

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 different needs of panel design including **IP66 and 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), they have similar profiles with stainless steel bodies, sealing to IP66 & 68 and are built to withstand harsh environments.

Vandal Resistant LED Indicators	368
5mm LED Indicators	370
Indicator Lights	375
Low Voltage Lampholders	382
LED Lamps and LED Lampholders	384
Indicator Lights - Sealed to IP67	386



## 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



## 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



Specifications	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 EN60529:1992+A2:2013	Protection Classification IP67 to EN60529:1992+A2:2013
Materials		
Body:	Stainless Steel	Stainless Steel
Lens:	Polycarbonate UL94V-0	Polycarbonate UL94V-0
O Ring (external):	Nitrile	Nitrile
(internal):	Silicone	Silicone
Tightening Torque	0.5Nm - 0.9Nm (4.4lbf.in. - 8.0lbf.in.)	0.5Nm - 0.9Nm (4.4lbf.in. - 8.0lbf.in.)
Thread Size:	M12 x 1.25-6g	M12 x 1.25-6g
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

## 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



Specifications	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 EN60529:1992+A2:2013	Protection Classification IP67 to EN60529:1992+A2:2013
Materials		
Body:	Stainless Steel	Stainless Steel
Lens:	Polycarbonate UL94V-0	Polycarbonate UL94V-0
O Ring (external):	Nitrile	Nitrile
(internal):	Silicone	Silicone
Tightening Torque	0.5Nm - 0.9Nm (4.4lbf.in. - 8.0lbf.in.)	0.5Nm - 0.9Nm (4.4lbf.in. - 8.0lbf.in.)
Thread Size:	M12 x 1.25-6g	M12 x 1.25-6g
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

Chrome Plated Brass Bezel



DX0998

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



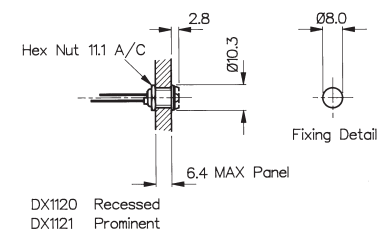
Nylon Bezel



DX1120

DX1121

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



Specifications	DX0998 Colour/Options	DX1120, DX1121/Colour/Options
Bezel Material:	Brass, Chrome Plated	Glass Filled Nylon
Style:	Recessed (DX0998)	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)
Thread Size:	0.312" x 32TPI	0.312" x 32TPI
<b>RoHS</b>	Compliant	Compliant

See Page 212 for LED options and specifications\*

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



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



Specifications	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 EN60529:1992+A2:2013	Protection Classification IP66 to EN60529:1992+A2:2013
Tightening Torque:	0.056Nm (8ozf.in.) min	0.056Nm (8ozf.in.) 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)
Thread Size:	0.312" x 32TPI	0.312" x 32TPI
<b>RoHS</b>	Compliant	Compliant

See Page 212 for LED options and specifications

Chrome Plated Brass Bezel



DX1116

DX1118

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



Black Nickel Pated Brass Bezel



DX1117

DX1119

- Aluminium, Black Anodised Bezel
- Prominent or Recessed Style
- Choice of LED Types and Colours



Specifications	DX1116, DX1118/Colour	DX1117, DX1119/Colour
Bezel Materials:	Brass, Chrome Plated	Aluminium, Black Anodised
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)
<b>RoHS</b>	Compliant	Compliant

See Page 213 for LED specifications\*

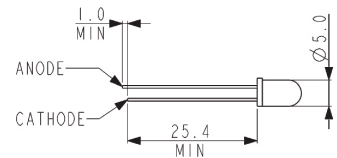
**5mm LEDs STANDARD**

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	20mcd
Forward voltage:	2.0-15.0V	2.0V
Cont. Forward Current (max):	10-30mA	25mA
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 @20mA:	2.5mcd
Forward voltage:	2.4V
Cont. Forward Current (max):	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**

Specifications	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



**4mm LEDs Standard**

Specifications	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)	5V (max)	5V (max)	5V (max)
Part No:	/RD	/GN	/YL	/BL



**Part No Breakdown**

DXxxxx	XX	XX
<b>Bezel Type</b>	<b>LED Colour</b> 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)	<b>LED Options</b> Blank = Standard 02 = Flashing - 5mm (Red or Green only)

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



# Indicator Lights

Neon, LED and Filament Lamp



## Key Features

- Neon, LED, mains LED or filament lamp
- Bezel sizes from 6.7 to 16.3mm diameter
- Red, amber, green, blue and clear lenses
- Red, yellow, green, blue and white LEDs
- Wide choice of styles

## Colours and voltages:



Available with Red, Amber, Green or Clear lenses  
100/130V (marked 110V),  
200/250V (marked 230V)



Red, Yellow, Green, Blue, White  
2.0/2.2V  
Resistors for other voltages available.



