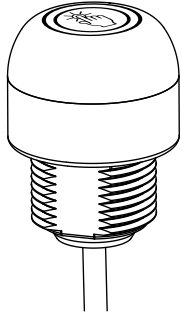


# EZ-LIGHT® Touch Gen 2 K30 FDA-Grade Series Illuminated Multipurpose Buttons



## Datasheet

General purpose multicolor indicator with independent momentary touch button output



- FDA-grade materials; rated to IEC IP67, IP68, and IP69K
- Laser marked information withstands aggressive cleaning procedures
- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, cost-effective, and easy-to-install multicolor indicator with touch button
- Two independent colors in one unit—Color 2 overrides Color 1
- Available with PNP and NPN inputs/outputs, depending on model
- Ergonomically designed to eliminate hand, wrist, and arm stresses associated with repeated switch operation; require no physical force to operate
- Can be actuated with bare hands or in gloves
- 12 to 30 V dc operation

## Models

Model <sup>1</sup>	I/O Type	Output State	Light Color 1 (Power Applied)	Light Color 2 (Input Active)	Connection
K30APT2FXRF2QP	PNP	N.O.	-	Red	2 m (6.5 ft) unterminated PVC-jacketed cable or 150 mm (6 in) pigtail PVC cable with a 5-pin M12/Euro-style male, stainless steel, quick disconnect (QD)
K30APT2FXGF2QP			-	Green	
K30APT2FGRF2QP			Green	Red	
K30APT2FRGF2QP			Red	Green	
K30ANT2FXRF2QP	NPN		-	Red	
K30ANT2FXGF2QP			-	Green	
K30ANT2FGRF2QP			Green	Red	
K30ANT2FRGF2QP			Red	Green	

## Specifications

Supply Voltage  
12 to 30 V dc

Supply Current  
55 mA max current (exclusive of load)

Supply Protection Circuitry  
Protected against reverse polarity and transient voltages

Output Rating  
Maximum Load: 150 mA  
ON-state saturation voltage: < 2 V at 10 mA dc; < 2.5 V at 150 mA dc  
OFF-state leakage current: <10 µA at 30 V dc

Output Response Time  
150 milliseconds On and Off

Power-Up Delay  
300 milliseconds

Connections  
2 m (6.5 ft) PVC integral cable or 150 mm (6 in) pigtail PVC cable with a 4-pin M12/Euro-style male, stainless steel, quick disconnect (QD)

Construction  
Base, dome, and nut: FDA-grade polycarbonate

Mounting  
M22 × 1.5 Threaded base, max torque 2.25 N·m (20 in-lbf)

<sup>1</sup> Integral QD models only are listed.

- To order the 2 m (6.5 ft) cable models, omit suffix QP from the model number (example, K30APT2FXRF2).
- A model with a QD requires a mating cable (see Cordsets).



Environmental Rating  
IEC IP67, IP69K per DIN 40050-9.

Operating Conditions  
Temperature: -40 °C to +50 °C (-40 °F to +122 °F)  
Humidity: 90% at +50 °C maximum relative humidity (non-condensing)

Storage Temperature  
-40 °C to +70 °C (-40 °F to +158 °F)

Vibration and Mechanical Shock  
Vibration 10 Hz to 55 Hz 1.0 mm p-p amplitude per IEC 60068-2-6  
Shock 30G 11 ms duration, half sine wave per IEC 60068-2-27

