BULGIN

Indicators

This range of panel mounting LED indicators consists of many different bezel styles, types of LED's and colours. The range has developed to meet the many different needs of panel design including IP67 environmentally sealed versions for use where a front panel seal is needed.

The vandal resistant LED indicators are designed to complement the vandal resistant switches (see the Switch Section, page 177), they have similar profiles with stainless steel bodies, sealing to IP66 & 68 and are built to withstand harsh environments.
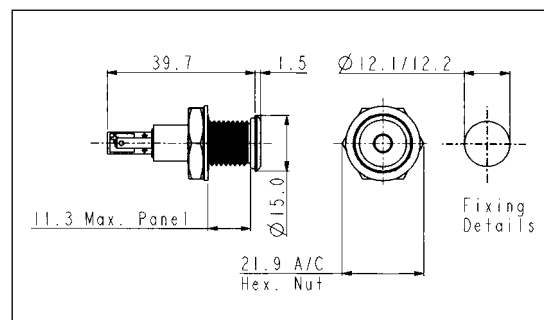
INDICATORS

Vandal Resistant LED Indicators

PROUD OF PANEL PROFILE

DX0505

- Solder Tag/2.8mm Tag Termination
- Sealed to IP67
- Red, Green, Yellow or Blue LED Options
- Wide Viewing Angle
- Shock and Vibration Resistant
- Stainless Steel body

39.7 1.5 Ø12.1/12.2
11.3 Max. Panel Ø15.0
21.9 A/C Hex. Nut
Fixing Details
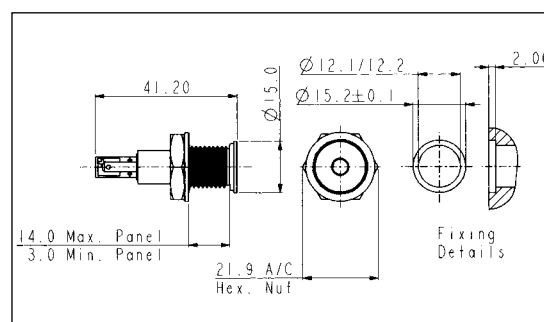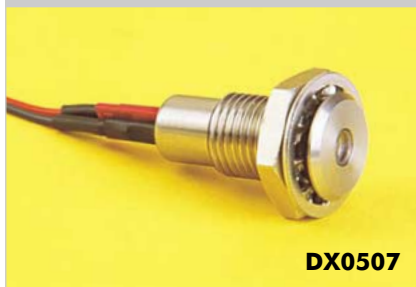
FLUSH PANEL PROFILE

DX0506

- Solder Tag/2.8mm Tag Termination
- Sealed to IP67
- Red, Green, Yellow or Blue LED Options
- Wide Viewing Angle
- Shock and Vibration Resistant
- Stainless Steel body

41.20 Ø15.0 Ø12.1/12.2 2.00
Ø15.2±0.1
14.0 Max. Panel 3.0 Min. Panel
21.9 A/C Hex. Nut
Fixing Details

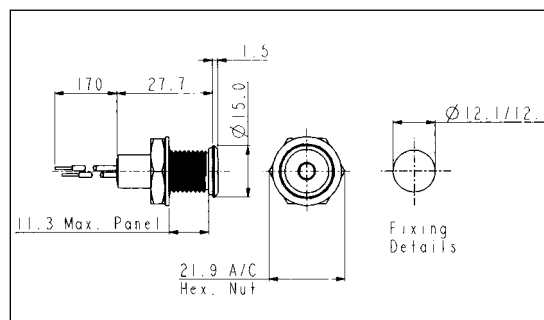| Specification	DX0505/Col/Voltage	DX0506/Col/Voltage	
Terminations:	Solder Tab/2.8mm Tab	Solder Tab/2.8mm Tab	
Forward Voltage:	Red 1.85V, Green 2.2V, Yellow 2.0V, Blue 3.8V	Red 1.85V, Green 2.2V, Yellow 2.0V, Blue 3.8V	
Cont. Forward Current: (max)	Red 30mA, Green 25mA, Yellow 30mA, Blue 25mA	Red 30mA, Green 25mA, Yellow 30mA, Blue 25mA	
Power Dissipation:	Red 100mW, Green 105mW, Yellow 125mW, Blue 120mW	Red 100mW, Green 105mW, Yellow 125mW, Blue 120mW	
Reverse Current: (@Vr = 5V)	Red 10μA max., Green 10μA max., Yellow 10μA max., Blue 50μA max.	Red 10μA max., Green 10μA max. Yellow 10μA max., Blue 50μA max.	
LED Luminous Intensity:	Red 2000mcd, Green 100mcd, Yellow 400mcd, Blue 1600mcd (typ)	Red 2000mcd, Green 100mcd, Yellow 400mcd, Blue 1600mcd (typ)	
Operating Temp. Range:	−40°C to +80°C	−40°C to +80°C	
Storage Temperature:	−40°C to +85°C	−40°C to +85°C	
Sealing (Front of panel):	Protection Classification IP67 to BS EN60529:1992	Protection Classification IP67 to BS EN60529:1992	
Materials: Body: Lens: O Ring (external): (internal):	Stainless Steel Polycarbonate UL94V-0 Nitrile Silicon	Stainless Steel Polycarbonate UL94V-0 Nitrile Silicon	
LED Colours:	/RD (Red), /GN (Green), /YL (Yellow) /BL (Blue), with colour coded insulator	/RD (Red), /GN (Green), /YL (Yellow) /BL (Blue), with colour coded insulator	
LED Voltage:	/12 (12V d.c.), /24 (24V d.c.) or /00 (no ballast resistor)	/12 (12V d.c.), /24 (24V d.c.) or /00 (no ballast resistor)	
RoHS	Compliant	Compliant	

