

# AFLEX

## 60W PROGRAMMABLE LED DRIVER



**Class  
P**

**Class  
2**

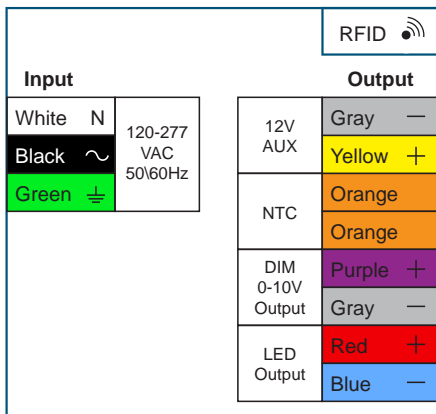


The AFlex Series of Constant Current Programmable LED Drivers offers high efficiency, smooth flicker-free dimming and Dim to off capability. Magnitude’s wireless programming technology (FlexTool) enables full flexibility for OEMs to easily configure the drivers output current, dimming curve, dim-to-off, NTC settings and more. Programming the Driver doesn’t require any power and can be done in less than one second. The auxiliary output provides power source for sensors and/or cooling devices and eliminates the need for an additional power supply. The Drivers wide operating window, dimming performance and programming options gives luminaire manufacturers high level of flexibility. As always, 5-year warranty is a standard on all of Magnitude lighting products.

### QUICK SPECS

Input Voltage	Max Output Power	Output Voltage	Output Current	Efficiency @ Max Load	THD @ Max. Load	Power Factor @ Max. Load	Envir. Protection Rating	Weight
120-277VAC / VDC +/-10%	60W	3-57VDC	100-1400mA	> 90%	< 20%	> 0.95	IP21	166gr / 5.85oz

### WIRING DIAGRAM

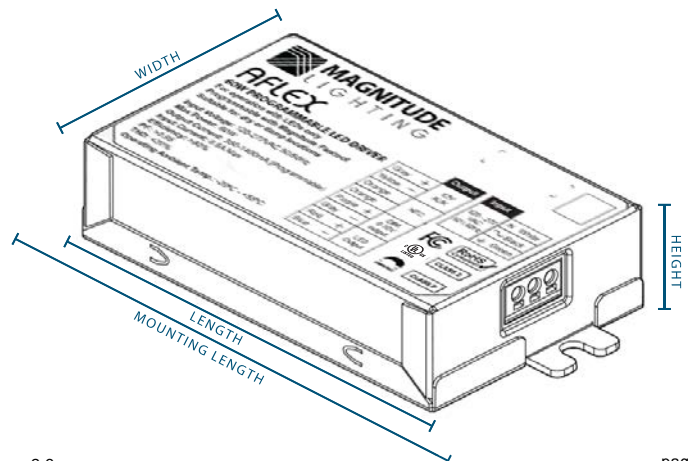


### FEATURES

- Wireless RFID Programming - No power required
- 0-10V Dimmable - Dim Down to 1mA
- Dim To Off Capability
- NTC - LED Temperature Sensor
- Auxiliary Power Output
- Wide Operating Window
- CLO (constant lumen output)
- Up to 90% Efficiency
- Universal Input Voltage
- UL Listed 8750, Class 2, Class P

### ENCLOSURE DETAILS In. (mm)

Length	4.19 (106.4)
Mounting Length	4.94 (125.7)
Width	2.59 (65.8)
Height	1.00 (25.4)



## GENERAL

Part Number: AFLEX-xxW-□□□□-□-□□
Driver Type: Constant Current
Programming Tool: FlexTool
Software: <a href="#">link</a>

## SPECIFICATIONS

\*Specifications are at 25°C (unless specified otherwise)

Input	
Input Voltage Range	120 - 277VAC / VDC ± 10%
Input Frequency	50 / 60Hz
Input current	0.6@120VAC / 0.25@277VAC
Inrush Current	38A Max (refer to graph, page 10)
Efficiency	> 90% (refer to graph, page 6)
Power Factor	0.992@120VAC / 0.95@277VAC (refer to graph, page 7)
Output	
Output Voltage Range	3 - 57VDC
Output Current Range	100 - 1400mA (1mA step programmable)
Output Current Tolerance	± 5%
Output Current Ripple	± 5% @ max load
Line Regulation	± 0.5%
Load Regulation	± 0.5%
Turn On Delay Time	0.4 sec @ max load
Sensor Power Supply (Auxiliary)	12 - 25V up to 80mA
Stand-By Power	> 1W
Environmental	
Env. Protection Rating	IP 21 - indoor use only
Surge Protection	2.5 KV
Operating Ambient temperature	-40°C - +50°C
Max Case Temp. (Tcase)	80°C
Storage temperature	-40°C - +85°C
Expected life time	100K hours at 70°C (refer to graph, page 10)
EMI Compliance	FCC 47CFR Part 15 Class B
Audible Noise	< 24db Class A
Withstanding Voltage	2.5 KV

# AFLEX 60W PROGRAMMABLE LED DRIVER

## Dimming

Dimming Control	0-10V
Dimming input Range	-2V - +15V
Dimming Curves	Linear / <b>Logarithmic</b> (Programmable)
Min. Dimming level	1mA
Dim to Off	Yes (Programmable)
Current Consumption	0.35mA / Source

## LED Thermal Protection (NTC) - refer to page 8

NTC Value	Manufacturer: Vishay	15 k $\Omega$ $\pm$ 5% @25 $^{\circ}$ c	Manufacturer P/N: NTCS0805E3153JMT
Output Level range	1mA step programmable (0 - 100%)		

## Protections

Over Current Protection	Yes; current limit
Short Circuit Protection	Yes; hiccup mode
Over Voltage Protection	Yes; hiccup mode
Over Temperature Protection	Yes; power derating (refer to graph, page 9)
Mis-Wiring Protection	Yes; auto shutdown

