

Constant Current Electronic 0-10V Dimmable Programmable LED Driver

P/N: AFLEX-

The AFLEX Compact platform offers the unparalleled ability to program the drivers power in addition to the output current, dimming curve, dim-to-off functionality, NTC settings and more all while maintaining high efficiency over the programmable range. This unique technological advancement enables both ultimate design flexibility and significant SKU elimination. Programming the driver does not require any power and can be done in less than one second. The available auxiliary output provides a power source for sensors and/or cooling devices, eliminating the need for an additional power supply. The AFLEX driver is dimmable down to 0.1% with a 0-10V dimmer. Unequaled flexibility and performance along with Class P approval and Title 24 compliance makes the AFLEX driver the perfect choice for commercial lighting fixture application. Title 24 compliance is dependant on dimmer luminaire combination.

Installation: Terminal Blocks with Side Feed or Dual (Side and Back) Feed Options

Driver Type: Class 2 Single Channel

Dimming: 0-10V Dimmable Down to 0.1% with Dim-to-Off Capability

Input Voltage: Universal 120VAC to 277VAC, 50/60Hz

Output Voltage: 3 - 57VDC

Output Current: 100 - 1400mA (1mA Step Programmable)

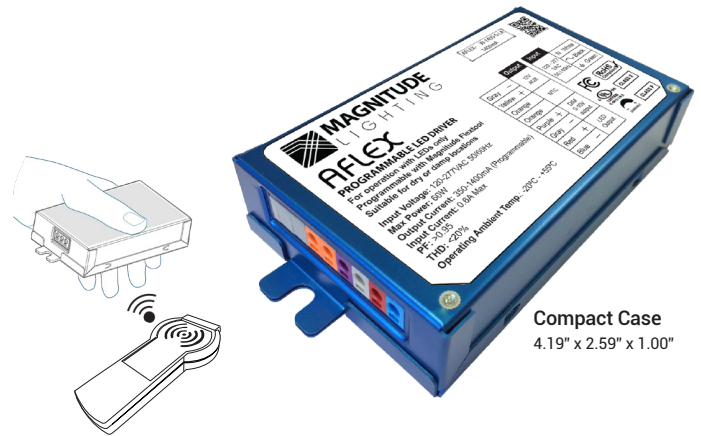
Environmental: Dry

IP Rating: IP40

Listing: UL Listed, Class P, Class 2

Certifications: UL8750 | CSA C22.2 No. 250.13-14

Warranty: 5-Year Warranty



Compact Case
4.19" x 2.59" x 1.00"



DIM DOWN TO 0.1%

120 - 277VAC

100 - 1400mA

CLASS 2

IP40



CLASS P



RoHS Compliant



Wireless Programmable Features

- Programmable Power 30 to 60W
- Output Current (1mA Step Programmable)
- Dimming Curve (Linear / Logarithmic)
- Dim-to-Off (On / Off)
- NTC Settings



AFLEX SERIES is also available in:

- AFLEX Linear
- JB SERIES

Refer to Magnitudeinc.com for more details.

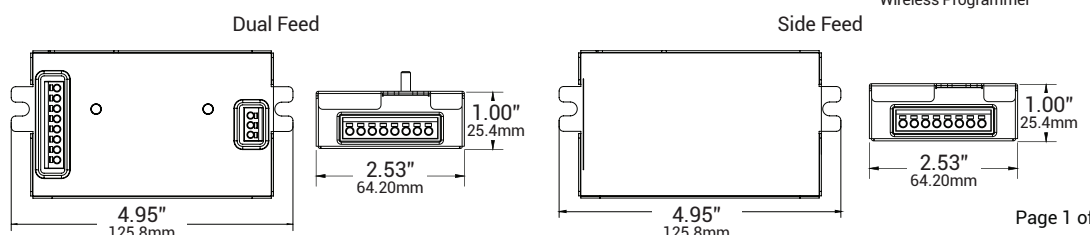
Ordering Guide Default: AFLEX-60W-1400-S-LA