INDICATORS

BULGIN

Vandal Resistant LED Indicators

PROUD OF PANEL PROFILE

DX0507

- Flying Lead Termination
- Sealed to IP67
- Red, Green, Yellow or Blue LED Options
- Wide Viewing Angle
- Shock and Vibration Resistant
- Stainless Steel body

FLUSH PANEL PROFILE

DX0508

- Flying Lead Termination
- Sealed to IP67
- Red, Green, Yellow or Blue LED Options
- Wide Viewing Angle
- Shock and Vibration Resistant
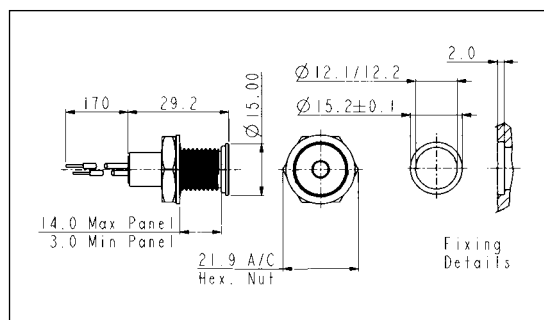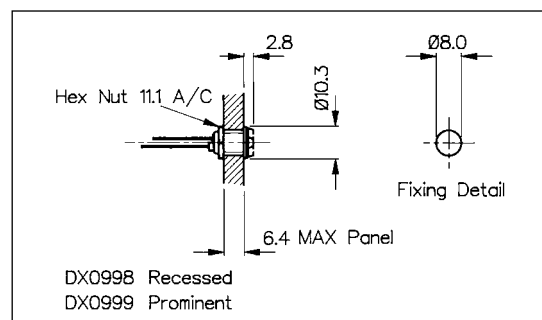- Stainless Steel body

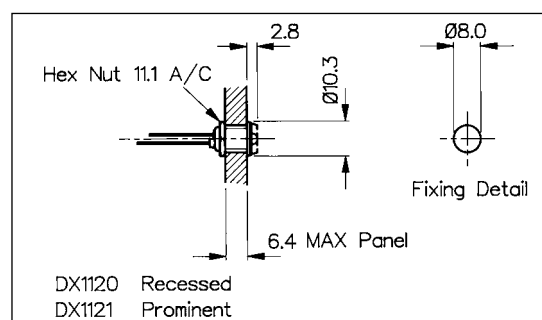| Specification	DX0507/Col/Voltage	DX0508/Col/Voltage	
Terminations:	Flying Leads	Flying Leads	
Forward Voltage:	Red 1.85V, Green 2.2V, Yellow 2.0V, Blue 3.8V	Red 1.85V, Green 2.2V, Yellow 2.0V, Blue 3.8V	
Cont. Forward Current: (max)	Red 30mA, Green 25mA, Yellow 30mA, Blue 25mA	Red 30mA, Green 25mA, Yellow 30mA, Blue 25mA	
Power Dissipation:	Red 100mW, Green 105mW, Yellow 125mW, Blue 120mW	Red 100mW, Green 105mW Yellow 125mW, Blue 120mW	
Reverse Current: (@Vr = 5V)	Red 10μA max., Green 10μA max., Yellow 10μA max., Blue 50μA max.	Red 10μA max., Green 10μA max., Yellow 10μA max., Blue 50μA max.	
LED Luminous Intensity:	Red 2000mcd, Green 100mcd, Yellow 400mcd, Blue 1600mcd (typ)	Red 2000mcd, Green 100mcd, Yellow 400mcd, Blue 1600mcd (typ)	
Operating Temp. Range:	–40°C to +80°C	–40°C to +80°C	
Storage Temperature:	–40°C to +85°C	–40°C to +85°C	
Sealing (Front of panel):	Protection Classification IP67 to BS EN60529:1992	Protection Classification IP67 to BS EN60529:1992	
Materials: Body: Lens: O Ring (external): (internal):	Stainless Steel Polycarbonate UL94V-0 Nitrile Silicon	Stainless Steel Polycarbonate UL94V-0 Nitrile Silicon	
LED Colours:	/RD (Red), /GN (Green), /YL (Yellow) /BL (Blue), with colour coded insulator	/RD (Red), /GN (Green), /YL (Yellow) /BL (Blue), with colour coded insulator	
LED Voltage:	/12 (12V d.c.), /24 (24V d.c.) or /00 (no ballast resistor)	/12 (12V d.c.), /24 (24V d.c.) or /00 (no ballast resistor)	
RoHS	Compliant	Compliant	

