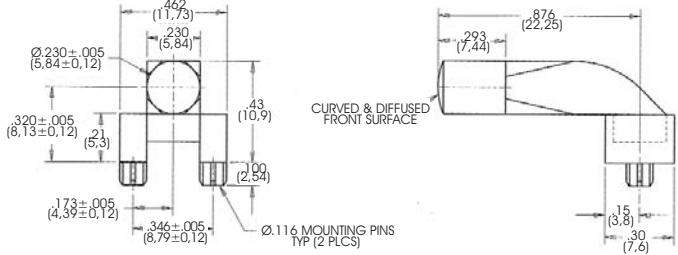
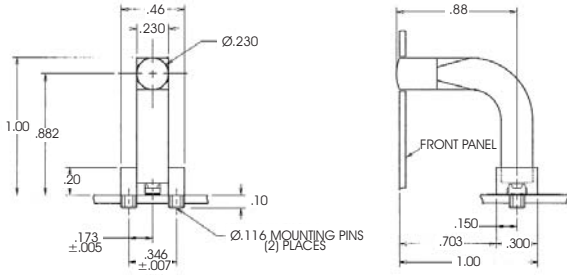
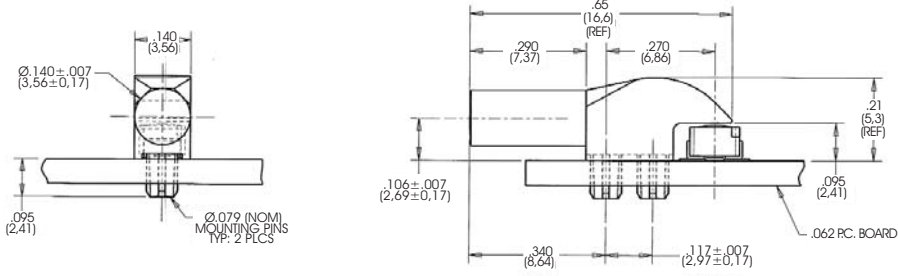
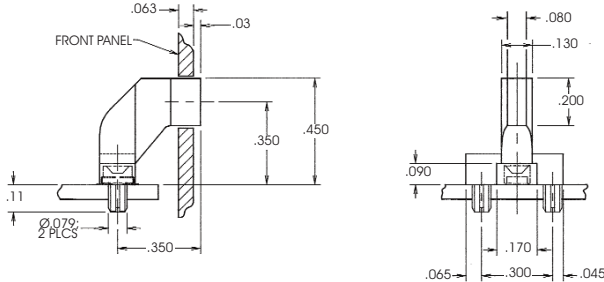
- Impervious to failure due to shock and vibration
- Up to 90% more efficient than traditional light sources when delivering monochromatic light
- Low-voltage and minimal power consumption
- Light is produced through photonic emission, not as a by-product of a radiating heat source
- Molded from RoHS compliant UL94-V0 Water Clear Polycarbonate with an oxygen index of 35%.

Typical Applications

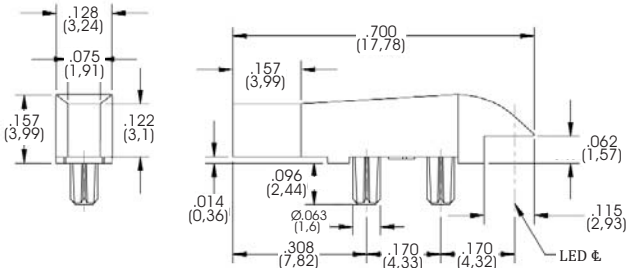
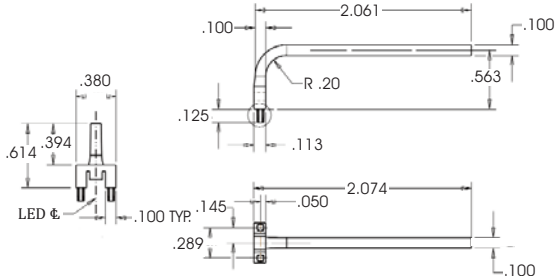
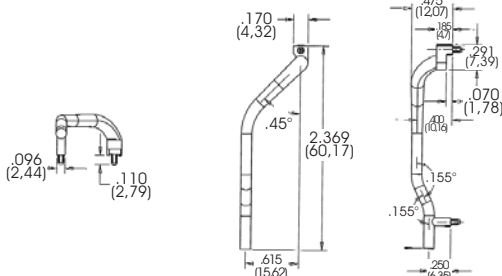
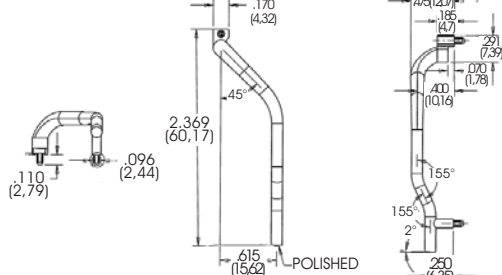
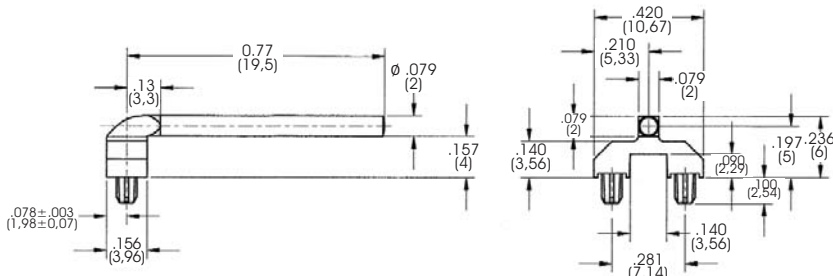
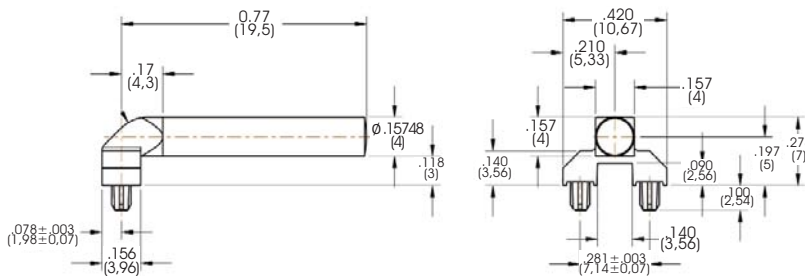
- Data center Infrastructure
 - Servers - Rack mount; blade; tower
 - Storage – High-performance storage subsystems for high- end enterprise
- Networking Equipment for enterprise data centers and telecom communication centers
 - Switches, routers, and network control equipment interconnected using fiber optic and high speed wiring
- Storage Networking Hardware
 - Fiber channel host bus adapter cards (HBAs); converged network adapter cards (CNAs); iSCSI adapter cards; InfiniBand adapter cards
- Next-Gen Wireless
 - Wireless Infrastructure
- Electronic Test & Measurement Instruments
- Communications Testing Equipment
- Process controls
- Automation
- Medical
- Handheld devices

To compliment our wide range of Lightpipes, Dialight is also the worldwide leader in applied LED technology including Circuit Board and Panel Mount Indicators, Surface Mount LEDs, LED signaling products for the transportation industry and LED lighting fixtures for industrial users. Dialight's Lightpipes are available through our extensive line of Sales Representatives and Distributors world-wide. For a complete listing that includes the ability to check stock status at our Distribution partners, please visit our website at www.dialight.com. The most current version of this catalog will always be available at: www.dialight.com/assets/brochures_and_catalogs/indication/lightpipe_selector_guide.pdf