Red, Yellow, Green, Blue, White  
110-230V ac operation.



Available with Red, Amber, Green, Clear or Blue lenses  
6V, 12/14V, 24/28V.

Terminal	Type	Sealed	Illumination	Colour	Voltage	Options
<b>B</b> 2.8	<b>(B) 0566 A</b> 	 6.0  2.0 max  p. 340	<b>N</b> <b>L</b> <b>M</b>	Neon & Filament <b>R</b> Red	<b>1</b> LED No Resistor	<b>C</b> Chrome Bezel Finish
<b>L</b>						
<b>B</b> 2.8	<b>(B) 0566 B</b> 	 6.0  2.0 max  p. 340	<b>N</b> <b>L</b> <b>M</b>	Amber <b>G</b> Green	<b>3</b> 250V Neon	
<b>L</b>						
<b>B</b> 2.8	<b>(B) 0566 C</b> 	 6.0  2.0max  p. 340	<b>N</b> <b>L</b> <b>M</b>	Blue (Special Order) <b>C</b> Clear	<b>5</b> 12Vdc LED	
<b>L</b>						
<b>C</b> 6.3	<b>(C) 0145 AA</b> 	 5.8  3.0max  p. 340	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	LED <b>R</b>	<b>7</b> 12/14V Filament	
<b>L</b>						<b>8</b> 24/ 28V Filament
<b>W</b>	<b>(L) 1041 00</b> 	 6.3  6.3max  p. 340	<b>N</b> <b>L</b> <b>F</b>	Red <b>Y</b> Yellow	<b>9</b> 125/250Vac LED	
<b>L</b>						<b>B</b> Blue
<b>W</b>	<b>(L) 1045 00</b> 	 6.3  10.0max  p. 340	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Green		

# Indicator Lights

Neon, LED and Filament Lamp



Terminal	Type	Sealed	Illumination	Colour	Voltage	Options
L W	(L) 0245 00 	7.1 6.3 max p. 340	N L M F	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon	<b>C</b> Chrome Bezel Finish
L	L 2950 00 	8.0 0.8-1.6 p. 340	N L M F		<b>3</b> 250V Neon <b>4</b> 6Vdc LED	
L C 6.3	(L) 0195 BB 	8.0 0.8-3.0 p. 340	N F		<b>5</b> 12Vdc LED	
L	L 2951 00 	8.0 0.8-1.6 p. 340	N L M F		<b>6</b> 24Vdc LED <b>7</b> LED 12/14V Filament	
L H 4.8	H) 0568 A(*) 	8.0 0.8-3.5 p. 340	N L F		<b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	
L H 4.8	(H) 0568 B(*) 	8.0 0.8-3.5 p. 340	N L F		<b>G</b> Green <b>B</b> Blue	

## Dimensions

(B) 0566 A



(B) 0566 B



(B) 0566 C



(C) 0145 AA



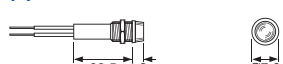
(L) 1041 00



(L) 1045 00



(L) 0245 00



L 2950 00



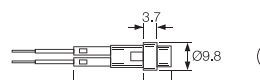
(L) 0195 BB



H) 0568 A(\*)



L 2951 00



(H) 0568 B(\*)



# Indicator Lights

Neon, LED and Filament Lamp



## Key Features

- Neon, LED, mains LED or filament lamp
- Bezel sizes from 6.7 to 16.3mm diameter
- Red, amber, green, blue and clear lenses
- Red, yellow, green, blue and white LEDs
- Wide choice of styles

## Colours and voltages:

NEON	DC LED	AC MAINS LED	FILAMENT
Available with Red, Amber, Green or Clear lenses 100/130V (marked 110V), 200/250V (marked 230V)	Red, Yellow, Green, Blue, White 2.0/2.2V Resistors for other voltages available.	Red, Yellow, Green, Blue, White 110-230V ac operation.	Available with Red, Amber, Green, Clear or Blue lenses 6V, 12/14V, 24/28V.