AFLEX - W - 1400 - -

TYPE	MAX POWER	OUTPUT CURRENT	CASE STYLE	DIMMING CURVE	AUX POWER (OPTION)	
AFLEX - AFLEX	30 to 60W - 30 to 60W Programmable	100 to 1400mA	S - Side Feed (Std)	L - Linear Curve (Std)	A - 12V PS (Std)	Default Setting Unless Specified Otherwise
AFLEX - AFLEX	30W - 30W	100-1400 - 100-1400mA (3-57VDC)	S' - Side Feed	G - Logarithmic	- Leave Blank For No Aux Power	
	40W - 40W		D - Dual Feed	L' - Linear	A' - 12V PS	
	50W - 50W					
	60W - 60W					

 **Pre-Programmed per Chosen Specification**

DIMENSIONS	
LENGTH	4.95" (125.8mm)
WIDTH	2.53" (64.20mm)
HEIGHT	1.00" (25.4mm)



Specifications

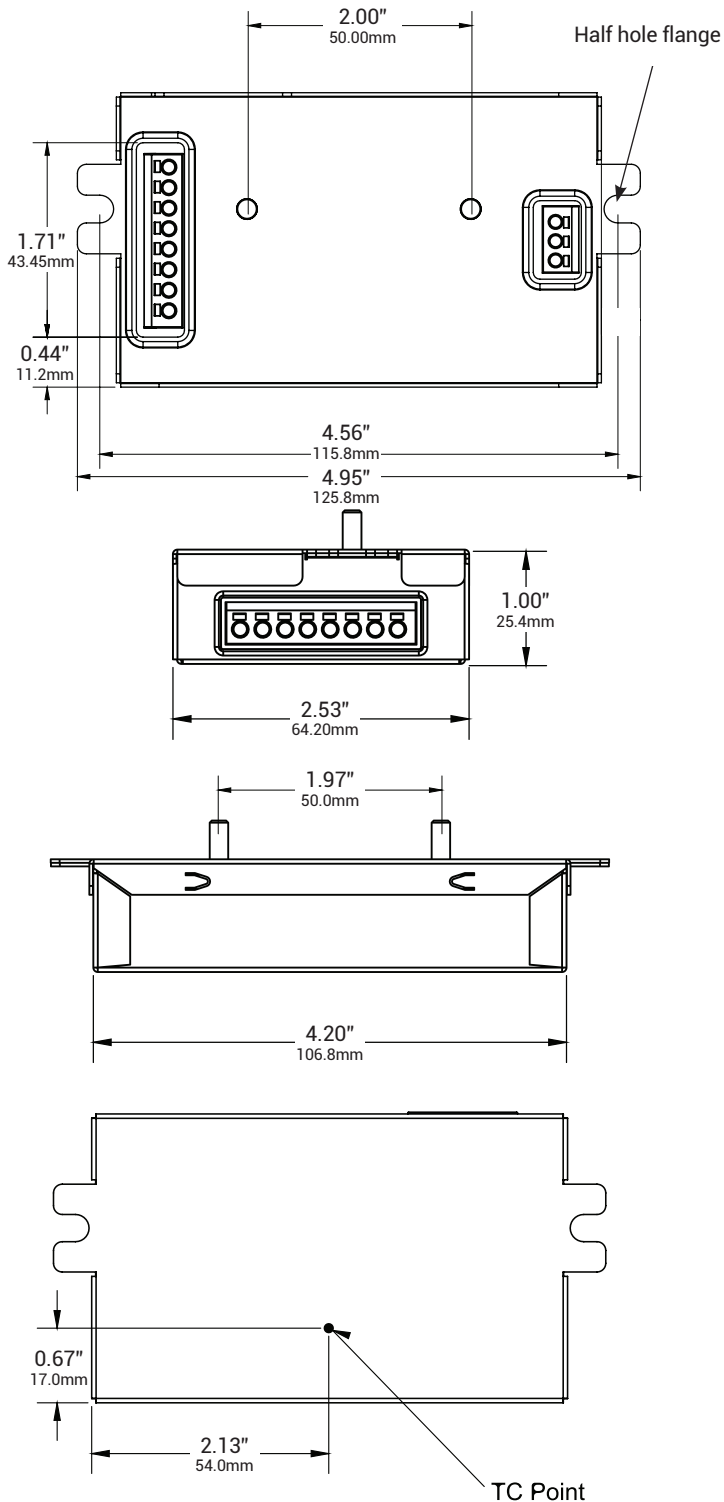
INPUT	
Input Voltage Range	Universal 120 - 277VAC $\pm$ 10%
Input Frequency	50 / 60Hz
Input Current	0.29A-0.6A@120VAC / 0.15A-0.25A@277VAC*
Inrush Current	38A Max
Efficiency	> 88%
Power Factor	0.991-0.992@120VAC / 0.90-0.95@277VAC* (Refer to graph on page 5)
OUTPUT	
Output Voltage Range	3 -57VDC
Output Current Range	100 - 1400mA (1mA step programmable)
Output Current Tolerance	$\pm$ 5%
Output Current Ripple	$\pm$ 5% @ Max load
Line Regulation	$\pm$ 0.5%
Load Regulation	$\pm$ 0.5%
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 Temperature	-40°C - +60°C
Operating Temperature	-40°C - +75°C
Storage Temperature	-40°C - +85°C
Expected Lifetime	50k hours at 75°C (Refer to graph on page 7)
Audible Noise	< 24dB Class A
Withstanding Voltage	2.5kV

