PROJECT: NOTES:

MAGNITUDE LIGHTING
WE DRIVE LIGHT

Customer Care
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AFLEX Compact

Specification Sheet

Programmable Constant Current
0–10V Dimmable LED Driver

120–277V
CLASS 2
CLASS P
DIMMABLE DIM DOWN TO 0.1%
Programmable
IP40
c UL us LISTED
MEETS TITLE 24/JA8 REQUIREMENTS
FC
RoHS Compliant

Key Features

- Dim-To-Dark, 0.1% minimum with 0-10V controls; digital controls not required
- Fast “tap and go” wireless NFC programming
- Optional programmable power for critical energy calculations
- Meets CA Title 24 / JA8 requirements

Specification Overview

- 0-10V dimmable with dim-to-off (programmable)
- Universal 120 to 277VAC input
- Programmable 100-1400mA (1mA steps)
- Operating voltage range from 10VDC to 57VDC
- 12V auxiliary power output (optional)
- UL Listed 8750, Class 2, Class P

FlexTool

Fast, easy wireless programming

With FlexTool, customers can quickly and easily configure multiple parameters of the driver in the shop or in the field. Our programming is one of the easiest in the industry and can be done in less than one second.

FlexTool provides quick, accurate wireless programming on the production floor, in the electrical shop or in the field:

- No complicated 2-wire programming jigs or probes
- Quick “tap and go” process, less than 0.1 seconds
- Audible “beep” confirms programming
- Driver can be programmed without powering up driver

FlexTool laptop-based software configures multiple parameters:

- Input Power in Watts
- Output Current in mA
- Dimming Curve
- Dim-to-Off Functionality
- NTC Settings and More

Enclosure Details			
Dimensions	**Material**	**Finish**	**Environmental**
4.95” W x 2.53” H x 1.0” D (125.7mm x 64.3mm x 25.4mm)	Aluminum	Anodized	IP40

ORDERING INFORMATION

Stock Models for Programming in the Field	
Part Number	**Description**
AFLEX-60W-1400-S-L	AFLEX Compact, 120-277, 60W, 10-57VDC, 1400mA, **Side Feed**, Lin Dim, No Aux
AFLEX-60W-1400-S-LA	AFLEX Compact, 120-277, 60W, 10-57VDC, 1400mA, **Side Feed**, Lin Dim, 12V Aux
AFLEX-60W-1400-D-L	AFLEX Compact, 120-277, 60W, 10-57VDC, 1400mA, **Dual Feed**, Lin Dim, No Aux
AFLEX-60W-1400-D-LA	AFLEX Compact, 120-277, 60W, 10-57VDC, 1400mA, **Dual Feed**, Lin Dim, 12V Aux

Drivers Programmed at Factory with Standard 60W Maximum Output

Use for driver field replacements (meets Class P requirements).

Model		Wattage		Current		Case Style		Dim Curve		Aux Out	
AFLEX		**60W**									
AFLEX	AFLEX	**60W**	60 Watt	**0100**	100mA Min	**S**	Compact Side Feed	**G**	Logarithmic	**(blank)**	No Aux
		10-57VDC			Up To	**D**	Compact Dual Feed	**L**	Linear	**A**	12V Aux
				1400	1400mA Max						

Custom Models Programmed at Factory if Maximum Rated Power Required is Less Than 60W

Note: Generally not required for replacement drivers. Beneficial for OEMs requiring lower max wattage to meet energy calculations.

Model		Wattage[1]		Current[2]		Case Style		Dim Curve		Aux Out	
AFLEX		**50W**									
AFLEX	AFLEX	**50W**	50 Watt	**0100**	100mA Min	**S**	Compact Side Feed	**G**	Logarithmic	**(blank)**	No Aux
		10-40VDC			Up To	**D**	Compact Dual Feed	**L**	Linear	**A**	12V Aux
				1250	1250mA Max						
AFLEX		**40W**									
AFLEX	AFLEX	**40W**	40 Watt	**0100**	100mA Min	**S**	Compact Side Feed	**G**	Logarithmic	**(blank)**	No Aux
		10-40VDC			Up To	**D**	Compact Dual Feed	**L**	Linear	**A**	12V Aux
				1000	1000mA Max						
AFLEX		**30W**									
AFLEX	AFLEX	**30W**	30 Watt	**0100**	100mA Min	**S**	Compact Side Feed	**G**	Logarithmic	**(blank)**	No Aux
		10-40VDC			Up To	**D**	Compact Dual Feed	**L**	Linear	**A**	12V Aux
				750	750mA Max						

[1] Driver can be programmed for maximum power in 1W increments up to 60W – consult factory for further details.