Terminal	Type	Illumination	Colour	Voltage	Options	Panel	Approval
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0273 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament	<b>1</b> LED No Resistor	<b>C</b> Chrome Bezel Finish	 9.0  2.0 max  p. 340	
			<b>R</b> Red	<b>2</b> 125V Neon			
			<b>A</b> Amber	<b>3</b> 250V Neon			
			<b>G</b> Green	<b>4</b> 6Vdc LED			
			<b>B</b> Blue (Special Order)	<b>5</b> 12Vdc LED			
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0278 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	<b>C</b> Clear	<b>6</b> 24Vdc LED	<b>C</b> Chrome Bezel Finish	 9.5  0.8-2.8  p. 340	
			<b>B</b> Blue (Special Order)	<b>7</b> 12/14V Filament			
			<b>C</b> Clear	<b>8</b> 24/ 28V Filament			
			<b>R</b> Red	<b>9</b> 125/250Vac LED			
			<b>L</b> LED				
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0276 AA</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	<b>G</b> Green		<b>C</b> Chrome Bezel Finish	 9.0  2.0 max  p. 340	
			<b>A</b> Amber				
			<b>R</b> Red				
			<b>Y</b> Yellow				
			<b>G</b> Green				
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0275 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	<b>B</b> Blue		<b>C</b> Chrome Bezel Finish	 10.0  11.5 max  p. 340	
			<b>R</b> Red				
			<b>Y</b> Yellow				
			<b>G</b> Green				
			<b>B</b> Blue				

# Indicator Lights

Neon, LED and Filament Lamp



Terminal	Type	Illumination	Colour	Voltage	Options	Panel	Approval
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0276 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 10.0 2.8 max p. 340	
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0277 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 10.0 12 max p. 340	
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0273 LL</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 10.0 0.6-2.0 p. 340	
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 2820 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 12.0 0.75-2.0 p. 340	
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 2821 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 12.0or12.7 ø12.0 = 0.8-2.5 ø12.7 = 1.1-2.5 p. 340	
<b>L</b> <b>K</b> 2.8 <b>H</b> 4.8 <b>C</b> 6.3	<b>(C) 0586 00</b> 	<b>N</b> <b>L</b> <b>M</b> <b>F</b>	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order) <b>C</b> Clear	<b>1</b> LED No Resistor <b>2</b> 125V Neon <b>3</b> 250V Neon <b>4</b> 6Vdc LED <b>5</b> 12Vdc LED <b>6</b> 24Vdc LED <b>7</b> 12/14V Filament <b>8</b> 24/ 28V Filament <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 12.5 0.8-1.5 p. 340	

## Dimensions

### (L) 0569 AW



### (C) 0275 00



### (C) 0273 LL



### (C) 0273 00



### (C) 0275 00



### (C) 2820 00



### (C) 0278 00



### (C) 0276 00



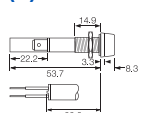
### (C) 2821 00



### (C) 0276 AA



### (C) 0277 00



### (C) 0586 00



# Indicator Lights

Neon, LED and Filament Lamp



## Key Features

- Neon, LED, mains LED or filament lamp
- Bezel sizes from 6.7 to 16.3mm diameter
- Red, amber, green and clear lenses
- Red, yellow, green, blue and white LEDs
- Wide choice of styles

## Colours and voltages:

<b>NEON</b>	<b>DC LED</b>	<b>AC MAINS LED</b>	<b>FILAMENT</b>
Available with Red, Amber, Green or Clear lenses 100/130V (marked 110V), 200/250V (marked 230V)	Red, Yellow, Green, Blue, White 2.0/2.2V Resistors for other voltages available.	Red, Yellow, Green, Blue, White 110-230V ac operation.	Available with Red, Amber, Green, Clear or Blue lenses 6V, 12/14V, 24/28V.