* Depending on model

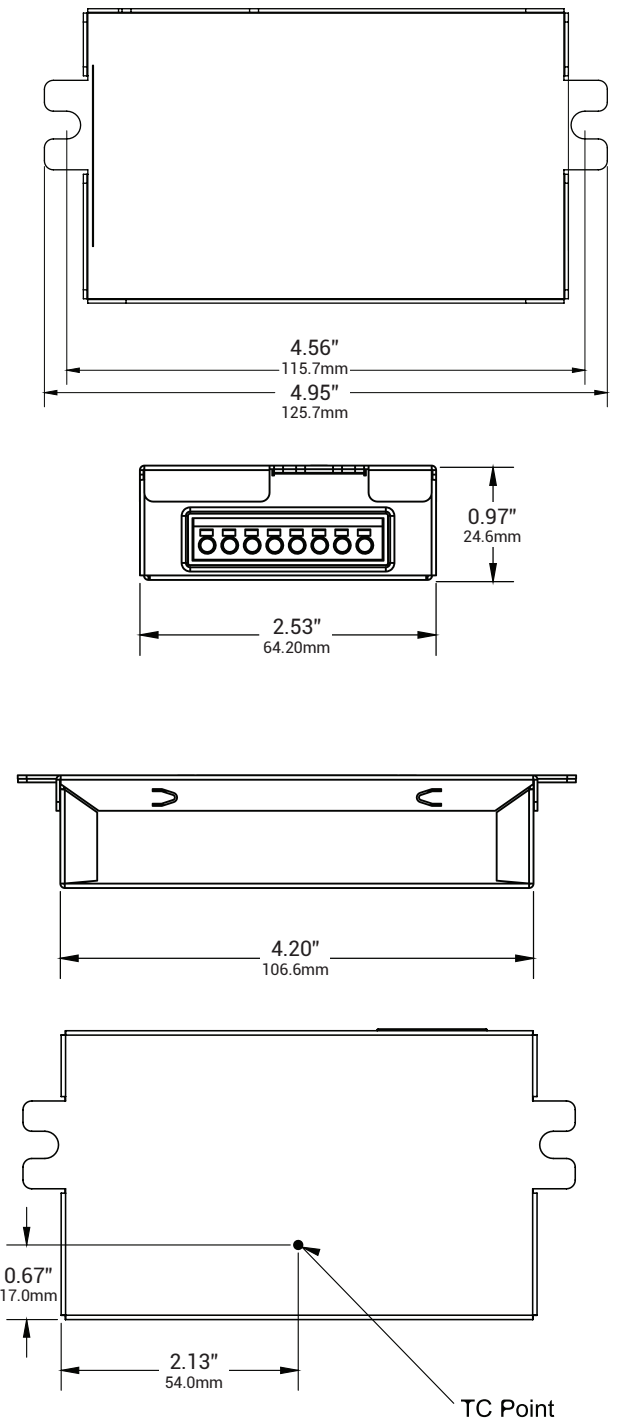
DIMMING	
Dimming Control	0-10V
Dimming Input Range	-2 to +15V
Dimming Curves	Linear / Logarithmic (Programmable)
Min. Dimming Level	Dim down to 0.1%
Dim to off	Yes (Programmable)
Current Consumption	0.35mA / Source
LED THERMAL PROTECTION (NTC)	
NTC Value (Manufacture: Vishay)	15 k Ω $\pm$ 5% @25°C P/N: NTC0805E3153JMT
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 Temperature Protection	Power derating (Refer to graph on page 7)
Mis-Wiring Protection	Auto shutdown
MECHANICAL HOUSING	
Length	4.19" (106.4mm)
Mounting Length	4.94" (125.7mm)
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 & Grey / 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) Two hole half flange mount (Dual Feed) 2 additional stud mounts
APPROVAL MARKINGS	
Certificates / Approval Signs	UL 8750 Class 2, Class P