[2] Driver can operate with LED loads up to 57V at lower maximum driver currents – consult factory for further details.

SPECIFICATIONS

Input	
Input Voltage Range	Universal 120 – 277VAC ± 10%
Input Frequency	50/60Hz
Input Current	0.29A – 0.6A @ 120VAC 0.15A – 0.25A @ 277VAC[3]
Inrush Current	38A Max
Efficiency	> 88%
Power Factor	0.991 – 0.992 @ 120VAC 0.90 – 0.95 @ 277VAC[3] (Refer to graph on page 6)
	[3]Depending on Model

Output	
Output Voltage Range	10 – 57VDC
Output Current Range	100 – 1400mA (1mA Step Programmable)
Output Current Tolerance	< 5%
Output Current Ripple	< 5% @ Max load
Line Regulation	+/- 5%
Load Regulation	+/- 5%
Turn-On Delay Time	0.4 sec @ Max load
Sensor Power Supply (Aux)	12V up to 80mA
Stand-By Power	> 1W

Environmental	
Env. Protection Rating	IP40
Surge Protection	2.5kV
Operating Ambient Temp.	-40°C to +50°C
Storage Temperature	-40°C to +85°C
Expected Lifetime	50k hours at 75°C (Refer to graph on page 7)
Audible Noise	< 24dB Class A
Withstanding Voltage	2.5kV

Dimming	
Dimming Control	0 – 10V
Dimming Input Range	-2 to +15V
Dimming Curves	Linear / Logarithmic (Programmable)
Min. Dimming Level	Dim down to 0.1%
Dim-to-Off	Yes (Programmable)
Current Consumption	0.35mA / Source
Compliance	0-10V Dimming Compliant with ANSI C137.1

LED Thermal Protection (NTC)	
NTC Value (Manufacture: Vishay)	15 kΩ ± 5% @ 25oC P/N: NTCS0805E3153JMT
Output Level Range	1mA Step Programmable (0 – 100%)

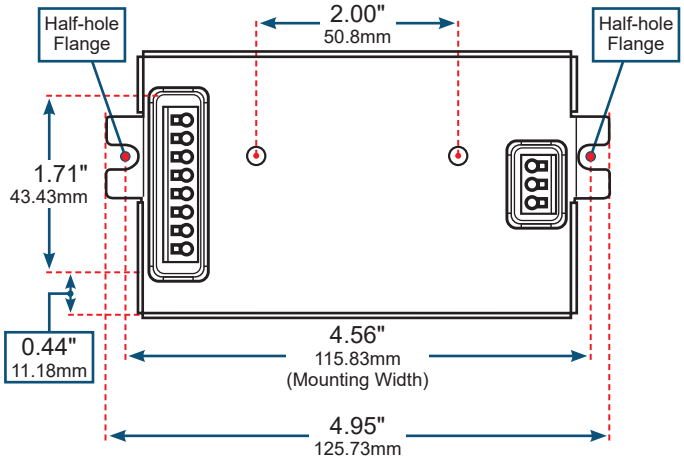
Protection	
Over Current Protection	Current Limiting
Short Circuit Protection	Hiccup Mode
Over Voltage Protection	Hiccup Mode
Over Temp. Protection	Power Derating (Refer to graph on page 7)
Mis-Wiring Protection	Auto Shutdown