Terminal	Type	Illumination	Colour	Voltage	Options	Panel	Approval
L K 2.8 H 4.8 C 6.3	(C) 2870 00 	N L M F	Neon & Filament  <b>R</b> Red  <b>A</b> Amber  <b>G</b> Green  <b>B</b> Blue (Special Order)  <b>C</b> Clear	<b>1</b> LED No Resistor  <b>2</b> 125V Neon	<b>C</b> Chrome Bezel Finish	12.7 0.75-2.0 P. 340	   
L K 2.8 H 4.8 C 6.3	(C) 0589 00 	N L M F	Blue (Special Order)	<b>3</b> 250V Neon		12.7 0.8-1.5 p. 340	   
L	L 0081 00 	N L M F	LED	<b>4</b> 6Vdc LED  <b>5</b> 12Vdc LED		12.7 9.5 p. 340	  
L K 2.8 H 4.8 C 6.3	(C) 0177 00 	N L M F	LED	<b>6</b> 24Vdc LED  <b>7</b> 12/14V Filament		12.7 12.0max p. 340	   
L K 2.8 H 4.8 C 6.3	(C) 0067 00 	N L M F	LED	<b>8</b> 24/ 28V Filament  <b>9</b> 125/250Vac LED		12.7 1.14 max p. 340	   
L C 6.3	(C) 0180AA 	N L F	LED			12.7 19.0 max p. 340	  

# Indicator Lights

Neon, LED and Filament Lamp



Terminal	Type	Illumination	Colour	Voltage	Options	Panel	Approval
L C 6.3	(C) 0180BB 	N L F	Neon & Filament  <b>R</b> Red  <b>A</b> Amber  <b>G</b> Green  <b>B</b> Blue (Special Order)  <b>C</b> Clear  LED  <b>R</b> Red  <b>Y</b> Yellow  <b>G</b> Green  <b>B</b> Blue	<b>1</b> LED No Resistor  <b>2</b> 125V Neon  <b>3</b> 250V Neon  <b>4</b> 6Vdc LED  <b>5</b> 12Vdc LED  <b>6</b> 24Vdc LED  <b>7</b> 12/14V Filament  <b>8</b> 24/ 28V Filament  <b>9</b> 125/250Vac LED	<b>C</b> Chrome Bezel Finish	 13.5 0.9-1.14 p. 340	
L K 2.8 H 4.8 C 6.3	(C) 0579 00 	N L M F				 14.0 2.5 max p. 340	
C 6.3	(C) 1092 	N				 19.0 4.0max p. 340	

## Dimensions

(C) 2870 00



(C) 0067 00



(C) 1092



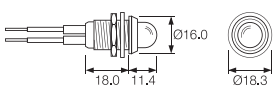
(C) 0589 00



(C) 0180AA



L 0081 00



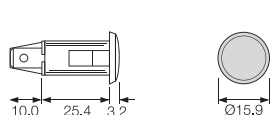
(C) 0180BB



(C) 0177 00



(C) 0579 00



# Indicator Lights

Neon, LED and Filament Lamp



## Key Features

- Neon, LED, mains LED or filament lamp
- Bezel sizes from 6.7 to 16.3mm diameter
- Red, amber, green and clear lenses
- Red, yellow, green, blue and white LEDs
- Wide choice of styles

## Colours and voltages:

NEON	DC LED	AC MAINS LED	FILAMENT
Available with Red, Amber, Green or Clear lenses 100/130V (marked 110V), 200/250V (marked 230V)	Red, Yellow, Green, Blue, White 2.0/2.2V Resistors for other voltages available.	Red, Yellow, Green, Blue, White 110-230V ac operation.	Available with Red, Amber, Green, Clear or Blue lenses 6V, 12/14V, 24/28V.