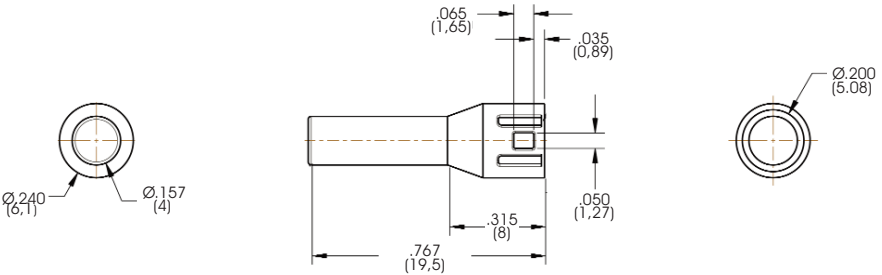
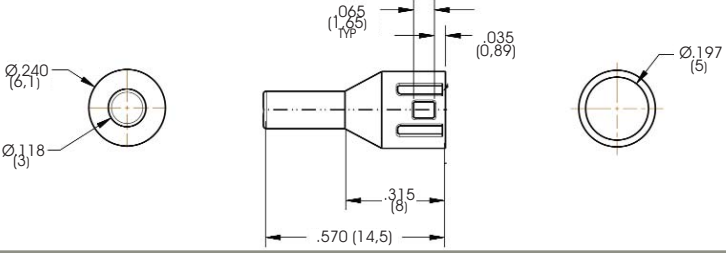
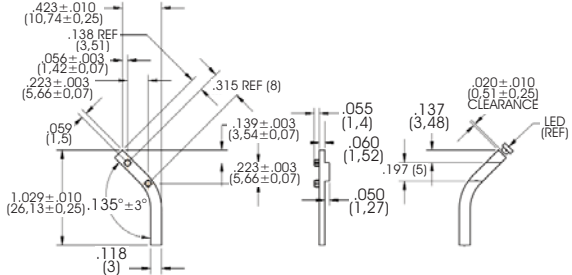
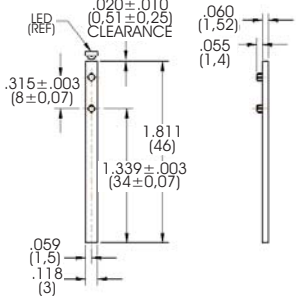
PCB Mount Single Position Horizontal

Part Number	Drawing	Suggested LED*
 515-1001F		597-3XX1-207F 597-77X1-207F
 515-1011F		597-3XX1-207F 597-77X1-207F
 515-1038F		597-3XX1-207F 597-77X1-207F
 515-1039F		597-3XX1-207F 597-77X1-207F
 515-1049F		597-3XX1-207F 597-77X1-207F
 515-1054F		597-3XX1-207F 597-77X1-207F

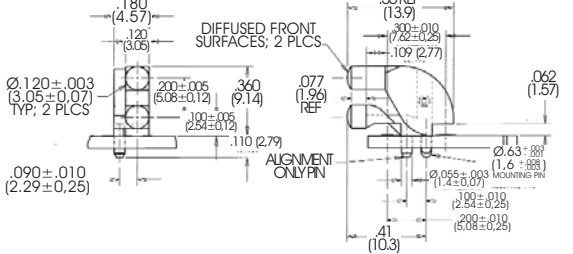
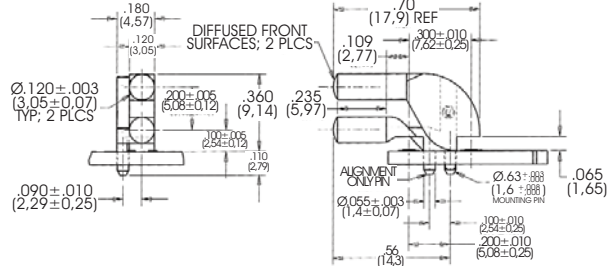
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED*
 515-1105F		597-3XX1-507F 597-77X1-507F
 515-1111F		597-3XX1-207F 597-77X1-207F
 515-1135F		597-3XX1-507F 597-77X1-507F
 515-1136F		597-3XX1-507F 597-77X1-507F
 515-1141-195F		597-3XX1-207F 597-77X1-207F
 515-1142-195F		597-3XX1-207F 597-77X1-207F

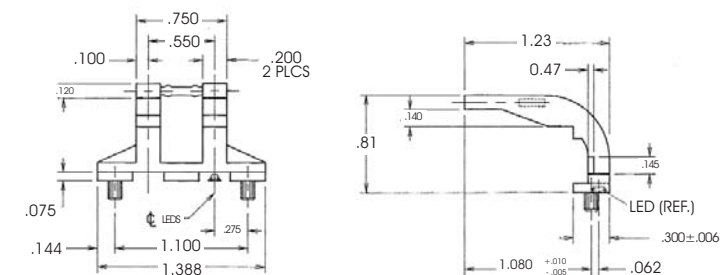
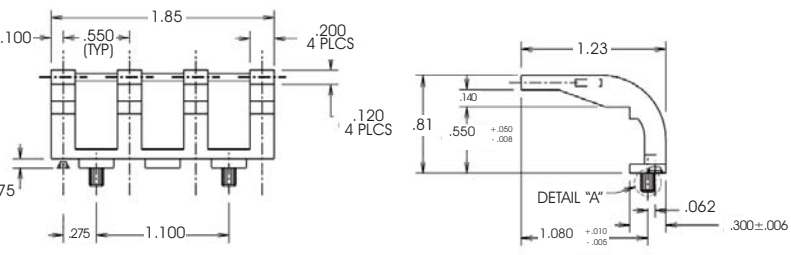
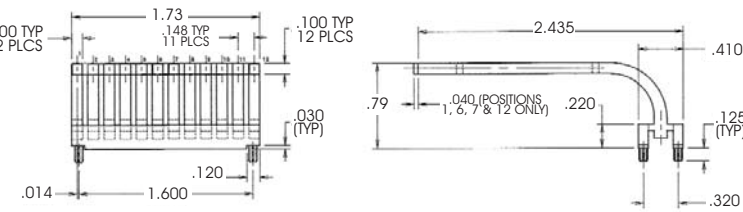
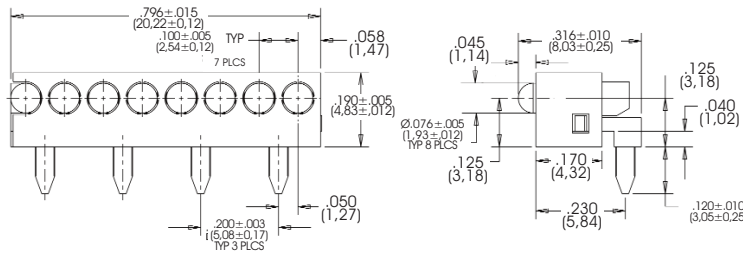
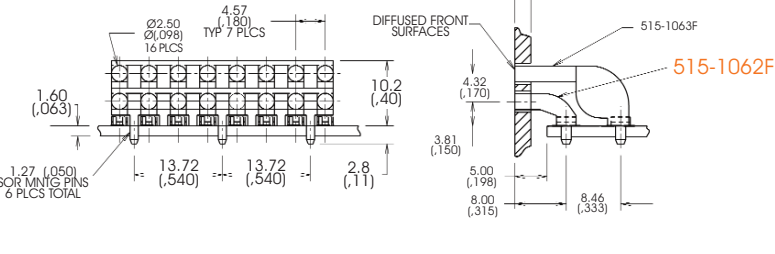
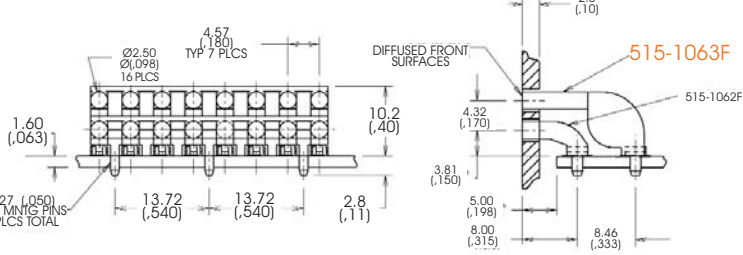
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED*
 515-1140-195F		ITT K5V2 Lighted Tactile Switch
 515-1149-145F		ITT K5V2 Lighted Tactile Switch
 515-1151F		597-2751-607F 597-2712-607F 597-2723-607F
 515-1154F		597-2751-607F 597-2712-607F 597-2723-607F