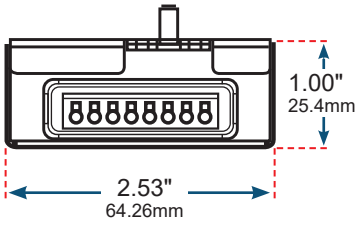
Mechanical Housing	
Length	4.19" (106.43mm)
Mounting Length	4.94" (125.48mm)
Width	2.59" (65.79mm)
Height	1.00" (25.4mm)
Housing Material	Aluminum
Housing Color	Blue Anodized
Junction Box	No
Input Connector Types	Black & White Wago 253, Dual Side 16 – 20AWG strip 3/8"
Output Connector Types	Red & Blue Wago 253, Dual Side 16 – 20AWG strip 3/8"
Dimming Connector Types	Purple & Gray Wago 253, Dual Side 16 – 20AWG strip 3/8"
Auxiliary Connector Types	Yellow & Gray Wago 253, Dual Side 16 – 20AWG strip 3/8"
NTC Connector Types	Orange & Orange Wago 253, Dual Side 16 – 20AWG strip 3/8"
Mounting	(Side Feed) 2-hole half-flange mounts (Dual Feed) 2 additional stud mounts

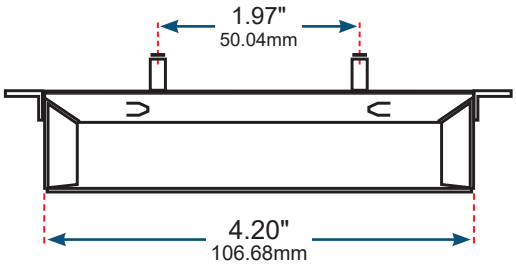
Approval Markings	
Certificates / Approval Signs	UL 8750 Class 2, Class P