Terminal	Type	Illumination	Colour	Voltage	Options	Panel	Approval
L	L 0234 00	N	Neon & Filament	<b>1</b> LED No Resistor	C Chrome Bezel Finish	  	
			<b>R</b> Red	<b>2</b> 125V Neon			
			<b>A</b> Amber	<b>3</b> 250V Neon			
			<b>G</b> Green	<b>4</b> 6Vdc LED			
			<b>B</b> Blue (Special Order)	<b>5</b> 12Vdc LED			
			<b>C</b> Clear	<b>6</b> LED 24Vdc LED			
			<b>R</b> Red	<b>7</b> 12/14V Filament			
			<b>Y</b> Yellow	<b>8</b> 24/ 28V Filament			
			<b>G</b> Green	<b>9</b> 125/250Vac LED			
L	L 0233 00	N	Amber	<b>3</b> 250V Neon	   		
			<b>G</b> Green	<b>4</b> 6Vdc LED			
			<b>B</b> Blue (Special Order)	<b>5</b> 12Vdc LED			
			<b>C</b> Clear	<b>6</b> LED 24Vdc LED			
			<b>R</b> Red	<b>7</b> 12/14V Filament			
			<b>Y</b> Yellow	<b>8</b> 24/ 28V Filament			
			<b>G</b> Green	<b>9</b> 125/250Vac LED			
			<b>B</b> Blue				

## Dimensions

### H 0581 AY



### L 0234 00



### L 0233 00



Neon tube, resistor and flexible lead assembly, protected by "shrunk on" transparent sleeving.

## Key Features

- Up to 50V
- Red, Amber, Green, Blue and Clear
- Linestra/Philinea lamp holder

## Colours and voltages:

These lampholders are suitable for up to 50V max.

Colours - Red, Amber, Green, (Clear & Blue, check availability).

Terminal	Type	Colour	Options	Panel
T	<b>T0061 00 (LES)</b> 	Neon & Filament <b>R</b> Red <b>A</b> Amber <b>G</b> Green <b>B</b> Blue (Special Order)	<b>C</b> Chrome Bezel Finish	9.5 0.9-1.14 T85
C	<b>(C) 0067 00</b> 	<b>G</b> Green		12.7 1.14max T85
T 6.3	<b>(T) 0062 A0</b> 	<b>C</b> Clear		12.7 9.6max T85
T	<b>(C) 0062 M0</b> 	LED <b>R</b> Red		12.7 9.6max T85
S	<b>(S) 0095 00</b> 	<b>Y</b> Yellow <b>G</b> Green <b>B</b> Blue		T85

**T0061 00 (LES)**



**(C) 0062 M0**



**(T) 0062 A0**



**(C) 0067 00**



**(S) 0095 00**







C1090FE ---



P1090FL ---

## Key Features

- Up to 50V
- MES or MBC bulb
- Flat and domed lens
- Brass or nylon bodies
- Red, Amber, Green, Blue and Clear lenses

## Approvals and specifications

These lampholders are suitable for up to 50V max.

Colours - Red, Amber, Green, (Clear & Blue, check availability).  
Brass bodies have polished chrome finish.

## Dimensions and Options



F0445 MO  
P.V.C. Insulating terminal cover.