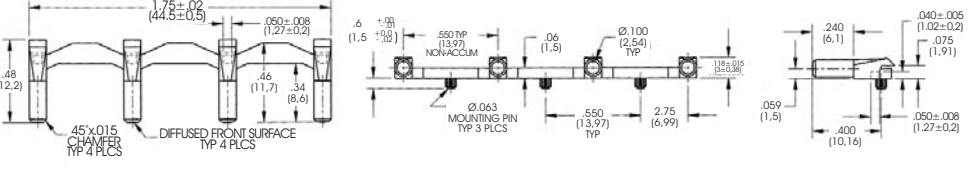
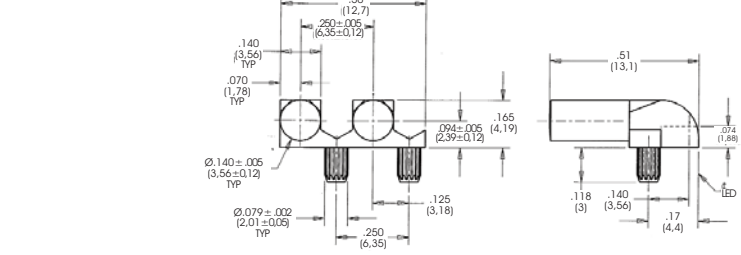
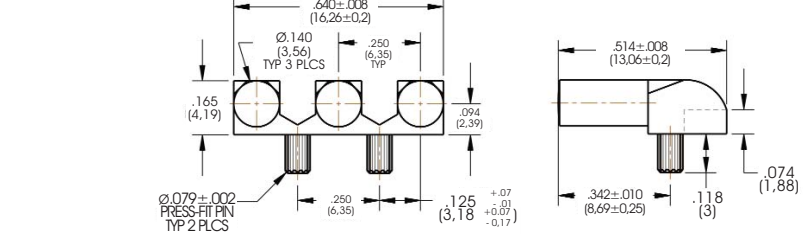
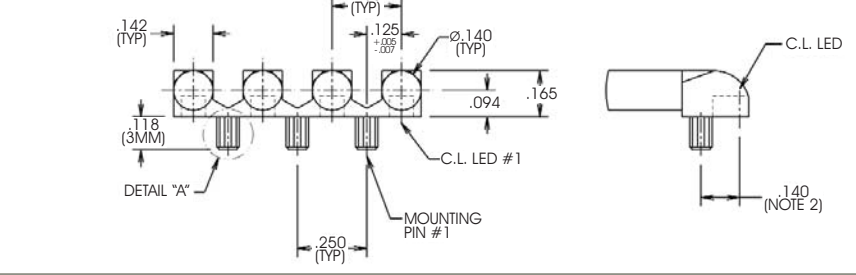
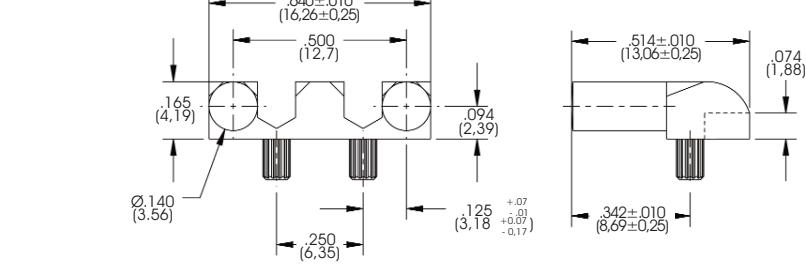
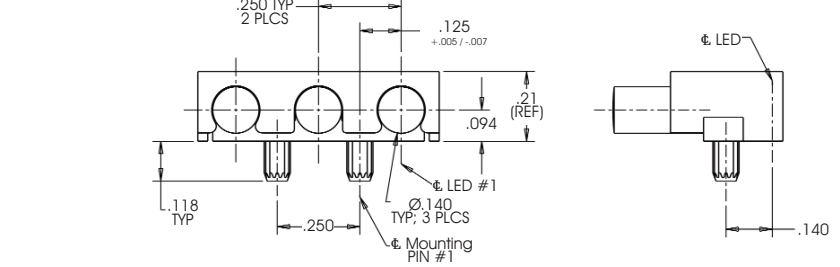
PCB Mount Multiple Position Vertical

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 515-1094F		597-3XX1-207F 597-77X1-207F

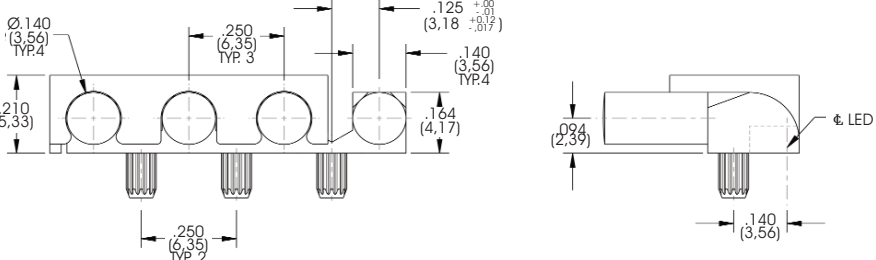
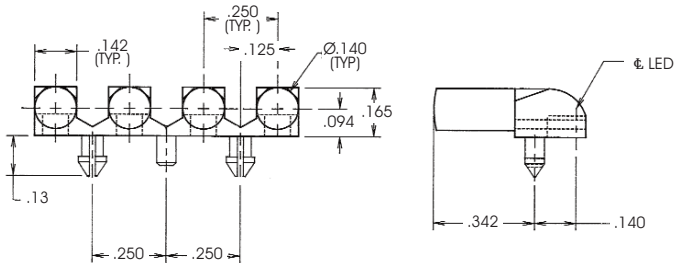
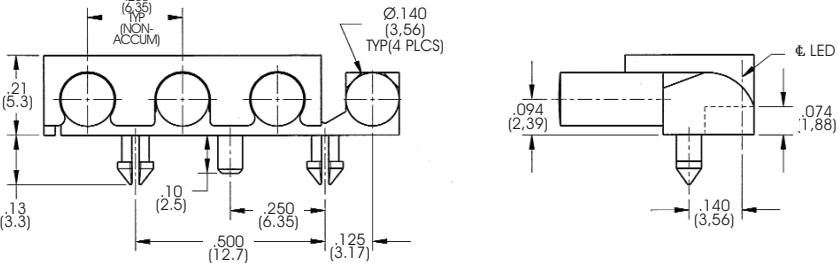
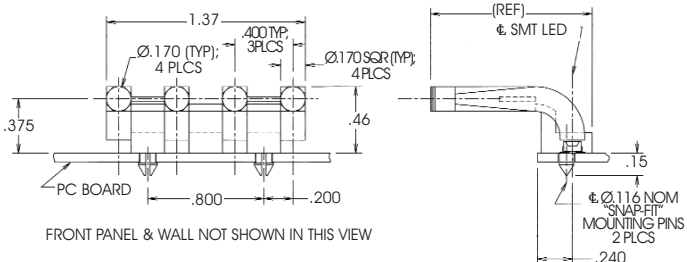
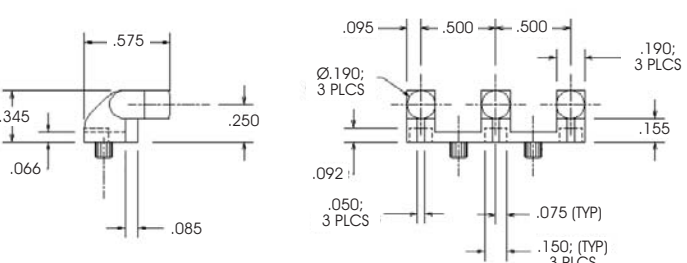
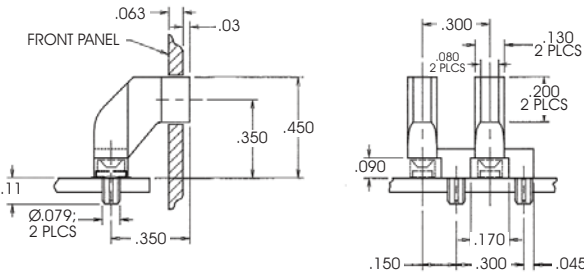
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED
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 515-1022F		597-3XX1-507F 597-77X1-507F
 515-1045F		597-3XX1-207F 597-77X1-207F
 515-1086F		597-5111-407F 597-5202-407F 597-5311-407F 597-5411-407F
 515-1062F		597-3XX1-507F 597-77X1-507F
 515-1063F		597-3XX1-507F 597-77X1-507F