## Mechanical & Housing

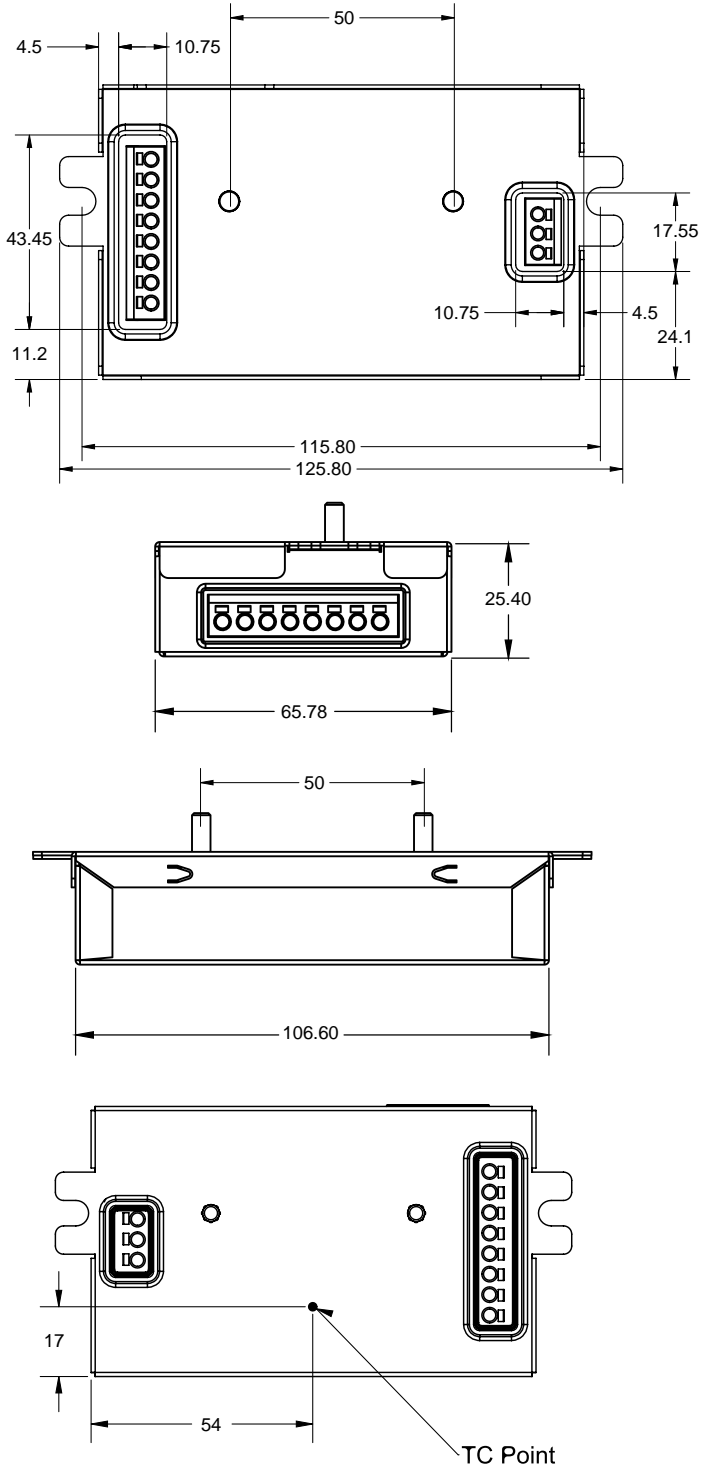
Length	4.19" Inch (106.4mm)
Mounting Length	4.94" Inch (125.7mm)
Width	2.59" Inch (65.8mm)
Height	1.00" Inch (25.4mm)
Housing material	Aluminium
Housing Color	Blue anodized
Junction Box	No
Input Connectors type	black & white/ Wago 253, dual side / 16-20AWG strip 3/8"
Output Connectors type	red & blue / Wago 253, dual side / 16-20AWG strip 3/8"
Dimming Connectors type	purple & gray / Wago 253, dual side / 16-20AWG strip 3/8"
Auxiliary Connectors type	yellow & gray / Wago 253, dual side / 16-20AWG strip 3/8"
NTC Connectors type	orange & orange / Wago 253, dual side / 16-20AWG strip 3/8"
Mounting	Two hole flange mounting