Terminal	Type	Colour	Options	Panel	Lens																																			
<b>C</b>  6.3 x 0.8 9.1	<b>1090</b> MES (E10)	<b>R</b> Red	<b>C</b> Chrome Bezel Finish	<b>1090 (MES lamps)</b> <table border="1"> <thead> <tr> <th></th> <th>Panel Hole Dia</th> <th>Body Material</th> <th>Dim A</th> <th>Dim B</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>19.0</td> <td>Brass</td> <td>35.0</td> <td>22.0</td> </tr> <tr> <td>D</td> <td>19.0</td> <td>Brass</td> <td>30.2</td> <td>22.0</td> </tr> <tr> <td>E</td> <td>19.0</td> <td>Nylon with chrome bezel</td> <td>30.2</td> <td>22.0</td> </tr> <tr> <td>G</td> <td>19.0</td> <td>Brass</td> <td>24.6</td> <td>22.0</td> </tr> <tr> <td>H</td> <td>19.0</td> <td>Nylon with chrome bezel</td> <td>24.6</td> <td>22.0</td> </tr> <tr> <td>L</td> <td>25.4</td> <td>Brass</td> <td>26.0</td> <td>31.5</td> </tr> </tbody> </table>		Panel Hole Dia	Body Material	Dim A	Dim B	A	19.0	Brass	35.0	22.0	D	19.0	Brass	30.2	22.0	E	19.0	Nylon with chrome bezel	30.2	22.0	G	19.0	Brass	24.6	22.0	H	19.0	Nylon with chrome bezel	24.6	22.0	L	25.4	Brass	26.0	31.5	<b>F</b> Flat 
					Panel Hole Dia	Body Material	Dim A	Dim B																																
		A			19.0	Brass	35.0	22.0																																
		D			19.0	Brass	30.2	22.0																																
		E			19.0	Nylon with chrome bezel	30.2	22.0																																
G	19.0	Brass	24.6		22.0																																			
H	19.0	Nylon with chrome bezel	24.6		22.0																																			
L	25.4	Brass	26.0		31.5																																			
<b>Y</b> Yellow																																								
<b>G</b> Green																																								
<b>B</b> Blue																																								
<b>C</b> Clear																																								
<b>T</b>  2.0 4.8 9.1 Solder	<b>1091</b> MBC (BA9s) (C and S Terminals only)		<b>1091 (MBC lamps)</b> <table border="1"> <thead> <tr> <th></th> <th>Panel Hole Dia</th> <th>Body Material</th> <th>Dim A</th> <th>Dim B</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>19.0</td> <td>Brass</td> <td>36.0</td> <td>22.0</td> </tr> <tr> <td>C</td> <td>19.0</td> <td>Nylon</td> <td>36.6</td> <td>22.0</td> </tr> <tr> <td>Q</td> <td>19.0</td> <td>Nylon (Chrome twin)</td> <td>36.6</td> <td>22.8</td> </tr> <tr> <td>M</td> <td>25.4</td> <td>Brass</td> <td>38.1</td> <td>31.5</td> </tr> </tbody> </table>		Panel Hole Dia	Body Material	Dim A	Dim B	B	19.0	Brass	36.0	22.0	C	19.0	Nylon	36.6	22.0	Q	19.0	Nylon (Chrome twin)	36.6	22.8	M	25.4	Brass	38.1	31.5	<b>V</b> MES (E10) 											
				Panel Hole Dia	Body Material	Dim A	Dim B																																	
		B		19.0	Brass	36.0	22.0																																	
		C		19.0	Nylon	36.6	22.0																																	
		Q		19.0	Nylon (Chrome twin)	36.6	22.8																																	
M	25.4	Brass		38.1	31.5																																			
<b>S</b>  9.1 Screw and Clamp		<b>1091 (MBC lamps)</b> <table border="1"> <thead> <tr> <th></th> <th>Panel Hole Dia</th> <th>Body Material</th> <th>Dim A</th> <th>Dim B</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>19.0</td> <td>Brass</td> <td>36.0</td> <td>22.0</td> </tr> <tr> <td>C</td> <td>19.0</td> <td>Nylon</td> <td>36.6</td> <td>22.0</td> </tr> <tr> <td>Q</td> <td>19.0</td> <td>Nylon (Chrome twin)</td> <td>36.6</td> <td>22.8</td> </tr> <tr> <td>M</td> <td>25.4</td> <td>Brass</td> <td>38.1</td> <td>31.5</td> </tr> </tbody> </table>		Panel Hole Dia	Body Material	Dim A	Dim B	B	19.0	Brass	36.0	22.0	C	19.0	Nylon	36.6	22.0	Q	19.0	Nylon (Chrome twin)	36.6	22.8	M	25.4	Brass	38.1	31.5	<b>L</b> No lens												
			Panel Hole Dia	Body Material	Dim A	Dim B																																		
	B		19.0	Brass	36.0	22.0																																		
	C		19.0	Nylon	36.6	22.0																																		
	Q		19.0	Nylon (Chrome twin)	36.6	22.8																																		
M	25.4		Brass	38.1	31.5																																			

# LED Lamps and LED Lampholders

LED Lampholders can be supplied with or without LEDs



## Key Features

- LED lampholders
- Supplied with or without LEDs
- Black or Chrome finish

## Colours and voltages:

Colours: Red, Yellow, Green and Blue LEDs  
(High Intensity is standard. Option of extra super bright).

Voltages: LEDs are available for direct connection to 2.0/2.2V or 12Vdc

For other voltages contact sales.