INDICATORS

5mm LED Indicators

CHROME PLATED BRASS BEZEL

- Chrome Plated Brass Bezel
- Prominent or Recessed Style
- Choice of LED Types and Colours

DX0998 **DX0999**

2.8   Ø8.0

Hex Nut 11.1 A/C   Ø10.3

Fixing Detail

6.4 MAX Panel

DX0998 Recessed
DX0999 Prominent

NYLON BEZEL

- Glass Filled Nylon Bezel
- Prominent or Recessed Style
- Choice of LED Types and Colours

DX1120 **DX1121**

2.8   Ø8.0

Hex Nut 11.1 A/C   Ø10.3

Fixing Detail

6.4 MAX Panel

DX1120   Recessed
DX1121   Prominent

Specification	DX0998, DX0999/Colour/Options	DX1120, DX1121/Colour/Options	
Bezel Material:	Brass, Chrome Plated	Glass filled Nylon	
Style:	Recessed (DX0998) Prominent (DX0999)	Recessed (DX1120) Prominent (DX1121)	
Operating Temp. Range:	Dependent on LED used	Dependent on LED used	
Storage Temperature:	Dependent on LED used	Dependent on LED used	
LED Colours:	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue), /TR (Tri Colour), /D1 (Dual Colour - Red/Green), /D2 (Dual Colour - Red/Amber), /D3 (Dual Colour - Green/Amber)	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue), /TR (Tri Colour), /D1 (Dual Colour - Red/Green), /D2 (Dual Colour - Red/Amber), /D3 (Dual Colour - Green/Amber)	
LED Options:	/02 (Flashing, Green or Red only)	/02 (Flashing, Green or Red only)	
	See Page 175 for LED options and specifications		
RoHS	Compliant	Compliant	

BULGIN

ALUMINIUM BEZEL - IP66 SEALED

DX1090 **DX1092**

- Aluminium Bezel, Black Anodised Finish
- IP66 Front Panel Sealed
- Prominent or Recessed Style
- Choice of LED Types and Colours

Hex Nut 11.1 A/C
3.6
Ø8.0
Ø10.3
5.6 MAX Panel
Fixing Detail
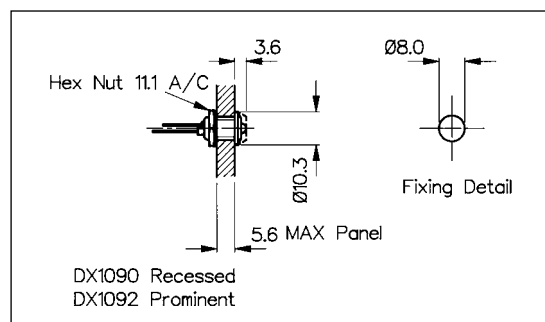
DX1090 Recessed
DX1092 Prominent
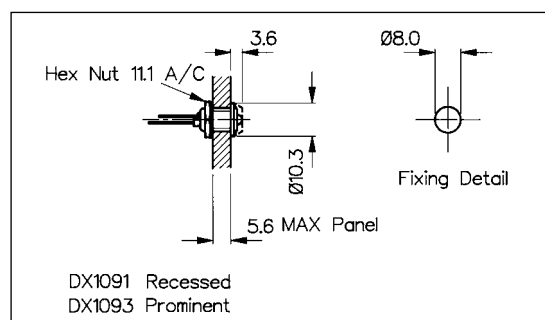
ALUMINIUM BEZEL - IP66 SEALED