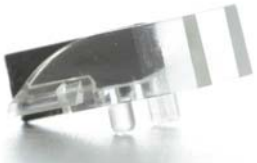
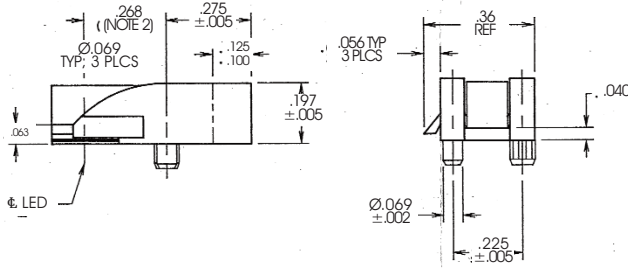
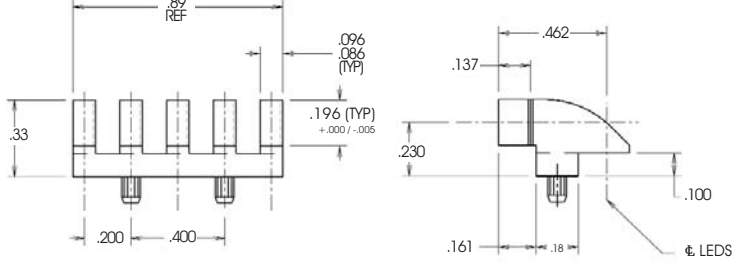
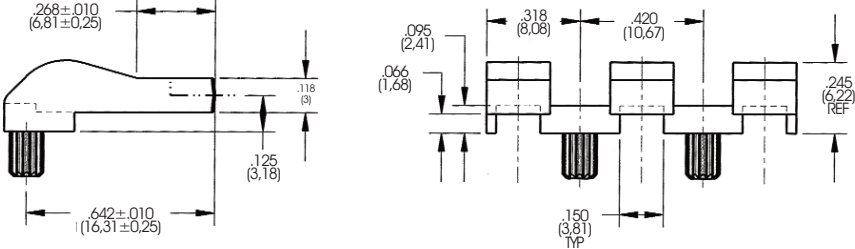
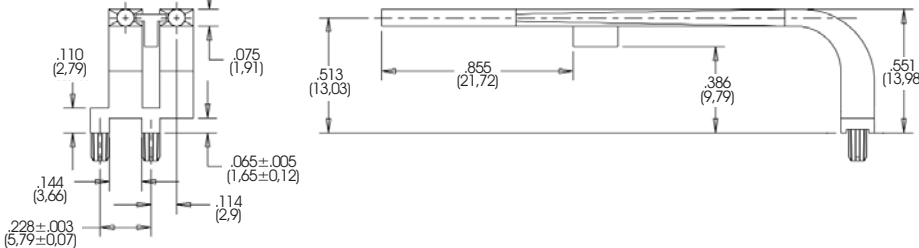
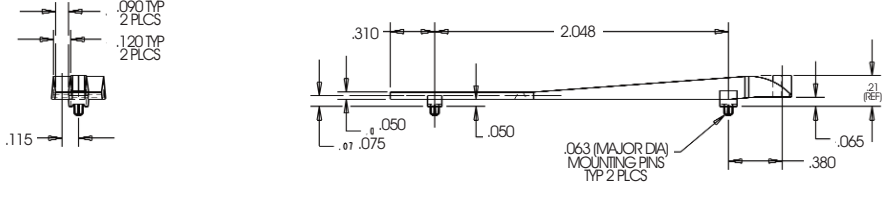
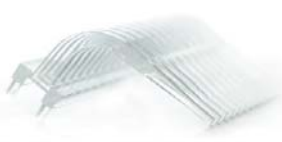
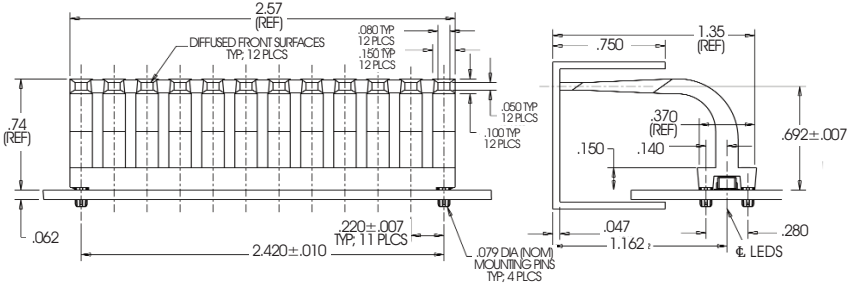
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED
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 515-1071F		597-3111-407F 597-3201-407F 597-3311-407F 597-3401-407F
 515-1069F		597-3111-407F 597-3201-407F 597-3311-407F 597-3401-407F
 515-1020F		597-3111-407F 597-3201-407F 597-3311-407F 597-3401-407F
 515-1020-804F		597-3XX1-407F
 515-1020-805F		597-3111-407F 597-3201-407F 597-3311-407F 597-3401-407F 598-8210-107F

* 'X' represents a variable part number. See page 17 for LED details.