## Approval markings

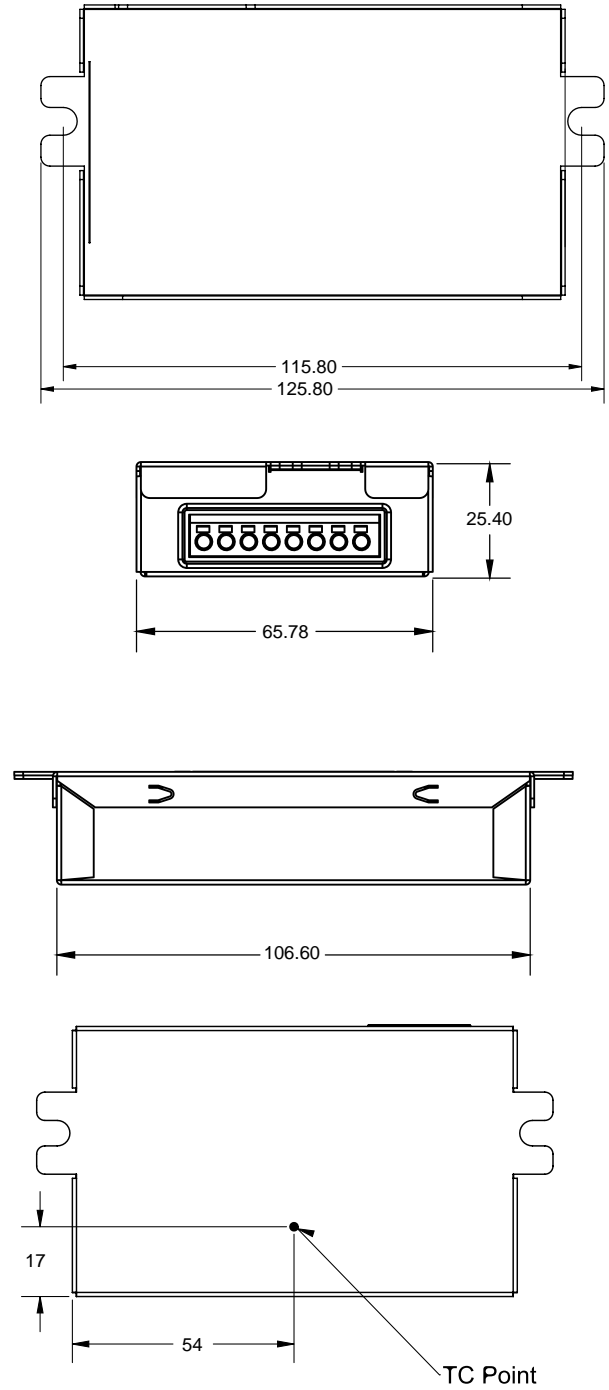
Certificates/Approval signs	UL 8750 class 2, class P
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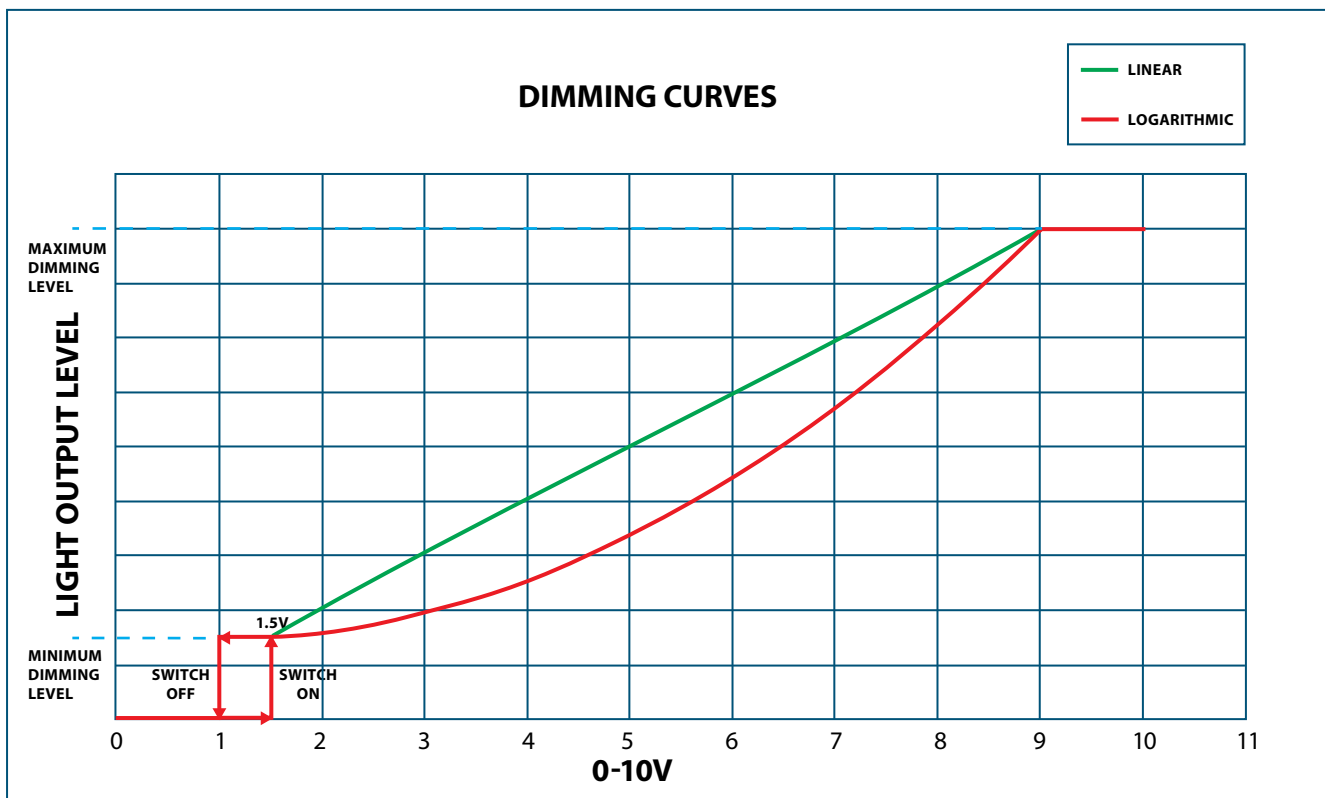
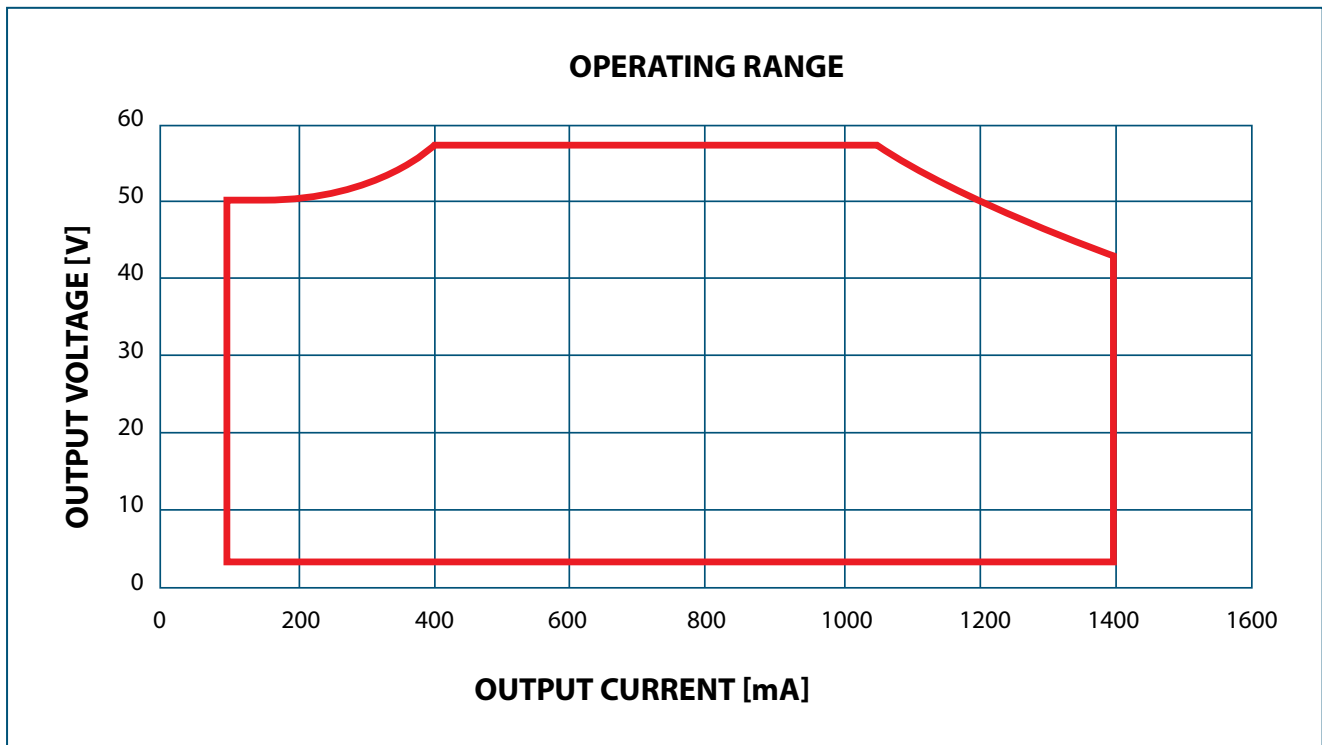
## MECHANICAL DIAGRAM