Certifications



Required Overcurrent Protection

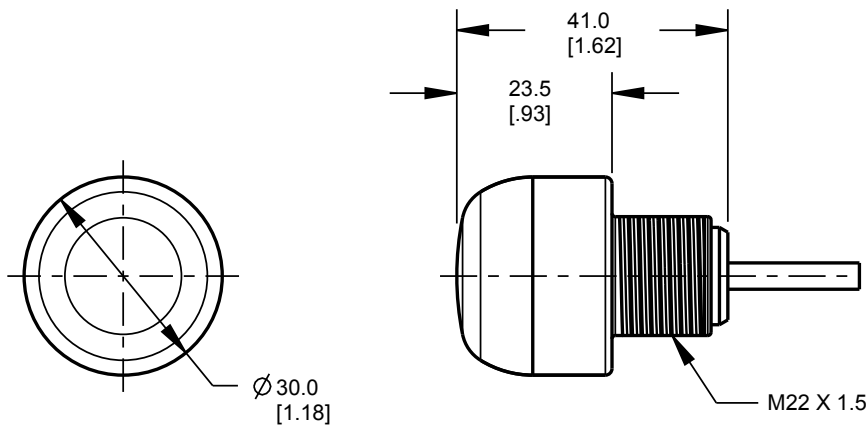


**WARNING:** Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

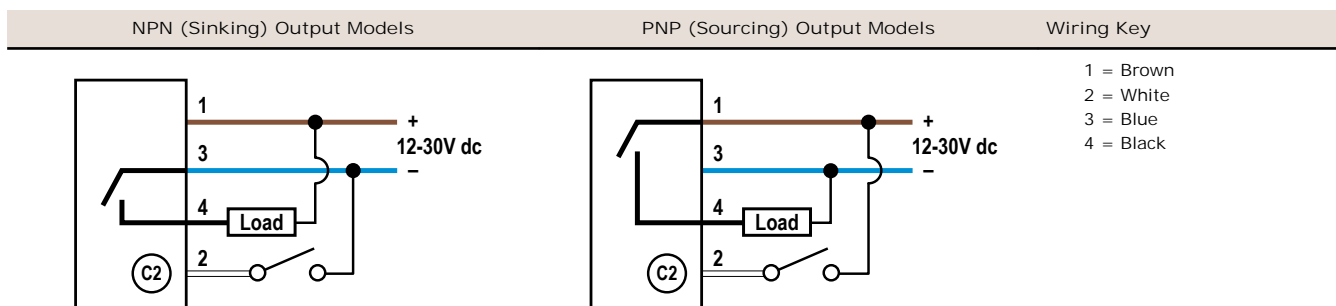
Overcurrent protection is required to be provided by end product application per the supplied table.  
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.  
Supply wiring leads < 24 AWG shall not be spliced.  
For additional product support, go to <http://www.bannerengineering.com>.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Dimensions



Wiring



Cabled wiring diagrams are shown. Quick disconnect (QD) wiring diagrams are functionally identical.

## Accessories

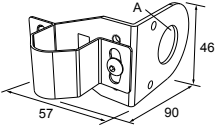
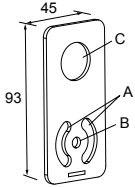
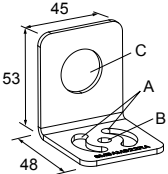
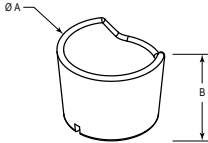
### Cordsets

4-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57 m (15 ft)			
MQDC-430RA	9.14 m (30 ft)			
MQDC-450RA	15.2 m (50 ft)			

4-Pin Threaded M12/Euro-Style Cordsets—Washdown, Stainless Steel				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-WDSS-0415	4.57 m (15 ft)			
MQDC-WDSS-0430	9.14 m (30 ft)			

### Brackets

<p><b>SMB22A</b></p> <ul style="list-style-type: none"> <li>Right-angle bracket with curved slot for versatile orientation</li> <li>12-ga. stainless steel</li> <li>Mounting hole for 22 mm sensor</li> </ul> <p>Hole center spacing: A to B = 26.0 Hole size: A = ø 4.6, B = 4.6 x 16.9, C = 22.2</p>	<p><b>SMB22FVK</b></p> <ul style="list-style-type: none"> <li>V-clamp, flat bracket and fasteners for mounting to pipe or extensions</li> <li>Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions</li> <li>22 mm hole for mounting sensor</li> </ul> <p>Hole size: A = ø 22.5</p>
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<p>SMB22RAVK</p> <ul style="list-style-type: none"> <li>V-clamp, right-angle bracket and fasteners for mounting to pipe or extensions</li> <li>Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions</li> <li>22 mm hole for mounting sensor</li> </ul>  <p>Hole size: A = <math>\varnothing</math> 22.5</p>	<p>SMBAMS22P</p> <ul style="list-style-type: none"> <li>Flat SMBAMS series bracket with 22 mm hole for mounting sensors</li> <li>Articulation slots for 90+° rotation</li> <li>12-ga. (2.6 mm) cold-rolled steel</li> </ul>  <p>Hole center spacing: A = 26.0, A to B = 13.0</p> <p>Hole size: A = 26.8 x 7.0, B = <math>\varnothing</math> 6.5, C = <math>\varnothing</math> 22.5</p>
<p>SMBAMS22RA</p> <ul style="list-style-type: none"> <li>Right-angle SMBAMS series bracket with 22 mm hole for mounting sensors</li> <li>Articulation slots for 90+° rotation</li> <li>12-ga. (2.6 mm) cold-rolled steel</li> </ul>  <p>Hole center spacing: A = 26.0, A to B = 13.0</p> <p>Hole size: A = 26.8 x 7.0, B = <math>\varnothing</math> 6.5, C = <math>\varnothing</math> 22.5</p>	<p>TC-K30-CL</p> <ul style="list-style-type: none"> <li>Touch cover</li> </ul>  <p>Diameter: A = 40.7</p> <p>Height: B = 31</p>