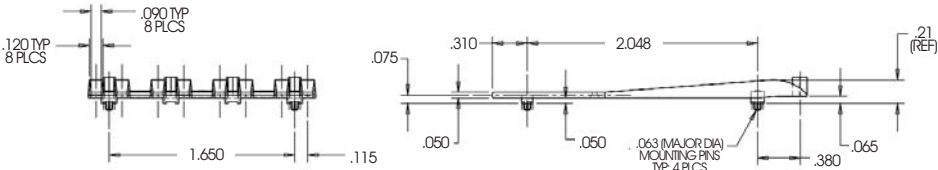
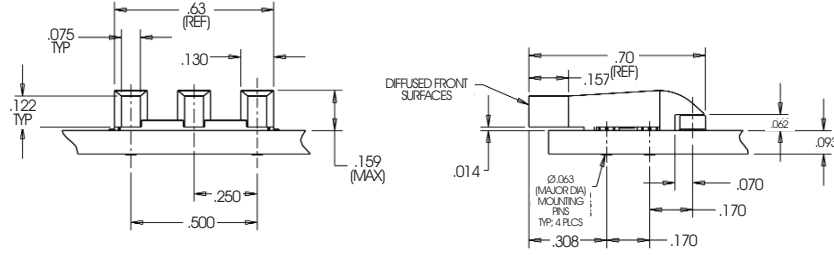
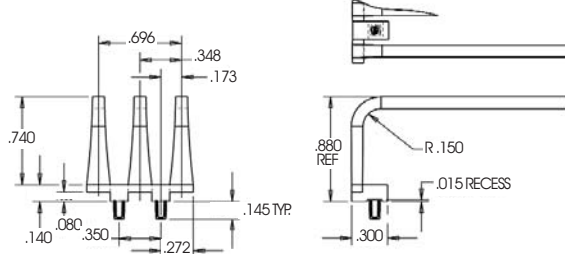
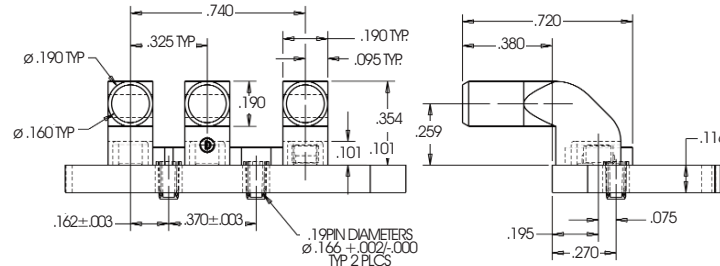
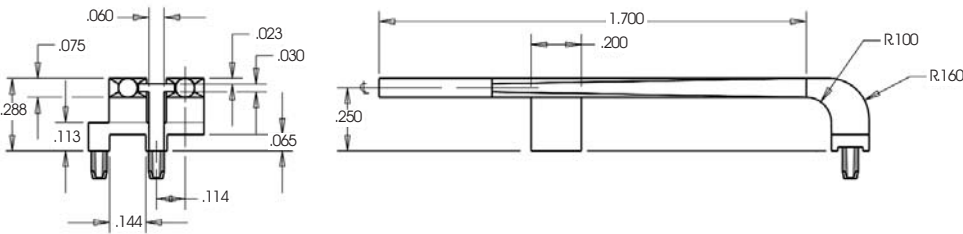
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 515-1048F		597-3XX1-407F 597-5X11-407F 597-5202-407F
 515-1048-801F		597-3XX1-407F 597-5X11-407F 597-5202-407F 598-8210-107F
 515-1037F		597-3XX1-207F 597-77X1-207F
 515-1010F		597-3XX1-207F 597-77X1-207F
 515-1051F		597-3XX1-207F 597-77X1-207F

* 'X' represents a variable part number. See page 17 for LED details.

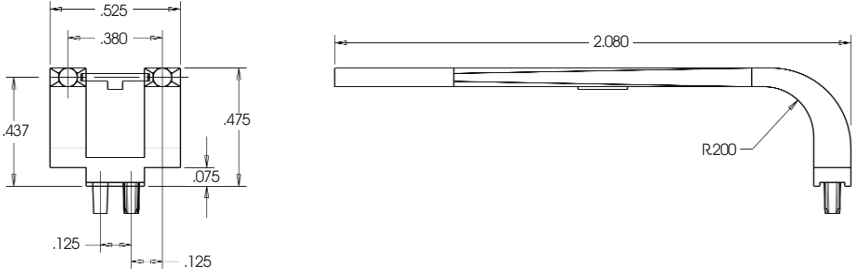
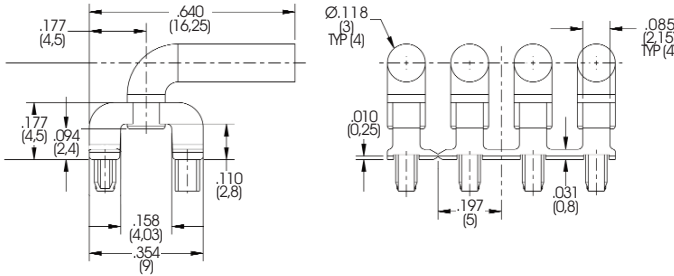
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 515-1000F		597-3XX1-207F 597-77X1-207F
 515-1118F		597-3XX1-507F 597-77X1-507F
 515-1110F		597-3XX1-507F 597-77X1-507F
 515-1093F		597-3XX1-207F 597-77X1-207F

* 'X' represents a variable part number. See page 17 for LED details.

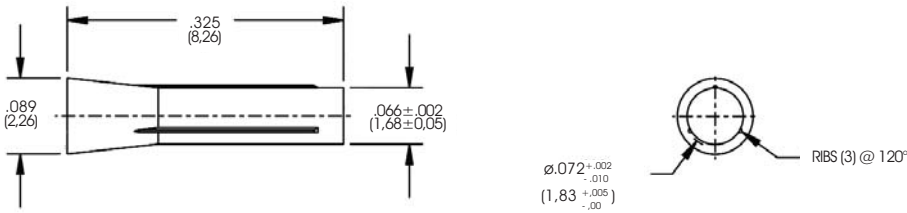
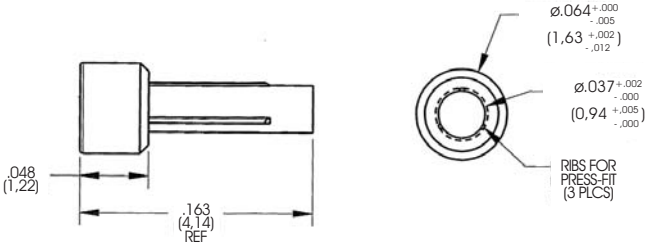
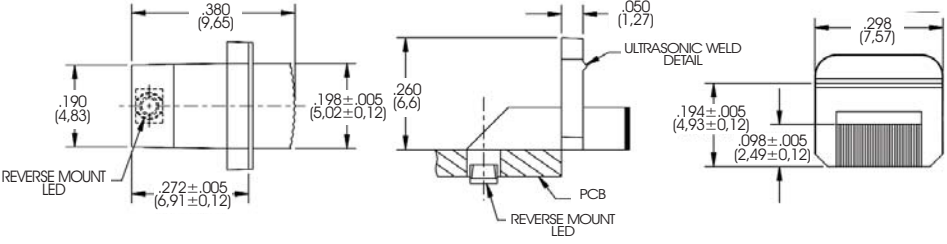
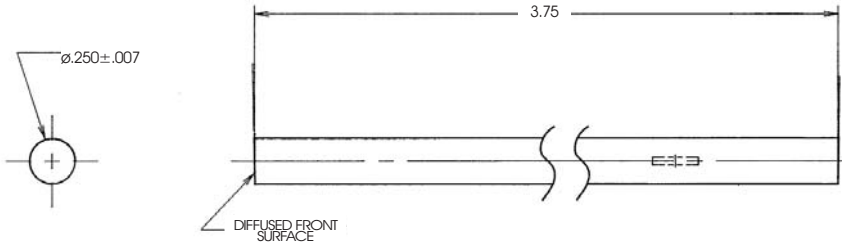


Part Number	Drawing	Suggested LED*
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 515-1106F		597-3XX1-507F 597-77X1-507F
 515-1113F		597-3XX1-207F 597-77X1-207F
 515-1120F		597-3XX1-207F 597-77X1-207F
 515-1126F		597-3XX1-507F 597-77X1-507F