Dual Feed

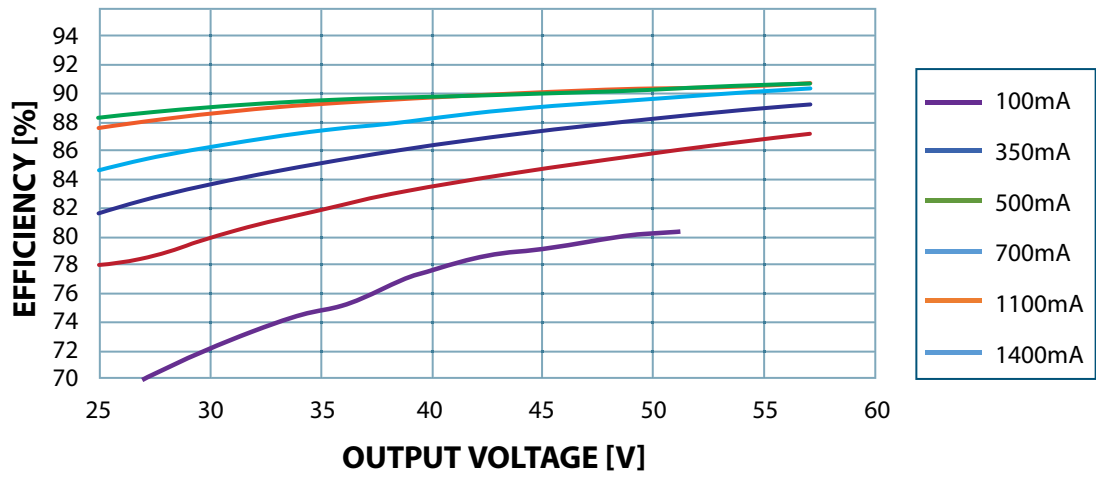


Side Feed

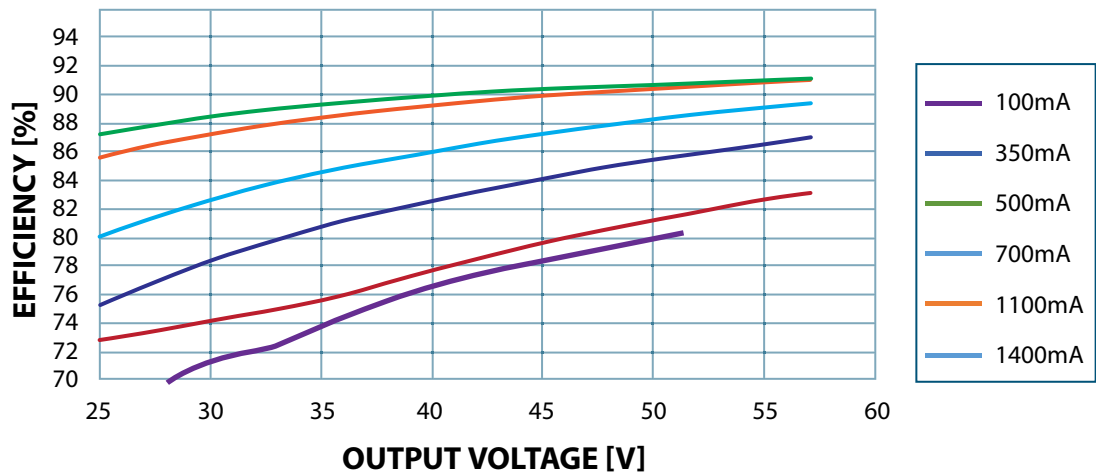


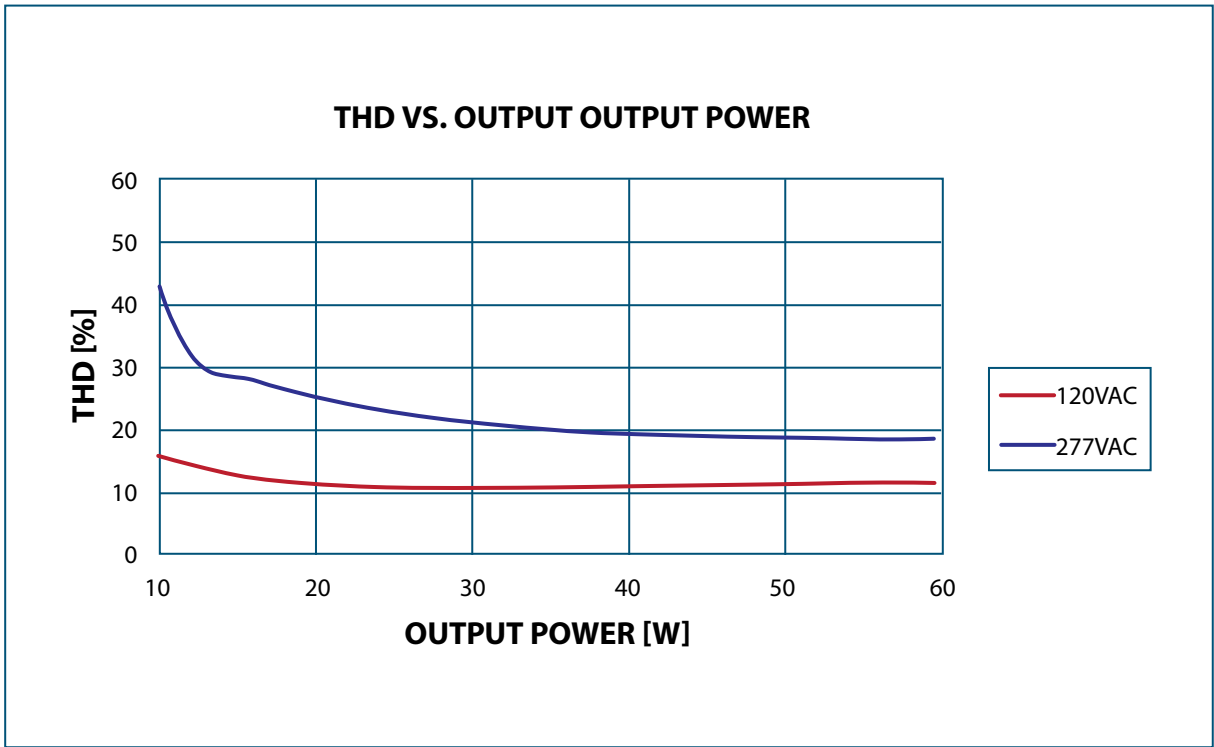
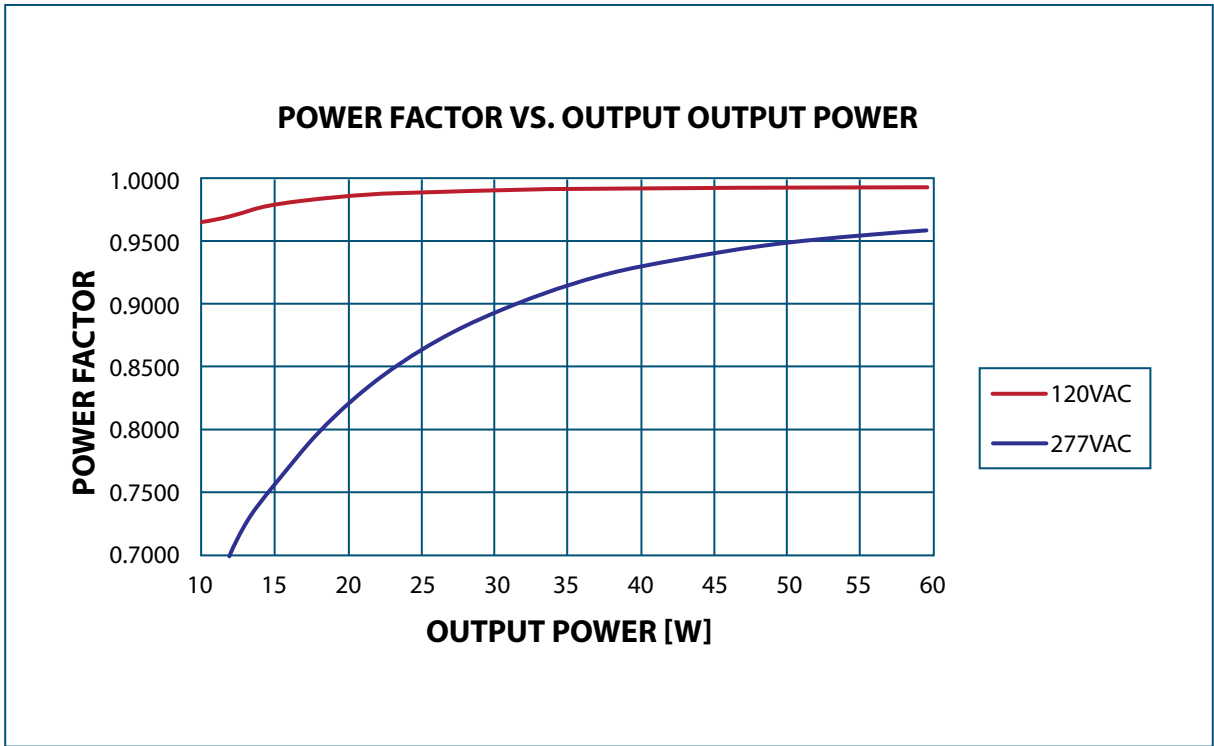


**EFFICIENCY VS. OUTPUT VOLTAGE (120VAC)**



**EFFICIENCY VS. OUTPUT VOLTAGE (277VAC)**

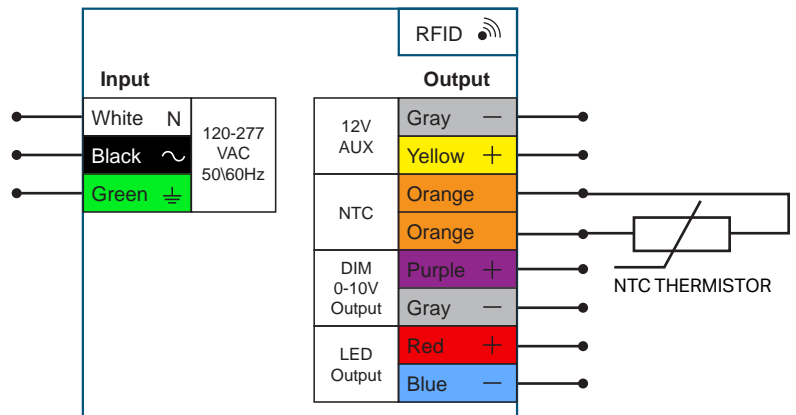