Terminal	Type	Body Colour	LED Colour	Voltage	Panel Cutout	Approval	Dimensions
W LED fitted	<b>(W) 1047 00</b> 	B Black	R Red	1 LED No Resistor	6.3 		
A LED not fitted			Y Yellow	4 6Vdc LED	T105 		
L LED & Wires fitted			G Green	5 12Vdc LED			
W LED fitted	<b>(L) 1048 00</b> 	— Blank	B Blue	6 24Vdc LED	8.0 		
A LED not fitted					T105 		
L LED & Wires fitted							
W LED fitted	<b>(W) 1050 00</b> 				8.0 	KEMA EUR	
A LED not fitted					T105 		
L LED & Wires fitted							
W LED fitted	<b>(L) 1035 0A</b> 				4.5 	KEMA EUR RU	
L LED & Wires fitted					T105 		
W LED fitted	<b>(L) 1036 0A</b> 				6.0 	KEMA EUR RU	
L LED & Wires fitted					T105 		
W LED fitted	<b>(L) 1037 0A</b> 				6.35 	KEMA EUR RU	
L LED & Wires fitted					T105 		

## Key Features

- ⊞ IP67 front bezel sealing
- ⊞ LED lampholders
- ⊞ Supplied with or without LEDs
- ⊞ Black or Chrome finish

## Colours and voltages:

Colours:  
Red, Yellow Green and Blue LEDs.  
(High Intensity is standard. Option of extra super bright).

Voltages:  
LEDs are available for direct connection to 2.0/2.2V or 12Vdc.  
For other voltages contact sales.

Terminal	Type	LED Colour	Voltage	Panel	Approval
<b>L</b> LED & Wires fitted 	<b>(L) 1048 00</b> 	<b>B</b> Blue	<b>6</b> 24Vdc LED	 8.0  5.5max  T105	
<b>W</b> LED fitted 	<b>(W) 1050 00</b> 			 8.0  7.0max  T105	
<b>A</b> LED not fitted 					
<b>L</b> LED & Wires fitted 	<b>(W) 1050 00</b> 			 8.0  7.0max  T105	

## Dimensions

### (L) 1048 00



### (W) 1050 00



### (W) 1050 00



## Properties

### Sealing

O-ring sealing equivalent to IP67, of both the LED to bezel, and bezel to panel is available where shown.

### Polarity

The nylon base mouldings are polarity marked.

### Body Material and Finish

Chromed brass or Black oxide coated brass.

### Lampholders only

Items prefixed 'A' are supplied without LEDs.

### LED wires or PVC covered wire leads

125mm min length wires, 6.3mm standard strip.  
Alternative colours, length and strip available.

## Key Features

- IP67 Panel Sealing
- Supplied complete with gaskets/'O' rings
- Neon, LED, mains LED or filament lamp
- Bezel sizes from 7.6 to 22.9mm diameter
- Red, amber, green, blue and clear lenses
- Red, yellow, green, blue and white LEDs
- Wide choice of styles

## Colours and voltages:

<b>NEON</b>  Available with Red, Amber, Green or Clear lenses 100/130V (marked 110V), 200/250V (marked 230V)	<b>DC LED</b>  Red, Yellow, Green, Blue, White 2.0/2.2V Resistors for other voltages available.	<b>AC MAINS LED</b>  Red, Yellow, Green, Blue, White 110-230V ac operation.	<b>FILAMENT</b>  Available with Red, Amber, Green, Clear or Blue lenses 6V, 12/14V, 24/28V.
--	---	--	--

Terminal	Type	Sealed	Illumination	Colour	Voltage	Option	Panel Cutout	Approval
L	(L) 1041 OS 	S Sealed	N L M F	R A G B C	1 LED No Resistor 2 125V Neon 3 250V Neon 4 6Vdc LED 5 12Vdc LED	C Chrome Bezel Finish	6.3 5.3max	KEMA
L	(L) 0245 OS 		N L M F	G B C	6 24Vdc LED		7.1 4.6max	KEMA
L C 6.3 K 2.8 H 4.8	(C) 0275 OS 		N L M F	C LED	7 12/14V Filament 8 24/ 28V Filament 9 125/250Vac LED		10.0 11.15max	KEMA
L C 6.3 K 2.8 H 4.8	(C) 0277 OS 		N L M F	R Y G B W			10.0 11.15max	KEMA
L C 4.8 K 2.8 H	(C) 0177 OS 		N L M F				12.7 11.15max	KEMA

(L) 1041 OS



(L) 0245 OS



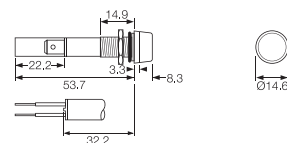
(C) 0275 OS



(C) 0277 OS



(C) 0177 OS



## Key Features

- ⊕ IP67 Panel Sealing
- ⊕ Bezel sizes from 7.6 to 22.9mm diameter
- ⊕ Supplied complete with gaskets/'O' rings
- ⊕ Red, amber, green, blue and clear lenses

## Colours and voltages:

These lampholders are suitable for up to 50V max.