Mechanical Diagram (Compact Case)

Dual Feed

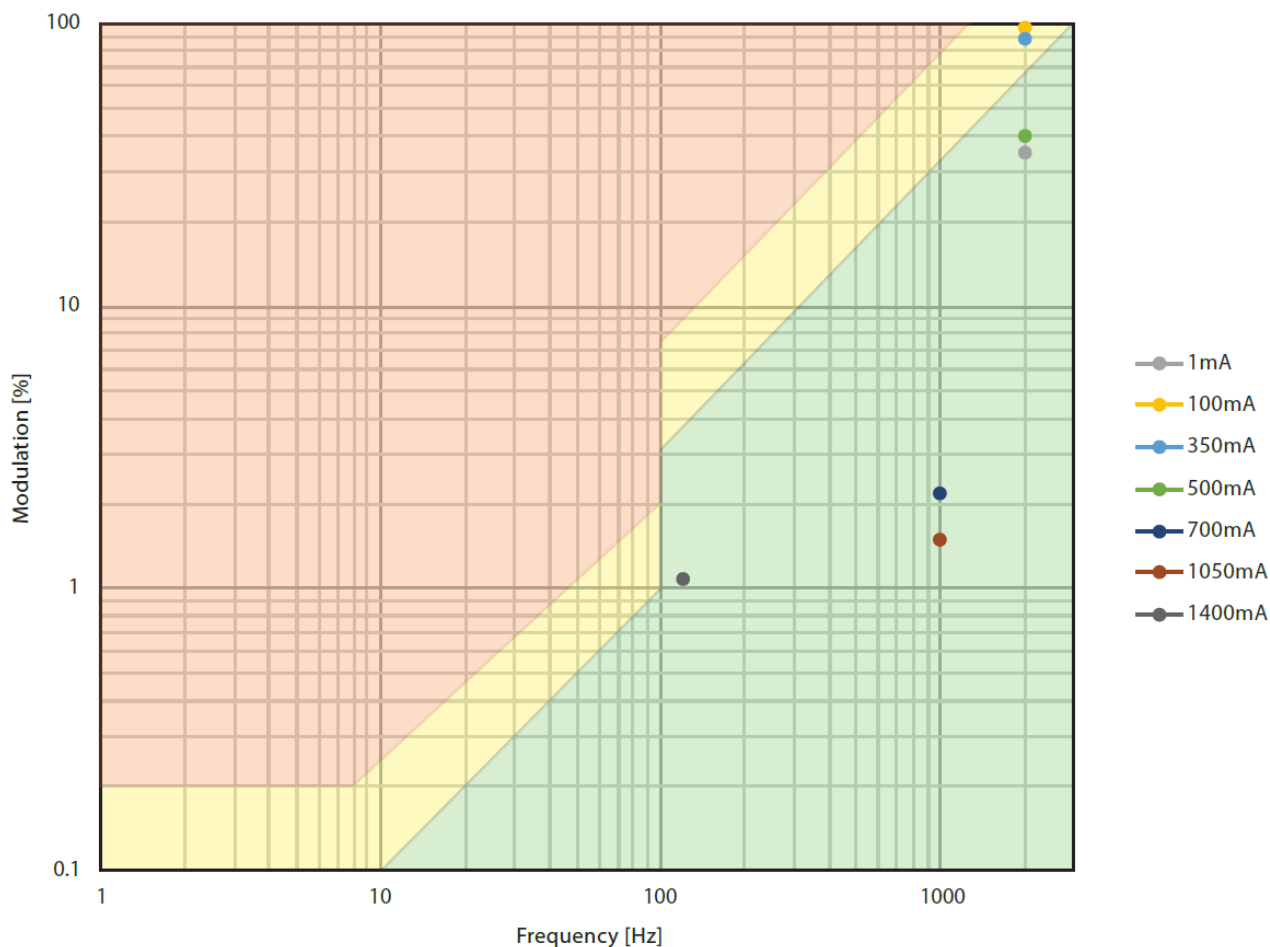


Side Feed

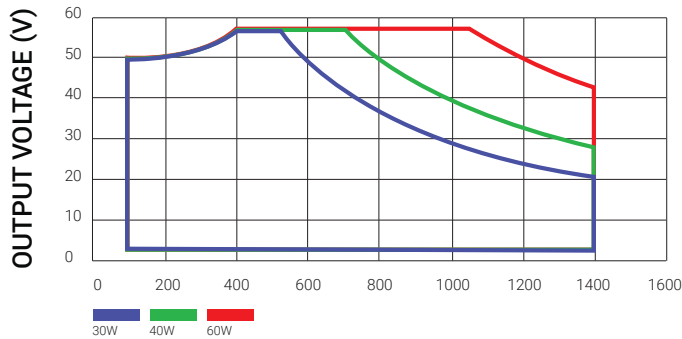


Flicker Performance

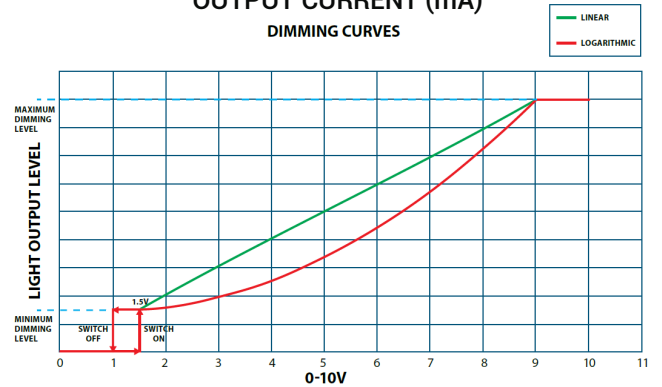
The IEEE P1789 flicker test results are presented graphically with no observable effect (green area), low-risk (yellow area), and high risk (red area).



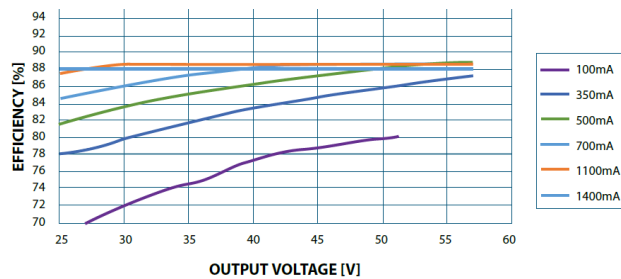
OPERATING RANGE



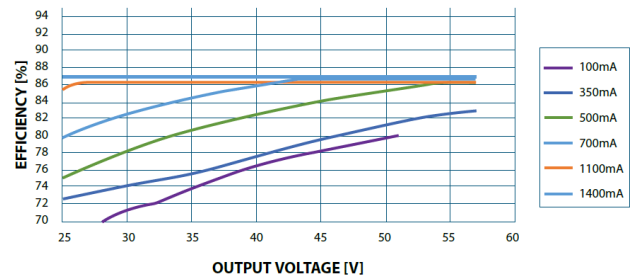
OUTPUT CURRENT (mA)
DIMMING CURVES



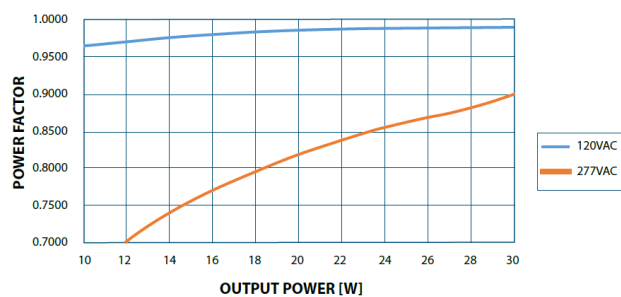
EFFICIENCY vs OUTPUT VOLTAGE (120VAC)