DX1091 **DX1093**

- Aluminium Bezel, Clear Anodised Finish
- IP66 Front Panel Sealed
- Prominent or Recessed Style
- Choice of LED Types and Colours

Hex Nut 11.1 A/C
3.6
Ø8.0
Ø10.3
5.6 MAX Panel
Fixing Detail

DX1091 Recessed
DX1093 Prominent

Specification	DX1090, DX1092/Colour/Options	DX1091, DX1093/Colour/Options	
Materials:	Aluminium - Black	Aluminium - Clear	
Style:	Recessed (DX1090) Prominent (DX1092)	Recessed (DX1091) Prominent (DX1093)	
Operating Temp. Range:	Dependent on LED used	Dependent on LED used	
Storage Temperature:	Dependent on LED used	Dependent on LED used	
Sealing (Front of panel):	Protection Classification IP66 to BS EN60529: 1992 Torque 8ozf. in. (0.056Nm) min.	Protection Classification IP66 to BS EN60529: 1992 Torque 8ozf. in. (0.056Nm) min.	
Lead Solder Time:	260°C for 5 seconds max.	260°C for 5 seconds max.	
LED Colours:	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue), /TR (Tri Colour), /D1 (Dual Colour - Red/Green), /D2 (Dual Colour - Red/Amber), /D3 (Dual Colour - Green/Amber)	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue), /TR (Tri Colour), /D1 (Dual Colour - Red/Green), /D2 (Dual Colour - Red/Amber), /D3 (Dual Colour - Green/Amber)	
LED Options:	/02 (Flashing, Green or Red only)	/02 (Flashing, Green or Red only)	
	See Page 175 for LED options and specifications		
RoHS	Compliant	Compliant	

INDICATORS

4mm LED Indicators

CHROME PLATED BRASS BEZEL

- Chrome Plated Brass Bezel
- Prominent or Recessed Style
- Choice of LED Types and Colours

DX1116 **DX1118**

BLACK NICKEL PLATED BRASS BEZEL

- Black Nickel Plated Brass Bezel
- Prominent or Recessed Style
- Choice of LED Types and Colours
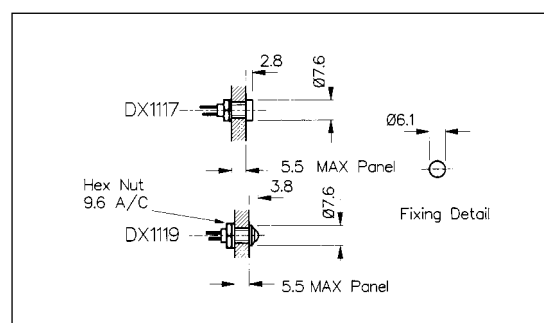
DX1117 **DX1119**


| Specification	DX1116, DX1118/Colour	DX1117, DX1119/Colour	
Bezel Materials:	Brass, Chrome Plated	Brass, Nickel Plated - Black	
Style:	Recessed (DX1116) Prominent (DX1118)	Recessed (DX1117) Prominent (DX1119)	
Operating Temp. Range:	Dependent on LED used	Dependent on LED used	
Storage Temperature:	Dependent on LED used	Dependent on LED used	
Lead Solder Time:	260°C for 5 seconds max.	260°C for 5 seconds max.	
LED Colours:	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue)	/RD (Red), /GN (Green), /YL (Yellow), /BL (Blue)	
RoHS	Compliant	Compliant	
	See Page 176 for LED specifications		

BULGIN

5mm LEDs STANDARD

Specification	Red	Green	Yellow	Blue
Luminous Intensity @20mA:	25mcd	20mcd	20mcd	21mcd
Forward voltage:	2.0V	2.0V	2.1V	3.5V
Cont. Forward Current (max):	30mA	25mA	30mA	30mA
Power Dissipation:	105mW (max) @20°C Ambient			120mW
Reverse Current:	10µA	10µA	10µA	50µA
Reverse Voltage:	5V (max)	5V (max)	5V (max)	5V (max)
Operating Temp:	−40°C to +85°C			−20°C to +80°C
Part No:	/RD	/GN	/YL	/BL
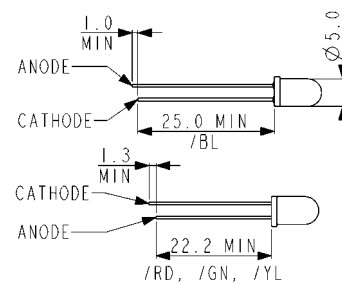
5mm LEDs FLASHING

