## **Change Notice**

# TL Series

## Changes to LED Specifications for TL Toggles with Bright Red (C) or Bright Amber (D)

Type of Change:

- 🗹 Engineering 🗆 Part Number
- Product
- Appearance



LED Specification Revisions for TL Series

Where: R = Resistor Value (Ohms) E = Source Voltage (V)

 $V_{F} =$  Forward Voltage (V)

= Forward Current (A)

Anode

Cathode

The TL Series Illuminated Toggles will have changes to the LED specifications for Bright Red (code C) and Bright Amber (code D) LEDs. The changes will effect all of the switches, including both actuators lengths, and standard and custom devices. The specification revisions are outlined below, followed by effected standard part numbers.

	BRIGHT LED COLOR C	ODES	& SPECIFI	CATIONS		
			Before Change		After Change	
Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation.	LED Factory Assembled Not Available Separately	Color	5C Red	5D Amber	5C Red	5D Amber
	Maximum Forward Current	I <sub>FM</sub>	30mA	30mA	30mA	30mA
	Typical Forward Current	I <sub>F</sub>	20mA	20mA	20mA	20mA
	Forward Voltage	V <sub>F</sub>	2.0V	2.1V	2.05V	2.05V
	Maximum Reverse Voltage	V <sub>RM</sub>	4V	4V	10V	10V
	Current Reduction Rate Above 25°C	ΔI <sub>F</sub>	0.32mA/°C	0.32mA/°C	0.40mA/°C	0.40mA/°C
	Ambient Temperature Range		−10°C ~ +55°C		−10°C ~ +55°C	

#### Notes

- The LED circuit is isolated and requires an external power source.
- If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula shown here.
- There are no changes to any other specifications or external dimensions.
- · Contact the factory if further details are needed.



.689" (17.5mm) Toggle	.433" (11.0mm) Toggle		
TL22DCAW015C	TL22SCAG015C		
TL22DDAW015D	TL22SDAG015D		

### **Effective Date**

Changes to TL Illuminated Toggles with bright Red or Amber LEDs will be effective December 2017.