All measurements are listed in millimeters, unless noted otherwise.

## Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

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Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.

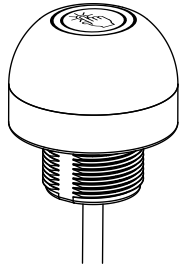
# EZ-LIGHT® Touch Gen 2 K50 FDA-Grade Illuminated Multipurpose Buttons



## Datasheet

General purpose multicolor indicator with independent momentary touch button output

To view or download the latest technical information about this product, including specifications, dimensions, accessories, and wiring, see <http://www.bannerengineering.com>.



- FDA-grade materials; rated to IEC IP67, IP68, and IP69K
- Laser marked information withstands aggressive cleaning procedures
- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, cost-effective, and easy-to-install multicolor indicator with touch button
- Three independent colors in one unit—Color 3 overrides Colors 1 and 2, Color 2 overrides Color 1
- Available with PNP and NPN inputs/outputs, depending on model
- Ergonomically designed to eliminate hand, wrist, and arm stresses associated with repeated switch operation; require no physical force to operate
- Can be actuated with bare hands or in gloves
- 12 to 30 V dc operation

## Models

Model <sup>1</sup>	I/O Type	Output State	Color 1	Color 2	Color 3	Connection
K50APT2FGRYF2QP	PNP	N.O.	Green	Red	Yellow	150 mm (6 in) pigtail PVC cable with a 8-pin M12/Euro-style male, stainless steel, quick disconnect (QD)
K50RPT2FGRYF2QP		N.C.				
K50ANT2FGRYF2QP	NPN	N.O.				
K50RNT2FGRYF2QP		N.C.				

## Indicator and Output Behavior

Table 1: PNP Models

Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
Open or -Vdc	Open or -Vdc	Open or -Vdc	Light Off	N.O.	Not touched	PNP Output Off
+V dc	Open or -Vdc	Open or -Vdc	Color #1 On		Touched	PNP Output On
+V dc	+V dc	Open or -Vdc	Color #2 On	N.C.	Not touched	PNP Output On
+V dc	+V dc	+V dc	Color #3 On		Touched	PNP Output Off
Open or -Vdc	+V dc	Open or -Vdc	Color #2 On			
Open or -Vdc	+V dc	+V dc	Color #3 On			
Open or -Vdc	Open or -Vdc	+V dc	Color #3 On			
+V dc	Open or -Vdc	+V dc	Color #3 On			

Table 2: NPN Models

Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
Open or +V dc	Open or +V dc	Open or +V dc	Light Off	N.O.	Not touched	NPN Output Off

<sup>1</sup> To order the 2 m (6.5 ft) cable models, omit suffix QP from model number (example, K50APT2FGRYF2).



Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
-Vdc	Open or +V dc	Open or +V dc	Color #1 On	N.C.	Touched	NPN Output On
-Vdc	-Vdc	Open or +V dc	Color #2 On		Not touched	NPN Output On
-Vdc	-Vdc	-Vdc	Color #3 On		Touched	NPN Output Off
Open or +V dc	-Vdc	Open or +V dc	Color #2 On			
Open or +V dc	-Vdc	-Vdc	Color #3 On			
Open or +V dc	Open or +V dc	-Vdc	Color #3 On			
-Vdc	Open or +V dc	-Vdc	Color #3 On			

## Specifications

Supply Voltage  
12 to 30 V dc

Supply Current  
< 75 mA max current at 12 V dc (exclusive of load)  
< 50 mA max current at 30 V dc (exclusive of load)

Supply Protection Circuitry  
Protected against reverse polarity and transient voltages

Output Rating  
Maximum Load: 150 mA  
ON-state saturation voltage: < 2 V at 10 mA dc; < 2.5 V at 150 mA dc  
OFF-state leakage current: <10 µA at 30 V dc

Output Response Time  
50 milliseconds On and Off

Environmental Rating  
IEC IP67, IP69K per DIN 40050-9.