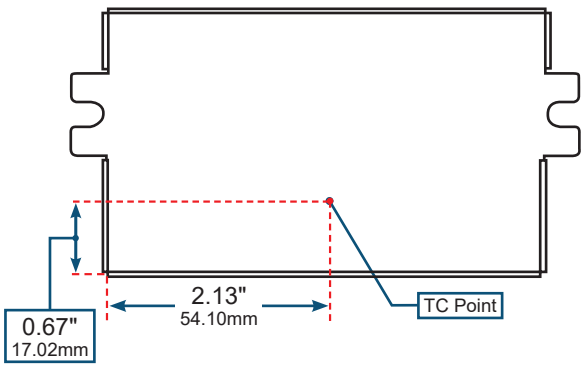
MECHANICAL DIAGRAMS

▼ Dual Feed ▼

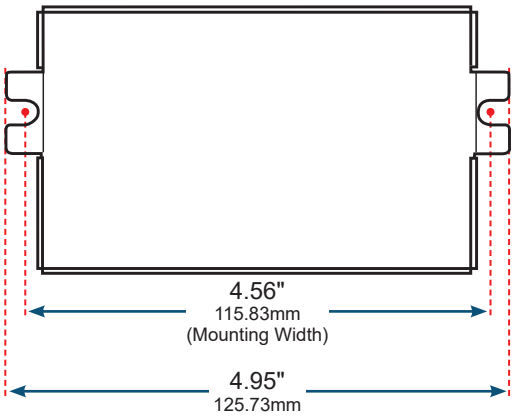


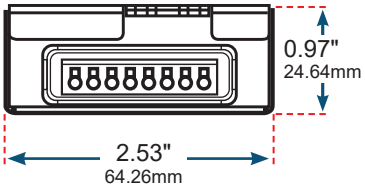


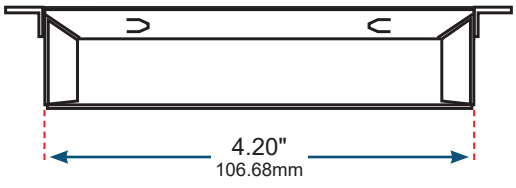


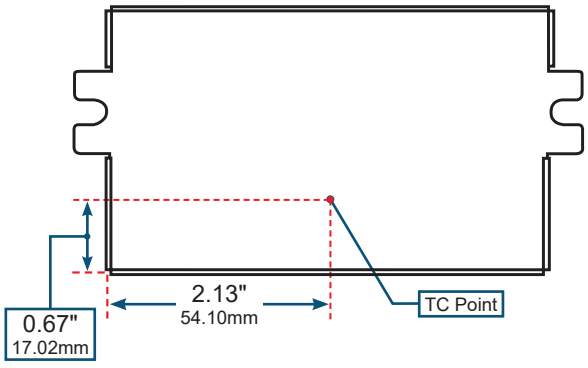


▼ Side Feed ▼