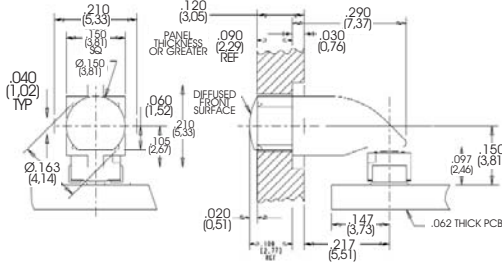
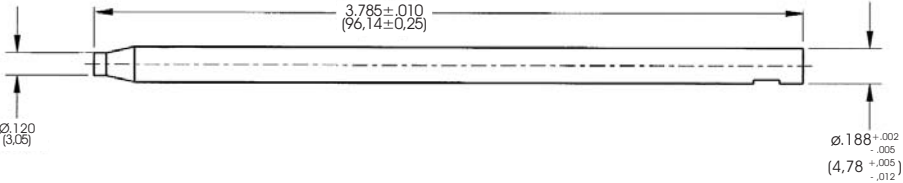
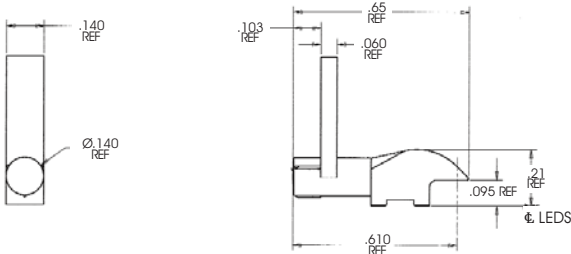
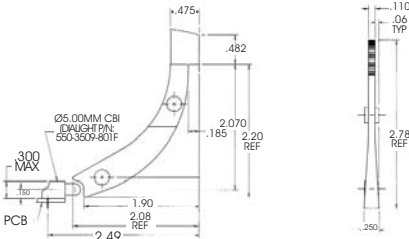
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED*
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 515-1143F		597-3XX1-207F 597-77X1-207F

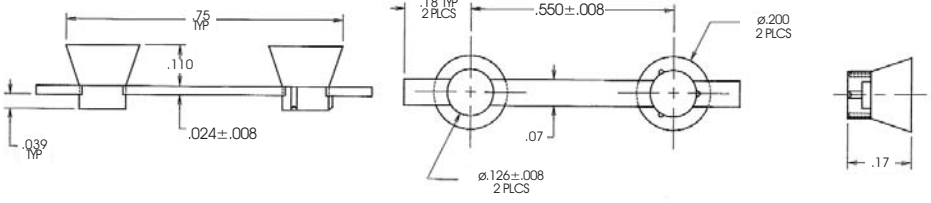
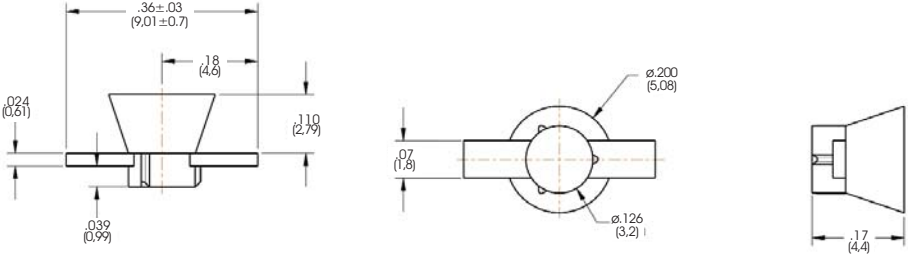
Panel Mount Single Position

 515-1027F		597-2XX1-407F 597-2X01-207F
 515-1016F		597-2XX1-407F 597-2X01-207F
 515-1004F		597-3111-407F 597-3201-407F 597-3311-407F 597-3401-407F 597-6XX1-607F 597-77X3-607F
 515-1047F		597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F

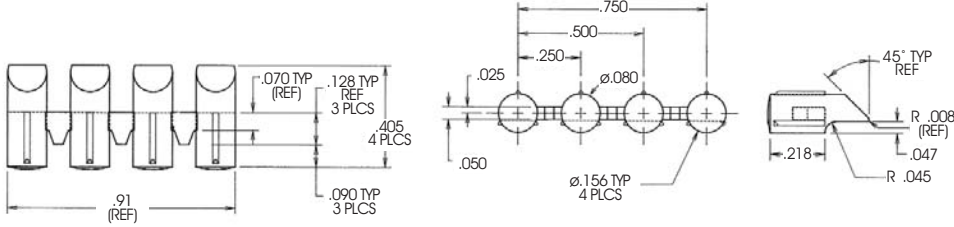
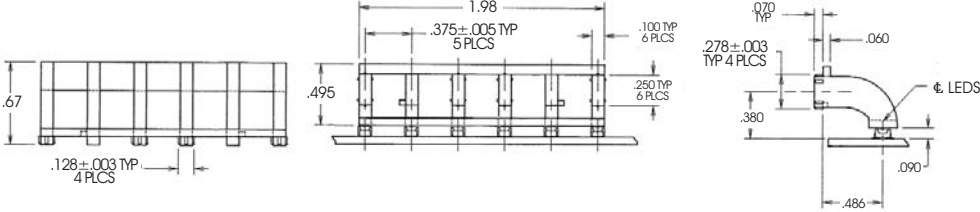
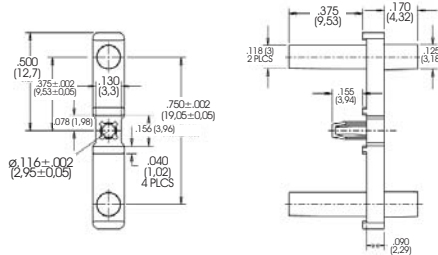
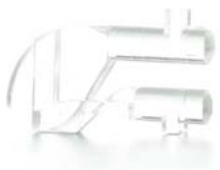
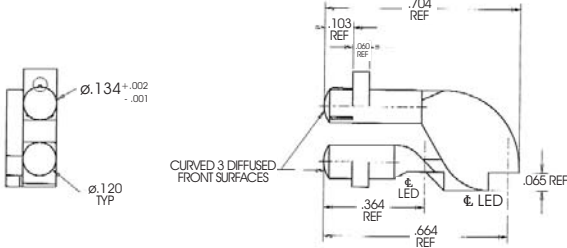
* 'X' represents a variable part number. See page 17 for LED details.

Part Number	Drawing	Suggested LED*
 515-1096F		597-3XX1-207F 597-77X1-207F
 515-1147F		597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F
 515-1157F		597-3XX1-207F 597-77X1-207F
 515-1044F		521-9247F 521-9249F 521-9251F

Panel Mount Multiple Position

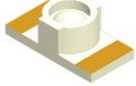
 515-1033F		521-9247F 521-9249F 521-9251F 597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F
 515-1033-801F		521-9247F 521-9249F 521-9251F

* 'X' represents a variable part number. See page 17 for LED details.

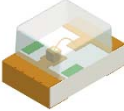
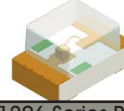
Part Number	Drawing	Suggested LED*
 515-1040F		597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F
 515-1046F		597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F
 515-1133F		597-3XX1-207F 597-77X1-207F 597-3XX1-507F 597-77X1-507F
 515-1156F		597-3XX1-507F 597-77X1-507F

* 'X' represents a variable part number. See page 17 for LED details.

Recommended Micro LED® Surface Mount LEDs

	Dialight Part Number	Color	Material	Dom. λ Typ. (nm)	Intensity Typ. (mcd)	Forward Voltage Typ. (V)	Viewing Angle (Deg.)	Height (mm)	Test Current (mA)	Type
1206 Series Package (3.2mm X 1.6 X Height) Reverse Mount										
	597-6001-607F	Red	AlInGaP	631	150	2.0	70	1.1	20	Single Color
	597-6201-607F	Orange	AlInGaP	605	260	2.0	70	1.1	20	Single Color
	597-6301-607F	Green	InGaP	525	410	3.0	70	1.1	20	Single Color
	597-6401-607F	Yellow	AlInGaP	587	240	2.0	70	1.1	20	Single Color
	597-6501-607F	Yellow-Green	AlInGaP	572	104	2.2	70	1.1	20	Single Color
	597-6601-607F	Blue	InGaP	470	112	3.0	70	1.1	20	Single Color
	597-6901-607F	White	InGaP	x .304,y.301	70	3	70	1.1	5	Single Color
	597-7703-607F	Red/Green	AlInGaP	631/571	55/45	2.0	130	1.1	20	Bi-Color
	597-7783-607F	Red/Blue	AlInGaP/InGaP	631/470	45/45	2.0/3.3	130	1.1	20	Bi-Color
5mm Through Hole LEDs										
	521-9247F	Red	-	635	60	2.6	35	5	10	Single Color
	521-9249F	Yellow	-	588	90	2.1	16	5	20	Single Color
	521-9251F	Green	-	565	70	2.7	24	5	10	Single Color