Operating Conditions  
-40 °C to +50 °C (-40 °F to +122 °F)  
90% at 50 °C maximum relative humidity (non-condensing)

Storage  
-40 °C to +70 °C (-40 °F to +158 °F)

Vibration and Mechanical Shock  
Vibration 10 Hz to 55 Hz 1.0 mm p-p amplitude per IEC 60068-2-6  
Shock 30G 11 ms duration, half sine wave per IEC 60068-2-27

Certifications



Power-Up Delay  
300 milliseconds

Indicators  
Color 1: Green  
Color 2: Red  
Color 3: Yellow

Connections  
150 mm (6 in) pigtail PVC cable with a 8-pin M12/Euro-style male, stainless steel, quick disconnect (QD), or 2 m (6.5 ft) PVC integral cable

Construction  
Base, dome, and nut: FDA-grade polycarbonate

Mounting  
M30 × 1.5 Threaded base Max torque 4.5 N·m (40 in-lbf)

Required Overcurrent Protection

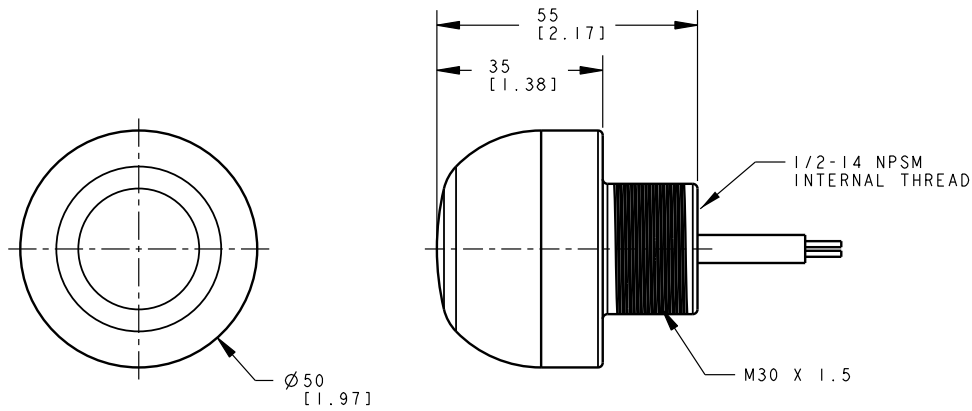


**WARNING:** Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.  
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.  
Supply wiring leads < 24 AWG shall not be spliced.  
For additional product support, go to <http://www.bannerengineering.com>.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

## Dimensions



All measurements are listed in millimeters (inches), unless noted otherwise.

## Wiring Diagram

NPN (Sinking) Output Models	PNP (Sourcing) Output Models	Wiring Key	Pinout
		<p>1 = White                  2 = Brown                  3 = Green                  4 = Yellow                  5 = Gray                  6 = Pink                  7 = Blue                  8 = Red</p>	

## Accessories

### Cordsets

8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC2S-806	1.83 m (6 ft)	Straight		<p>1 = White                  2 = Brown                  3 = Green                  4 = Yellow                  5 = Gray                  6 = Pink                  7 = Blue                  8 = Red</p>
MQDC2S-815	4.57 m (15 ft)			
MQDC2S-830	9.14 m (30 ft)			
MQDC2S-850	15.2 m (50 ft)			

8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC2S-806RA	1.83 m (6 ft)	Right-Angle		
MQDC2S-815RA	4.57 m (15 ft)			
MQDC2S-830RA	9.14 m (30 ft)			
MQDC2S-850RA	15.2 m (50 ft)			