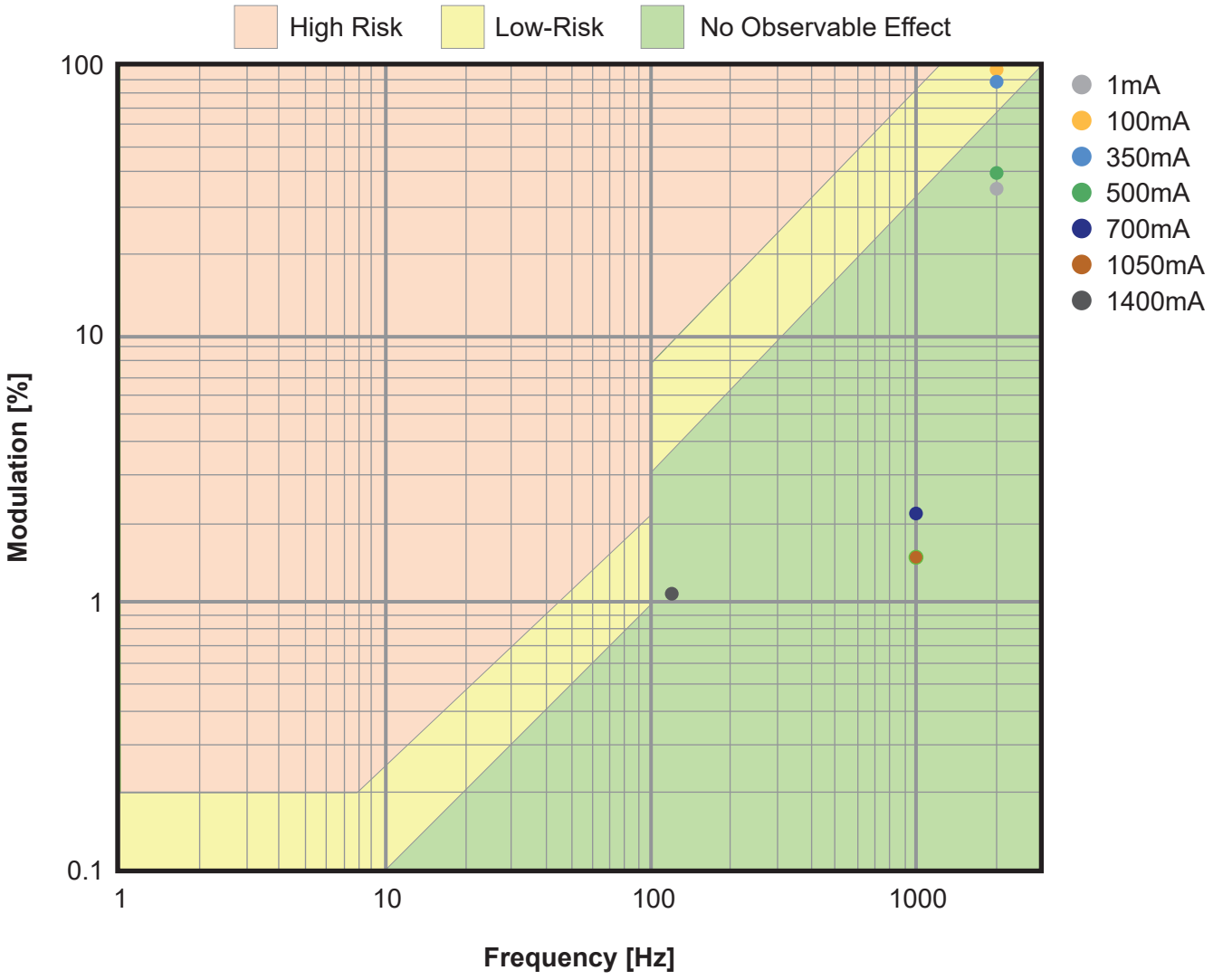






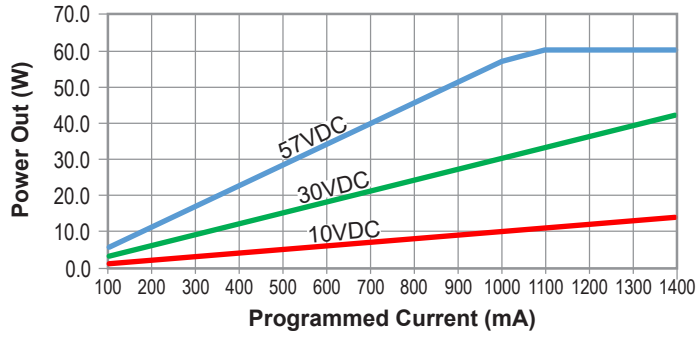


THE IEEE P1789 FLICKER TEST PERFORMANCE RESULTS



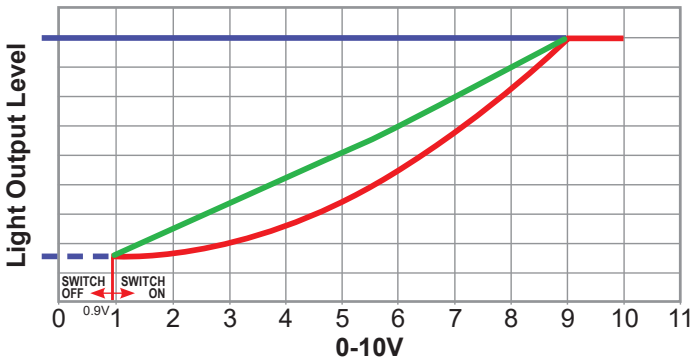
PERFORMANCE SPECIFICATIONS

Operating Power Output

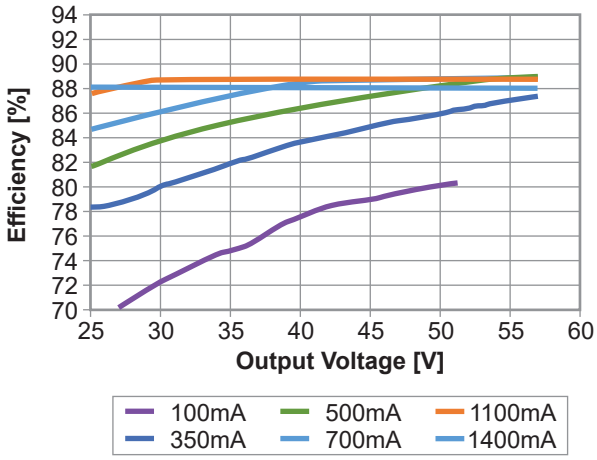


Output Current (mA)