## LED THERMAL PROTECTION (NTC)

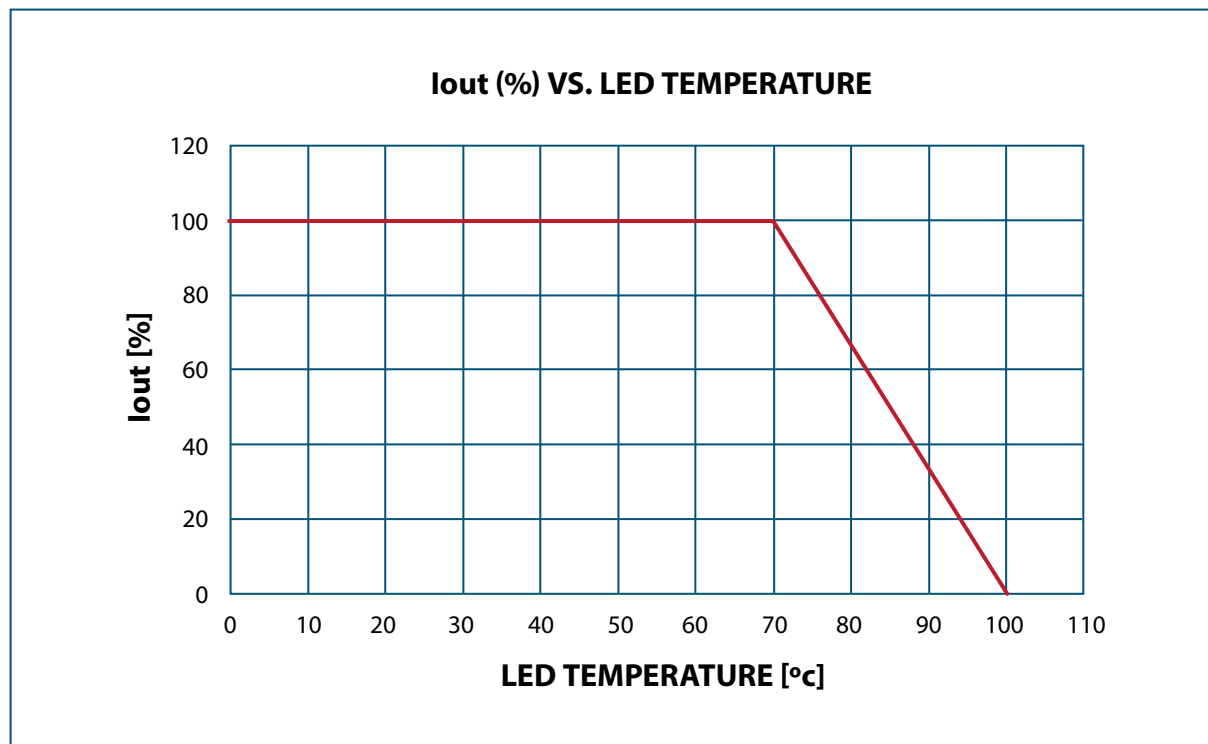
The AFlex Series of drivers helps protect the LED's lifetime and will reduce the temperature of the LED module by derating the output current in case of high temperatures. The negative temperature coefficient (NTC) thermistor must be connected to the LED driver as shown in the wiring diagram.