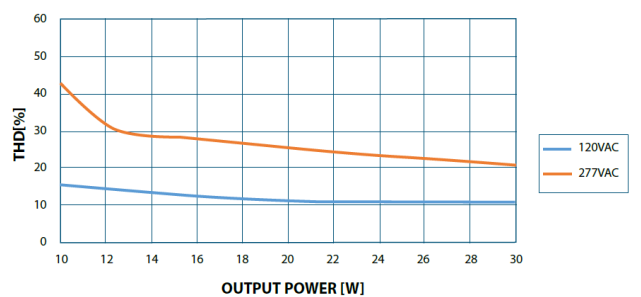
EFFICIENCY vs OUTPUT VOLTAGE (277VAC)



POWER FACTOR vs OUTPUT POWER



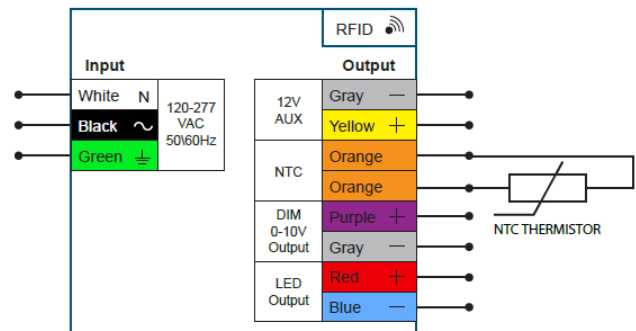
THD vs OUTPUT POWER



LED Thermal Protection (NTC)

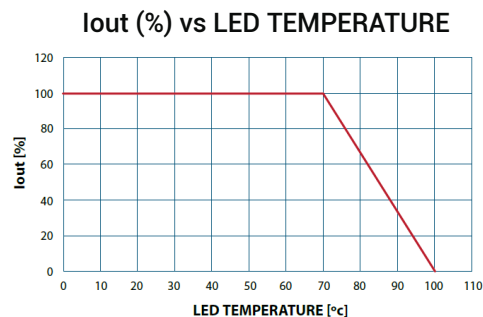
AFLEX Series drivers help protect the LED's lifetime and will reduce LED temperature by derating the output current in case of high temperatures. The negative temperature coefficient (NTC) thermistor must be connected to the LED driver as shown in the wiring diagram.

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

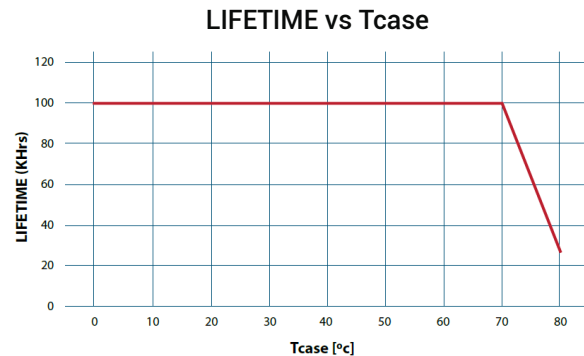
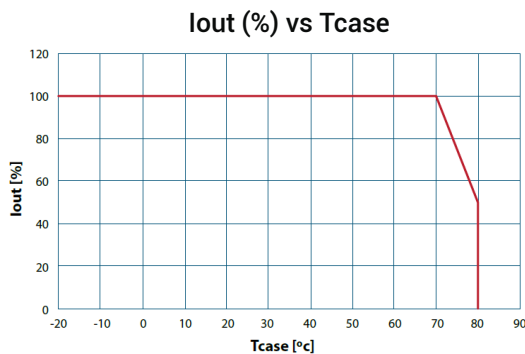


Compatible NTC Thermistor

SPECIFICATION	MANUFACTURER	MANUFACTURER P/N
15 kΩ ± 5% @ 25°C	Vishay	NTCS0805E3153JMT



Driver Thermal Protection



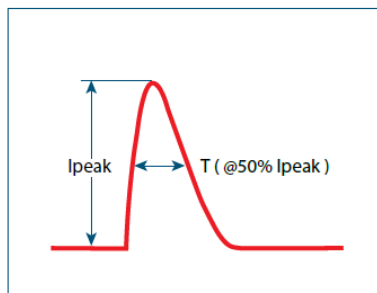
5% LED DROP ALLOWED			
AWG	100-700mA	700-1650mA	1500-2000mA
18	17ft	7ft	6ft
16	27ft	12ft	9ft
14	42ft	19ft	15ft
12	67ft	36ft	24ft