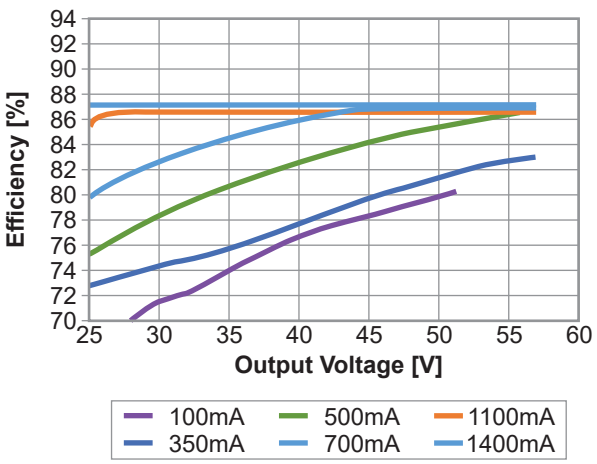
Dimming Curves



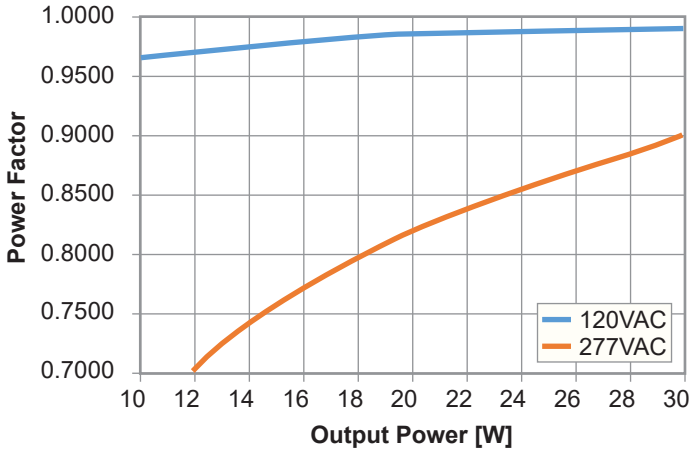
Efficiency vs Output Voltage (120VAC)



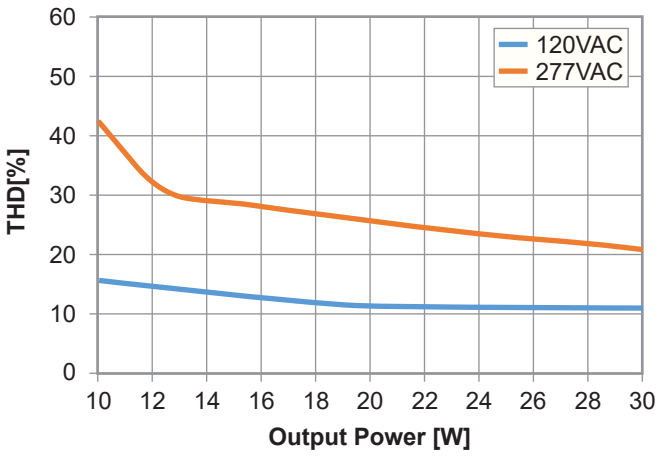
Efficiency vs Output Voltage (277VAC)



Power Factor vs Output Power



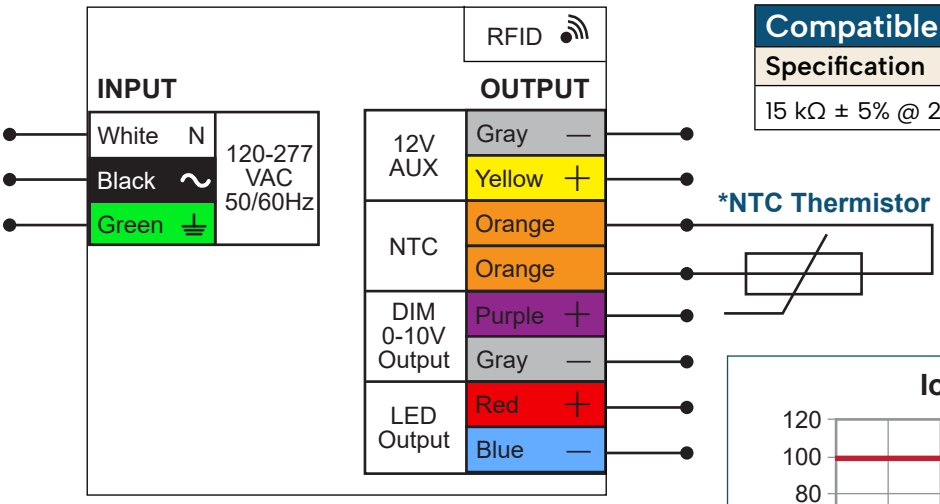
THD vs Output Power



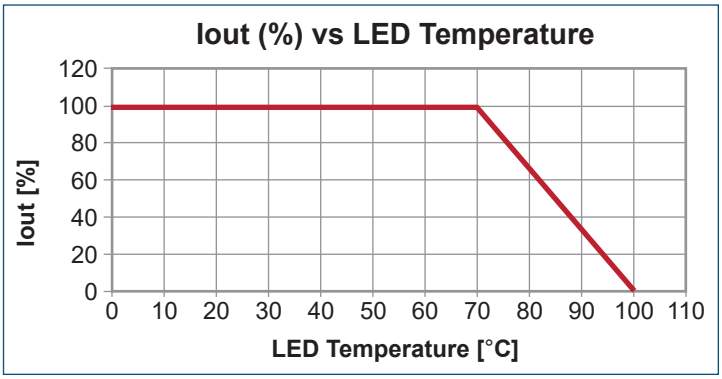
LED THERMAL PROTECTION (NTC)