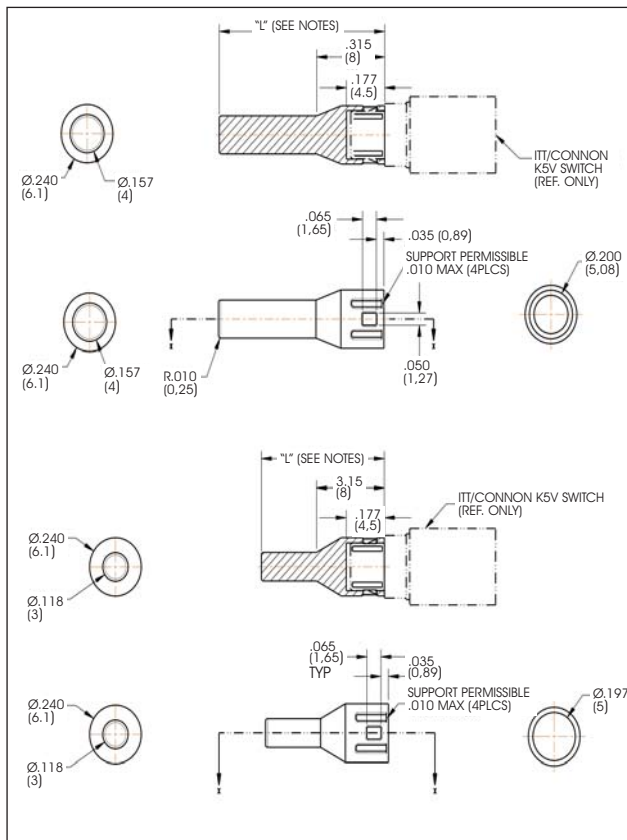
Recommended Micro LED® Surface Mount LEDs

ChipLED	Dialight Part Number	Color	Material	Dom. λ Typ. (nm)	Intensity Typ. (mcd)	Forward Voltage Typ. (V)	Viewing Angle (Deg.)	Height (mm)	Test Current (mA)	Type
0603 Series Package (1.6mm X 0.8mm X Height)										
	597-5004-407F	Red	AlInGaP	626	50	1.9	152	0.7	20	Single Color
	597-5112-407F	Red	AlGaAs	647	11.7	1.7	152	0.7	20	Single Color
	597-5203-407F	Orange	GaAsP	606	3.4	2.2	152	0.7	20	Single Color
	597-5213-407F	Orange	AlInGaP	605	65	1.9	152	0.7	20	Single Color
	597-5223-407F	Yellow	AlInGaP	590	65	1.9	152	0.7	20	Single Color
	597-5312-407F	Green	GaP	567	6.4	2.1	152	0.7	20	Single Color
	597-5412-407F	Yellow-Green	GaP	572	11.7	2.1	152	0.7	20	Single Color
0805 Series Package (2.0mm X 1.25mm X Height)										
	597-5111-407F	Red	AlGaAs	647	11.7	1.7	150	0.8	20	Single Color
	597-5202-407F	Orange	GaP	606	3.7	2.2	150	0.8	20	Single Color
	597-5311-407F	Green	GaP	567	6.4	2.1	150	0.8	20	Single Color
	597-5411-407F	Yellow	GaP	572	11.7	2.1	150	0.8	20	Single Color
1206 Series Package (3.2mm X 1.6mm X Height)										
	598-8210-107F	Red	AlInGaP	635	40	2.2	140	0.7	20	Single Color
1206 Series Package with Lens (3.0mm X 1.6mm X Height)										
	597-3111-407F	Red	GaAlAs	647	33.6	1.7	70	1.5	20	Single Color
	597-3201-407F	Orange	GaAsP/GaP	606	9	2.2	70	1.5	20	Single Color
	597-3311-407F	Green	GaP	567	12	2.1	70	1.5	20	Single Color
	597-3401-407F	Yellow	GaAsP	590	6	2.2	70	1.5	20	Single Color
	597-3021-407F	Red	AlInGaP	626	240	1.9	60	1.5	20	Single Color
	597-3003-407F	Red	AlInGaP	626	50	1.9	150	0.8	20	Single Color
	597-3212-407F	Orange	AlInGaP	605	65	1.9	150	0.8	20	Single Color
	597-3222-407F	Amber	AlInGaP	590	65	1.9	150	0.8	20	Single Color
	597-3612-407F	Blue	InGaP	470	133	3.3	50	1.5	20	Single Color
	597-3325-407F	Green	InGaP	525	415	3.3	50	1.5	20	Single Color
	597-3312-407F	Green	AlInGaP	561	42	2.1	60	1.5	20	Single Color
	597-3202-407F	Orange	AlInGaP	605	240	1.9	60	1.5	20	Single Color
1208 Series Package (3.0mm X 2.0mm X Height)										
	597-2111-407F	Red	GaAlAs	647	12.4	1.7	130	1	20	Single Color
	597-2201-407F	Amber	GaAsP/GaP	606	3	2.2	130	1	20	Single Color
	597-2311-407F	Green	GaP	567	5.2	2.1	130	1	20	Single Color
	597-2401-407F	Yellow	GaAsP/GaP	590	3	2.2	130	1	20	Single Color
	597-2712-607F	Red/ Green/ Blue	AlInGaP/ InGaP/ InGaP	624/ 525/ 470	110/ 280/ 100	2/ 3.5/ 3.5	130	1	20	Tri-Color
	597-2751-607F	Red/Green	AlInGaP	631/571	45/35	2	130	1	20	Bi-Color
	597-2723-607F	Yellow/Green	AlInGaP	589/571	75/35	2.0	130	1	20	Bi-Color
1208 Series Package with Reflector (3.0mm X 3.0mm X Height)										
	597-3021-507F	Red	GaAsP	653	6.3	2	110	1.3	20	Single Color
	597-3111-507F	Red	AlGaAs	662	16	1.75	110	1.3	20	Single Color
	597-3211-507F	Orange	GaAsP	612	10	2	110	1.3	20	Single Color
	597-3301-507F	Green	AlInGaP	573	25	2.2	110	1.3	20	Single Color
	597-3401-507F	Yellow	GaAsP	588	6.3	2.1	110	1.3	20	Single Color
PLCC-2 Series Package with Reflector (3.5mm X 2.8mm X Height)										
	597-3001-207F	Red	GaAsP/GaP	620	10	2	120	1.9	20	Single Color
	597-3121-207F	Red	AlGaAs	645	35.5	1.75	120	1.9	10	Single Color
	597-3211-207F	Orange	GaAsP/GaP	606	18.3	2	120	1.9	10	Single Color
	597-3301-207F	Green	GaAsP/GaP	570	19.6	2	120	1.9	10	Single Color
	597-3401-207F	Yellow	GaAsP/GaP	587	12.6	2	120	1.9	10	Single Color
	597-3601-207F	Blue	InGaP	465	11	3.5	120	1.9	10	Single Color
	597-3231-207F	Yellow	AlInGaP	587	100	2	120	1.9	20	Single Color
	597-3901-207F	White	InGaP	x: 0.32 y: 0.31	135	3.5	120	1.9	20	Single Color
	597-7701-207F	Red/Green	GaAsP/GaP	628/570	11.3/11.3	2	120	1.9	10	Bi-Color
	597-7721-207F	Yellow/Green	GaP/GaAsP	590/570	16/16	2.1/2.0	120	1.9	20	Bi-Color
	597-7731-207F	Red/Yellow	GaAlP	628/590	10.5/10.5	2.0/2.0	120	1.9	10	Bi-Color
	597-7741-207F	Orange/Green	GaAsP/GaP	606/570	11.3/17.6	2	120	1.9	10	Bi-Color
	597-7761-207F	Orange/Green	GaAsP/GaP	605/557	11.3/17.6	2	120	1.9	10	Bi-Color
	597-7781-207F	Red/Blue	InGaAlP/GaP	633/467	45/11	2.0/3.5	120	1.9	10	Bi-Color

NEW!