10% LED DROP ALLOWED			
AWG	100-700mA	700-1650mA	1500-2000mA
18	34ft	15ft	12ft
16	53ft	23ft	19ft
14	85ft	37ft	30ft
12	135ft	59ft	47ft

	MIN	MAX
Normal Operation	-40°C	+70°C
Derating Area	+70°C	+80°C
Protection Area	+80°C	
Resume operation after protection activated	+70°C	

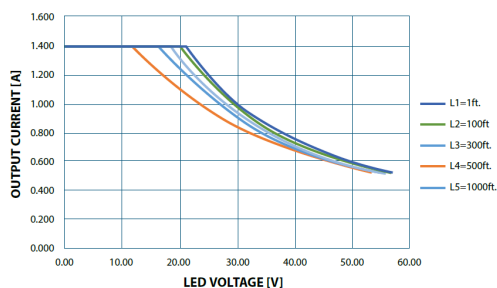
Inrush Current

VIN (V)	IPEAK (A)	T (@50% IPEAK)
120VAC	14.2	1.5 usec
277VAC	38	1.2 usec



Remote Installation

OUTPUT CURRENT vs LED VOLTAGE



TEST CONDITION:

1. Output Power = 40W
2. Output Current = 1.4A
3. Wire parameters = 18AWG, 16/ 30, 6.75Ω/ 1000'

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

Compatible 0-10V Dimmers

Refer to MagnitudeInc.com for compatability information.

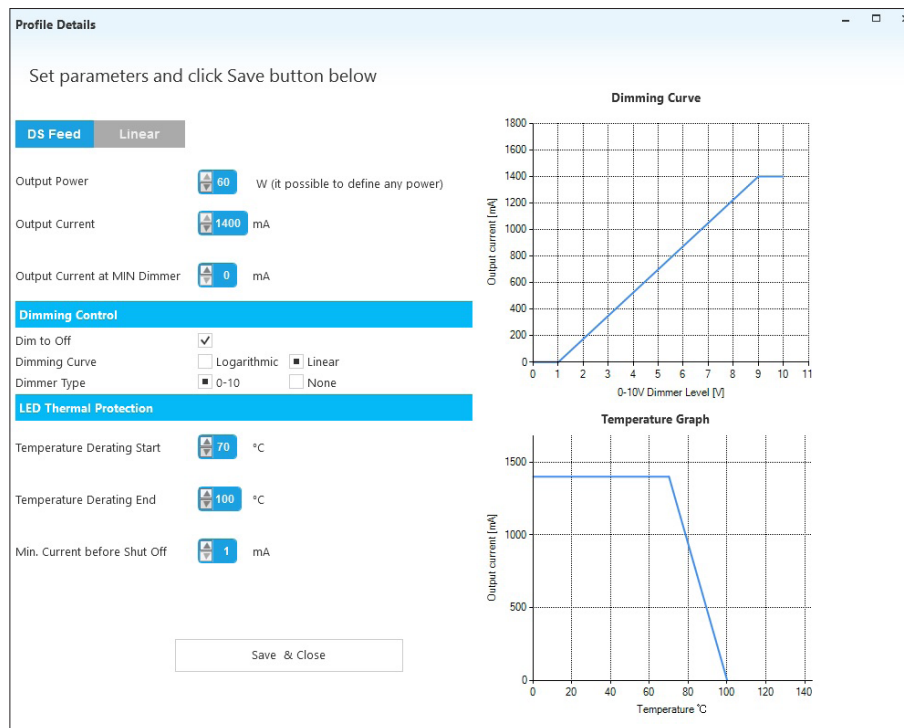
FLEXTOOL

P/N: FLEX-TOOL-G1

Programming the AFLEX Driver

The FlexTool 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 externally and use as needed. The software provides graphic and audio indication that the driver was successfully configured.



Programmable Output Current and Power

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

Dimming Control

- Dim to Off: Yes/No (check box) Factory Default: Yes
- Dimming Curve: Linear or Log. Factory Default: Linear
- Min. Dimming level before Dim to Off
- Factory default 1mA
- Dimming Type: 0-10V / None. 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