AFLEX Series drivers help protect the LED's lifetime and will reduce LED temperature by derating the output current in case of high temperatures. The negative temperature coefficient (NTC) thermistor must be connected to the LED driver, as shown in the wiring diagram.

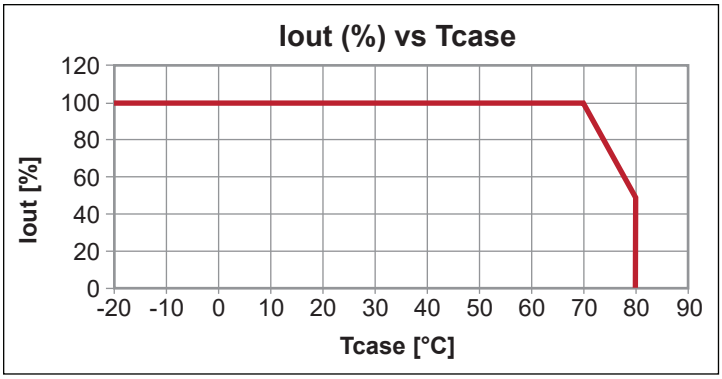
For maximum performance, the NTC thermistor must be placed close to the Tc point of the LED module. The power derating prameters can be programmed using the FlexTool programmer. The NTC outputs can be left disconnected if thermal protection is not required.

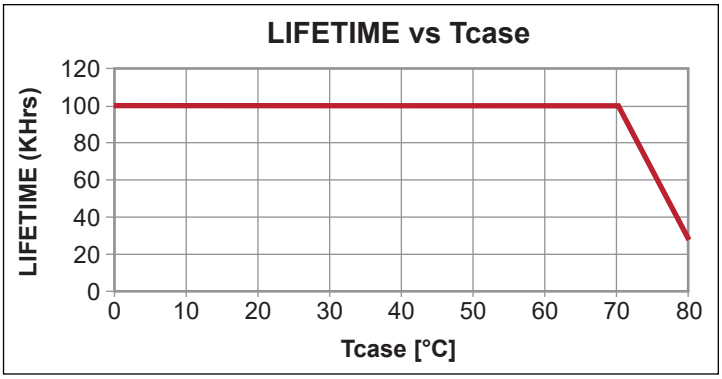


Compatible NTC Thermistor*		
Specification	**Manufacturer**	**Manufacturer P/N**
15 kΩ ± 5% @ 25°C	Vishay	NTCS0805E3153JMT



DRIVER THERMAL PROTECTION





ABOUT THE FLEXTOOL WIRELESS PROGRAMMER

The FlexTool wireless programmer is used to program Magnitude's AFLEX Series of LED drivers. By using the FlexTool, users can quickly and smoothly configure the driver's parameters without applying power or wires to the driver.

With the FlexTool software, you can easily save driver configuration profiles externally and use as needed. The software provides graphic and audio indication that the driver was successfully configured.

PROGRAMMING THE AFLEX COMPACT DRIVER

Programmable Output Power & Current

Power is programmable in 1W steps. Current is programmable in 1mA steps.

Dimming Control

- Dim-to-Off: Check box (yes/no); Factory Default: Checked (yes)
- Dimming Curve: Logarithmic or Linear; Factory Default: Linear
- Dimmer Type: 0-10(V) or None; Factory Default: 0-10(V)
- Output current at Minimum Dimming level ; Factory Default : 1mA (Maximum 250mA)

LED Thermal Protection

- Temperature Derating Start; Factory Default: 70ºC
- Temperature Derating End; Factory Default: 100ºC
- Min. Current before Shut-Off; Factory Default: 1mA