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



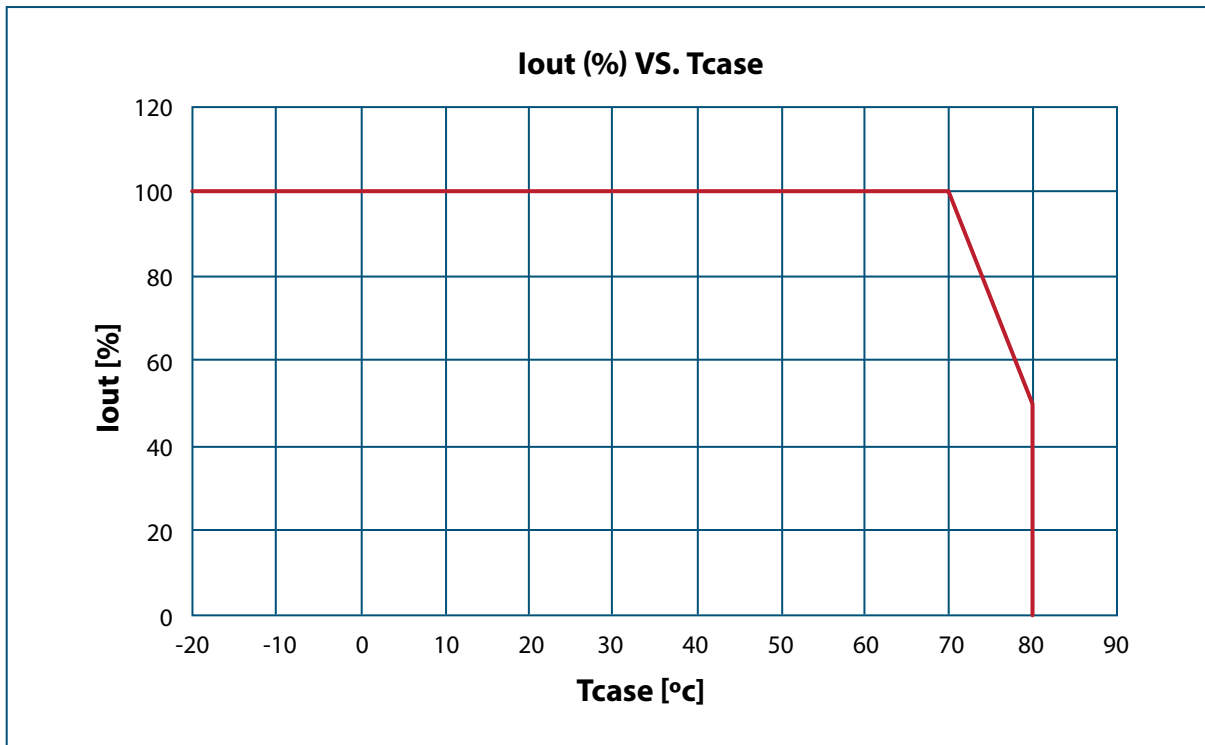
Compatible NTC thermistor:

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

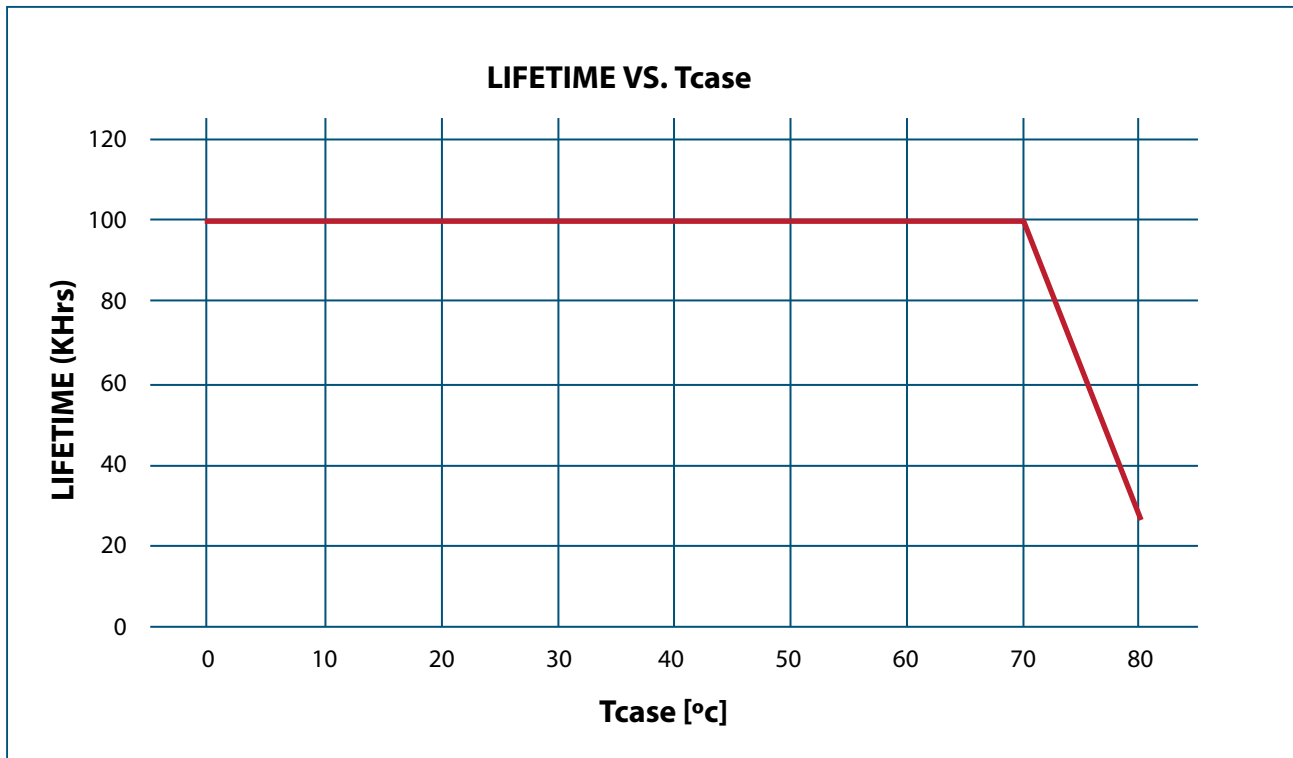




## DRIVER THERMAL PROTECTION

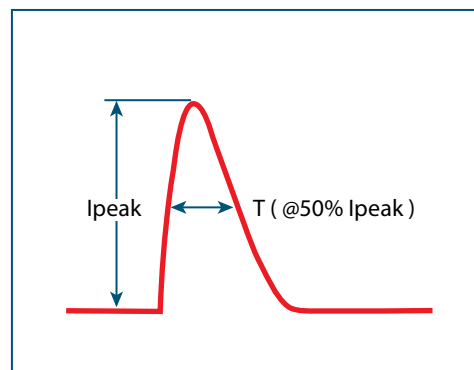


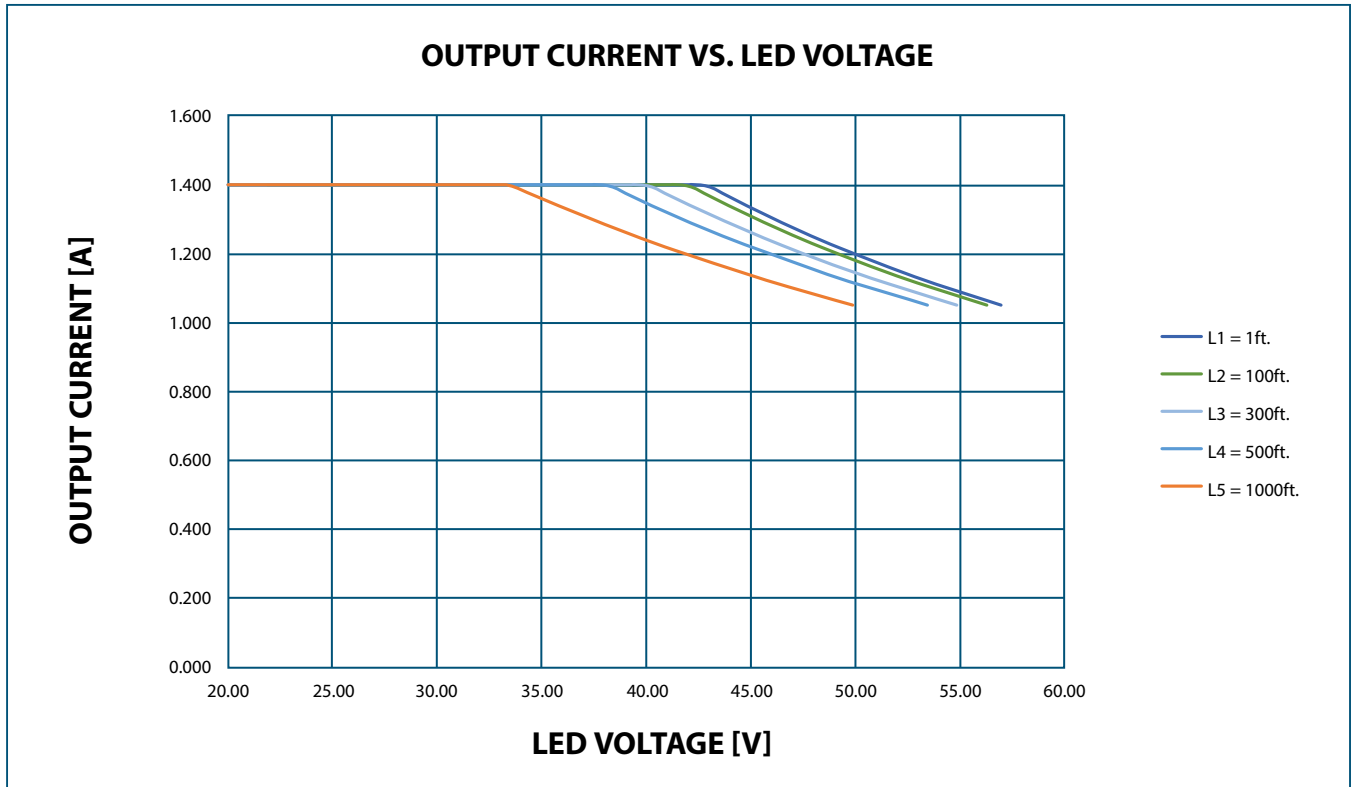
	Min	Max
Normal operation	-20°C	+70°C
Derating area	-70°C	+80°C
Protection area	+80°C	
Return to work after thermal protection activated	+70°C	