Specification	Red	Green
Luminous Intensity @20mA:	1.2mcd	1.2mcd
Forward voltage:	2.0-15.0V	2.0-15.0V
Cont. Forward Current:	10-30mA	10-30mA
Power Dissipation:	200mW (max) @ 20°C ambient	
Flash Frequency @ 3V supply:	2.2Hz (typ)	
Operating Temp:	0°C to +70°C	
Part No:	/RD/02	/GN/02
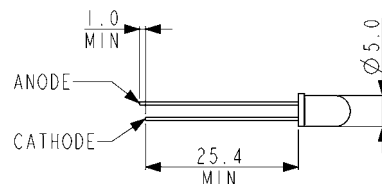
5mm LEDs TRI COLOUR

Specification	Red/Green/Amber
Luminous Intensity @10mA:	2.5mcd
Forward voltage:	2.4V
Cont. Forward Current:	30mA (max)
Power Dissipation:	150mW (max) @ 20°C Ambient
Reverse Current:	100µA
Reverse Voltage:	5V (max)
Operating Temp:	−40°C to +70°C
Part No:	/TR
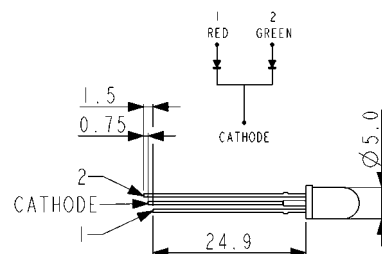
5mm LEDs DUAL COLOUR

Specification	Red/Green	Red/Amber	Green/Amber
Luminous Intensity:	4.5/5mcd	4.5/4mcd	4/5mcd
Forward voltage:	2.2V	2.2V	2.2V
Cont. Forward Current:	30mA/30mA	30mA/20mA	30mA/20mA
Power Dissipation:	100mW/100mW	100mW/60mW	100mW/60mW
Reverse Current:	100mA	100mA	100mA
Reverse Voltage:	5V (max)	5V (max)	5V (max)
Operating Temp:	−40°C to +85°C		
Part No:	/D1	/D2	/D3

INDICATORS
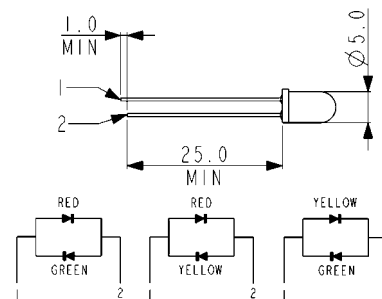
4mm LED options

4mm LEDs STANDARD

Specification	Red	Green	Yellow	Blue
Luminous Intensity @10mA:	2.5mcd	2.5mcd	2.5mcd	50mcd
Forward voltage:	2.0V	2.1V	2.0V	3.8V
Cont. Forward Current (max):	30mA	30mA	20mA	30mA
Power Dissipation (max) @ 20°C Ambient:	100mW	100mW	85mW	120mW
Reverse Current:	10μA	10μA	10μA	50μA
Reverse Voltage:		5V (max)		
Part No:	/RD	/GN	/YL	/BL
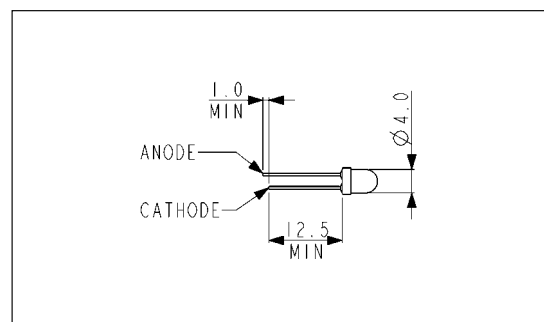
PART NO BREAKDOWN

DXxxxx / xx / xx

Bezel Type

LED Colour
RD = Red
GN = Green
YL = Yellow
BL = Blue
D1 = Dual Colour - 5mm (Red/Green)
D2 = Dual Colour - 5mm (Red/Amber)
D3 = Dual Colour - 5mm (Green/Amber)
TR = Tri Colour - 5mm (Red/Green/Amber)

LED Options
Blank = Standard
02 = Flashing - 5mm (Red or Green only)

Example:
DX1092/RD/02 = Black Aluminum IP66 Prominent Bezel, with Red flashing LED

INDICATORS