Colours - Red, Amber, Green, (Clear & Blue, check availability).

Field installable filament lamps. See each series for the appropriate type.

Terminal	Type	Sealed	Colour	Options	Panel	Approvals	Dimensions
C 6.3	<b>C1090 FPS (MES)</b> 	<b>S</b> Sealed	<b>R</b> Red <b>A</b> Amber	Chrome Bezel Finish	19.0 4.0max T85		
C 6.3	<b>C1091 FQS (MBC)</b> 		<b>G</b> Green <b>B</b> Blue (Special)		7.1 4.6max		
T	<b>T0062 AOS (Midget flange) Chrome bezel</b> <b>T0063 AOS (LES) Chrome bezel</b> 		<b>C</b> Clear		10.0 11.15max		
T	<b>T0062 MOS (LES &amp; Midget flange)</b> <b>T0063 MOS (LES)</b> 				10.0 11.15max		

**F0445 MO**  
P.V.C. Insulating terminal cover.  
For use with C1090 & C1091



The majority of Arcoelectric indicator lights can be supplied with alternative light sources:

## Neon, Fluorescent, Filament lamp or LED

### NEON and FLUORESCENT LAMPS

#### Colours

Available with Red, Amber, Green, Blue or Clear lenses.

#### Maximum striking voltages

Standard brightness types 65Vac 90Vdc.

High brightness types 85Vac 135Vdc.

High brightness types are usually fitted.

#### Life

Typically 25,000 hours (Green fluorescent lamps 20,000 hours).

(Measured to a point when the light output of the lamp is half its original level.)

The end of life for a neon lamp is not usually a sudden failure.

#### False signals due to long wiring

It is possible for neon or fluorescent tubes to glow when they should be off.

The false signal is caused by the capacitance effect of fairly long wiring to the

indicator being adjacent to other live cables. This effect can be prevented in

most cases by fitting a 100k resistor across the supply wires close to the

indicator assembly.

### MATERIALS

Moulded bodies and bases . . . . .Nylon 6.6

Metal bodies and bezels . . . . .Chrome plated brass (except #)

Lenses . . . . .Polycarbonate

Terminals (most types) . . . . .Brass (electro-tin plated)

Terminals (exceptions) . . . . .Brass (flash silver\* or nickel\*\* plated)

Threaded metal nuts . . . . .Brass (nickel plated on 0275/7)

Other fixings . . . . .Call sales for details

\* R9, 0061, 0062, 0430, 0480, 1090, 1091, 6030, 7030, 8630, 8580

\*\* # 3130, 3160, 3161, 3221 have nickel plated terminals with steel screws

and plated polyamide bezel trims

### TEMPERATURE RATING

Authority	with Terminals	with Wire leads	
		PVC	SILICONE
European	T125°C	T105°C	T125°C
UL	T65/75°C	T65/75°C	

### SYMBOLS

 Terminals  
C 6.3, H 4.8, K 2.8

 Wire leads  
200mm long Standard

 Solid wires  
LED only

  Panel hole size

 Panel thickness

 Temperature rating

### FILAMENT LAMPS

#### Colours

Available with Red, Amber, Green, Clear or Blue lenses

#### LEDs - DC

#### Colours

Red, Yellow, Green, Blue and White.

#### Voltage

Basic voltage 2.0/2.2V. Some items are available with

integral resistors for 12V use. For details of resistors

required for higher voltages, please call sales.

#### Current

Maximum continuous forward current 20mA

#### Life

>100,000hrs

#### LEDs - AC

#### Colours

Red, Yellow, Green, Blue and White.

#### Voltage

Rated up to 230V ac, suitable for use at 110V and 230V ac.

#### Current

<3mA

#### Life

>100,000hrs

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А