### INRUSH CURRENT

Vin [V]	Ipeak [A]	T ( @50% Ipeak )
120 VAC	14.2	1.5 usec
277VAC	38	1.2 usec



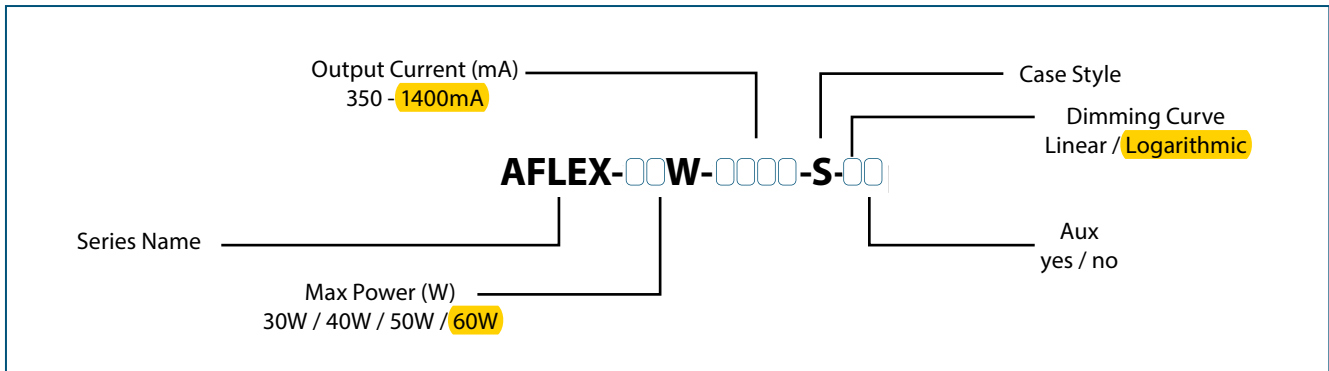


**TEST CONDITION:**

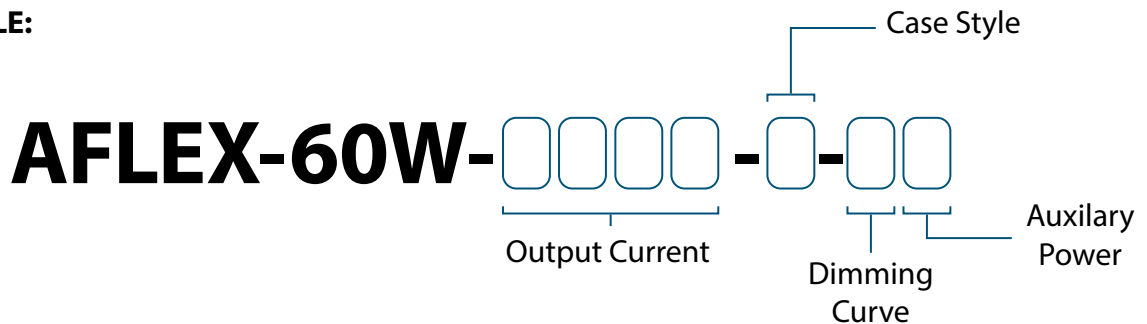
- 1. Output Power = 60W
- 2. Output Current = 1.4A
- 3. Wire parameters = 18AWG, 16/ 30, 6.75Ω/ 1000'

Note – Above L=100ft. min LED voltage = 10V

## AFLEX - ORDER PART NUMBER CONFIGURATION



### FOR EXAMPLE:



**Output Current:** 0100 / 0350 / 0500 / 0700 / 1050 / 1400 mA

**Dimming Curve:** L - for linear / G = for Logarithmic

**Case Style:** D - Double Feed (Back and Sides) / S - Single Feed (Sides) / L - Linear.

**Auxiliary Power:** A - for Auxiliary output, leave it empty if not needed.

### Please Note!

for special requirements, please contact our sales team

## COMPATIBLE 0-10 DIMMER LIST

Dimming	Part Number	Recommended Dimming Curve
Lutron	Diva - DVTV	Linear
Lutron	Diva - NFTV	Linear
Lutron	Nova T - NTFTV	Linear
Leviton	illumatech - IP7	Logarithmic
Watt Stopper	DCLV1	Logarithmic
Lightolier Controls	ZP600FAM120	Logarithmic
Phillips	Sunrise - SR1200ZTUNV	

## ISOLATION

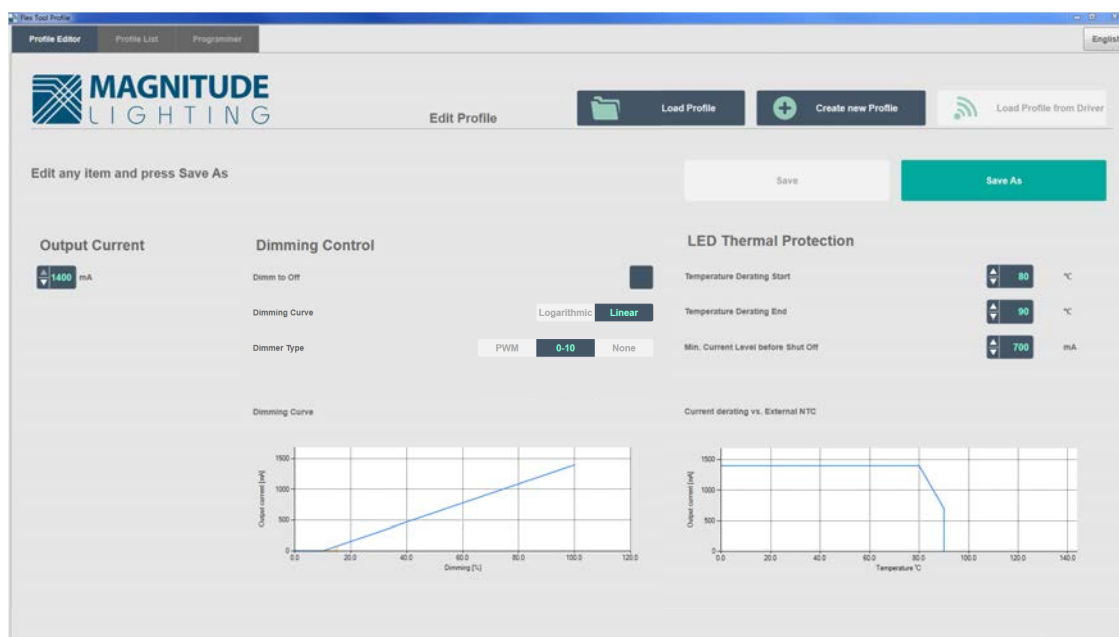
Isolation	INPUT	OUTPUT	0-10V	Enclosure
INPUT	N/A	2xU+1kV	2xU+1kV	2xU+1kV
OUTPUT	2xU+1kV	N/A	N/A	0.5kV
0-10V	2xU+1kV	N/A	N/A	0.5kV
Enclosure	2xU+1kV	0.5kV	0.5kV	N/A

# FLEXTOOL

## PROGRAMMING THE AFLEX DRIVER

The “FlexTool” is a wireless programmer used to program Magnitude’s Flex Series of LED Drivers. By using the FlexTool, OEM’s can quickly and smoothly configure the drivers parameters without applying power or wires to the driver.

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



### PROGRAMMABLE OUTPUT CURRENT

1mA step programmable from 100mA to 1400mA. Factory Default: 1400mA

### DIMMING CONTROL

- Dim to Off: yes/no (check box) Factory Default: yes
- Dimming Curve: Linear or Log. Factory Default: Linear
- Dimming type: 0-10V / Non. Factory Default: 0-10V

### LED THERMAL PROTECTION

- Temperature Derating start. Factory Default: 70°C
- Temperature Derating end. Factory Default: 100°C
- Minimum Current Level Before Shutoff: 1mA