Optopipe® Lightpipe Actuator Extensions



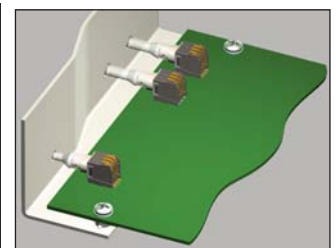
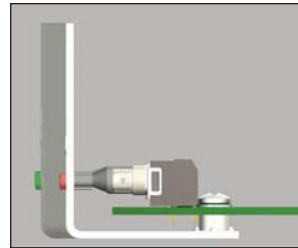
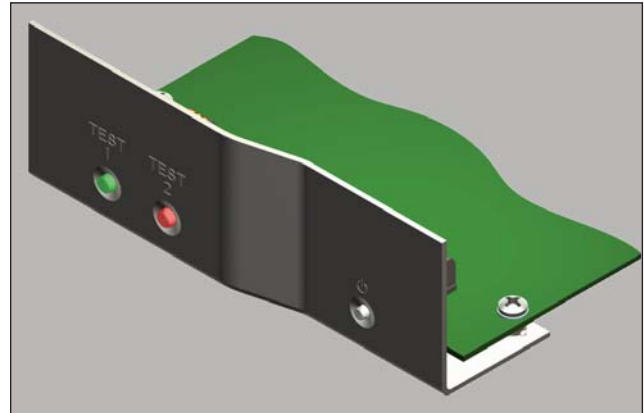
Features & Benefits:

- ▷ Fits C&K K5V2 illuminated LED switch
- ▷ Available in 3mm and 4mm diameters
- ▷ Variable length from 10mm to 25mm
- ▷ RoHS compliant
- ▷ Custom color options available (consult factory)
- ▷ Custom length options available (consult factory)
- ▷ Opaque colors available for use with C&K K5V2 nonilluminated switches



Application

Dialight Optopipe® actuator extensions are designed for use with C&K K5V2 lighted tactile switches. These snap-in clear lenses do not need to sit on the edge of a PCB and is offered in a variety of sizes to accommodate a range of panel depths. Dialight Optopipe® actuator extensions are ideal for server, storage, network infrastructure, automotive, and medical applications.



Order Code

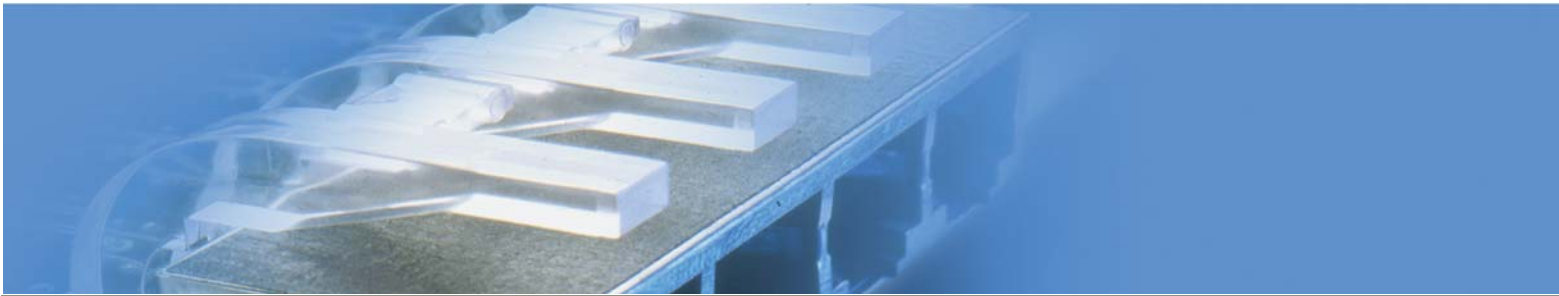
515-114 X-XXX-F
 Length in (mm)
 Diameter (mm)

Part Numbers: 4mm diameter

Part Number	Length
515-1140-100F	10mm
515-1140-120F	12mm
515-1140-125F	12.5mm
515-1140-130F	13mm
515-1140-195F	19.5mm
515-1140-225F	22.5mm
515-1140-235F	23.5mm
515-1140-250F	25mm

Part Numbers: 3mm diameter

Part Number	Length
515-1149-145F	14.5mm



Other Opto Electronic Products Offered by Dialight

40 Years of LED Experience

Prism® Series Right Angle SMT



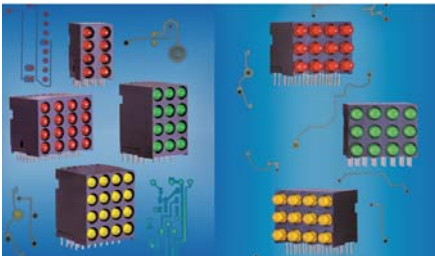
- ▷ Surface mountable solution with integrated optics
- ▷ 2mm & 3mm LEDs
- ▷ Tape and reel / pick and place compatible
- ▷ Can withstand higher temp RoHS solder process and eliminates need for secondary optics or separate process
- ▷ Available with square or round lens, and also in low current version
- ▷ Packaged in single, bi & tri level configurations

▷ RoHS compliant

CBI® Selector Guide

http://www.dialight.com/Assets/Brochures_And_Catalogs/Indication/SMT_selector_guide.pdf

Through Hole CBI® Circuit Board Indicators



- ▷ Housed LEDs in variety of configurations including:
Right angle, vertical & horizontal ganged arrays in single bi, tri, and quad blocks
- ▷ 2mm, 3mm & 5mm
- ▷ Perfect for direct view or backlighting applications
- ▷ Variety of colors and LED types including:
Single & bi-color, diffused, water-clear, tinted, super-bright, & high efficiency
- ▷ Over 2,500 variations, with custom LED placement available
- ▷ RoHS compliant

CBI® Selector Guide

www.dialight.com/Assets/Brochures_And_Catalogs/Indication/CBI_Selector_Guide.pdf

Based LED Bulbs 585 & 586 Series



- ▷ Replaces traditional miniature incandescent bulbs with rugged long-lasting and energy-efficient LEDs
- ▷ Design incorporates the most common base styles including:
T 1 3/4 Midget Flange, Wedge Base and Bi-Pin, T 3 1/4 Mini-Bayonet and Mini-Screw, T2 Telephone Slide and 15 mm Bayonet
- ▷ Voltages from 6, 14 and 28 VDC, 6-36 VDC multi-voltage operation and 125 VAC with non-polarized versions available
- ▷ Colors include – red, green, yellow, blue and white
- ▷ Check *Dialight's Incandescent / Based LED Cross Reference* for our specific replacement part number

Based LED Selector Guide

http://www.dialight.com/Assets/Brochures_And_Catalogs/Indication/Based_LED_selector_guide.pdf

LED Panel Mount Indicators



- ▷ Incorporating the latest LED technology in a tamper-proof enclosure
- ▷ Variety of sizes from .156" – 1"
- ▷ Operating voltages 2-28 VDC, 125 and 230 VAC
- ▷ Some feature a water-tight seal to NEMA 4X / IP66
- ▷ Available in red, green, yellow, orange, blue, cyan and white
- ▷ 556 series is UL recognized, Class 1, Div. II certified versions available
- ▷ Relampable Data Lamp series is available
- ▷ Most use lock washer and nut for secure mounting

LED Panel Mount Indicator Selector Guide

www.dialight.com/Assets/Brochures_And_Catalogs/Indication/VER-5x0x.pdf