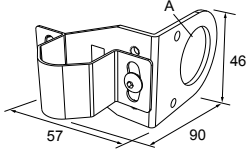
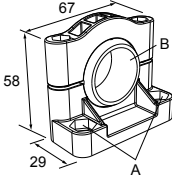
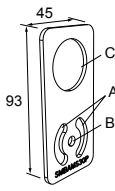
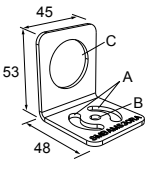
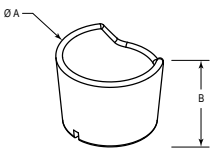
8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield—Washdown, Stainless Steel				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0806	1.83 m (6 ft)	Straight		
MQDC-WDSS-0815	4.57 m (15 ft)			
MQDC-WDSS-0830	9.14 m (30 ft)			

1 = White      5 = Gray  
 2 = Brown      6 = Pink  
 3 = Green      7 = Blue  
 4 = Yellow      8 = Red

## Brackets

<p><b>SMB30A</b></p> <ul style="list-style-type: none"> <li>Right-angle bracket with curved slot for versatile orientation</li> <li>Clearance for M6 (¼ in) hardware</li> <li>Mounting hole for 30 mm sensor</li> <li>12-ga. stainless steel</li> </ul> <p>Hole center spacing: A to B=40                  Hole size: A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5</p>	<p><b>SMB30FA</b></p> <ul style="list-style-type: none"> <li>Swivel bracket with tilt and pan movement for precise adjustment</li> <li>Mounting hole for 30 mm sensor</li> <li>12-ga. 304 stainless steel</li> <li>Easy sensor mounting to extrude rail T-slot</li> <li>Metric and inch size bolt available</li> </ul> <p>Bolt thread: SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50                  Hole size: B= ø 30.1</p>
<p><b>SMB30FVK</b></p> <ul style="list-style-type: none"> <li>V-clamp, flat bracket and fasteners for mounting to pipe or extensions</li> <li>Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions</li> <li>30 mm hole for mounting sensors</li> </ul> <p>Hole size: A= ø 31</p>	<p><b>SMB30MM</b></p> <ul style="list-style-type: none"> <li>12-ga. stainless steel bracket with curved mounting slots for versatile orientation</li> <li>Clearance for M6 (¼ in) hardware</li> <li>Mounting hole for 30 mm sensor</li> </ul> <p>Hole center spacing: A = 51, A to B = 25.4                  Hole size: A = 42.6 x 7, B = ø 6.4, C = ø 30.1</p>



<p><b>SMB30RAVK</b></p> <ul style="list-style-type: none"> <li>• V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion</li> <li>• Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions</li> <li>• 30 mm hole for mounting sensors</li> </ul> <p>Hole size: A = <math>\varnothing</math> 30.5</p> 	<p><b>SMB30SC</b></p> <ul style="list-style-type: none"> <li>• Swivel bracket with 30 mm mounting hole for sensor</li> <li>• Black reinforced thermoplastic polyester</li> <li>• Stainless steel mounting and swivel locking hardware included</li> </ul> <p>Hole center spacing: A=<math>\varnothing</math> 50.8 Hole size: A=<math>\varnothing</math> 7.0, B=<math>\varnothing</math> 30.0</p> 
<p><b>SMBAMS30P</b></p> <ul style="list-style-type: none"> <li>• Flat SMBAMS series bracket</li> <li>• 30 mm hole for mounting sensors</li> <li>• Articulation slots for 90° + rotation</li> <li>• 12-ga. 300 series stainless steel</li> </ul> <p>Hole center spacing: A=26.0, A to B=13.0 Hole size: A=26.8 x 7.0, B=<math>\varnothing</math> 6.5, C=<math>\varnothing</math> 31.0</p> 	<p><b>SMBAMS30RA</b></p> <ul style="list-style-type: none"> <li>• Right-angle SMBAMS series bracket</li> <li>• 30 mm hole for mounting sensors</li> <li>• Articulation slots for 90° + rotation</li> <li>• 12-ga. (2.6 mm) cold-rolled steel</li> </ul> <p>Hole center spacing: A=26.0, A to B=13.0 Hole size: A=26.8 x 7.0, B=<math>\varnothing</math> 6.5, C=<math>\varnothing</math> 31.0</p> 
<p><b>TC-K50-CL</b></p> <ul style="list-style-type: none"> <li>• Touch cover</li> </ul> <p>Diameter: A = Height: B =</p> 	

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THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

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Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.