

AFLEX™ Compact

Specification Sheet

Constant Current Electronic 0-10V Dimmable Programmable LED Driver

The **AFLEX™ Compact** platform offers the unparalleled ability to program the driver's 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™ Compact** 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™ Compact** driver the perfect choice for commercial lighting fixture application. Title 24 compliance is dependent on dimmer luminaire combination.



CLASS 2

CLASS P

120 - 277VAC

IP40

100 - 1400mA



- 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:** 10 - 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

The **AFLEX™ Compact** driver is also available in:

- **AFLEX™ Linear**
- **JB Series**

Please refer to Magnitudeinc.com for more information.

Ordering Guide

TYPE	MAX POWER	OUTPUT CURRENT	CASE STYLE	DIMMING CURVE	AUX POWER (OPTIONAL)
AFLEX — AFLEX	60W (Std)	1400mA (Std)	S — Side Feed (Std)	L — Linear Curve (Std)	A — 12V PS (Std)
AFLEX™ — AFLEX	30W — 30W 40W — 40W 50W — 50W 60W — 60W	100mA — 1400mA (10 - 57VDC)	S ¹ — Side Feed D — Dual Feed	G — Logarithmic L ¹ — Linear	— — Leave blank for no AUX A —
¹ = Default Setting					

Driver Dimensions

Length	4.95"	125.73mm
Width	2.53"	64.26mm
Height	1.00"	25.40mm

Wireless Programmable Features

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



Programming requires Flextool wireless programmer.

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*
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	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 +60°C
Operating Temperature	-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 *Depending on Model

LED THERMAL PROTECTION (NTC)

NTC Value	15 kΩ ± 5% @ 25°C
(Mfg. Manufacturer: Vishay)	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

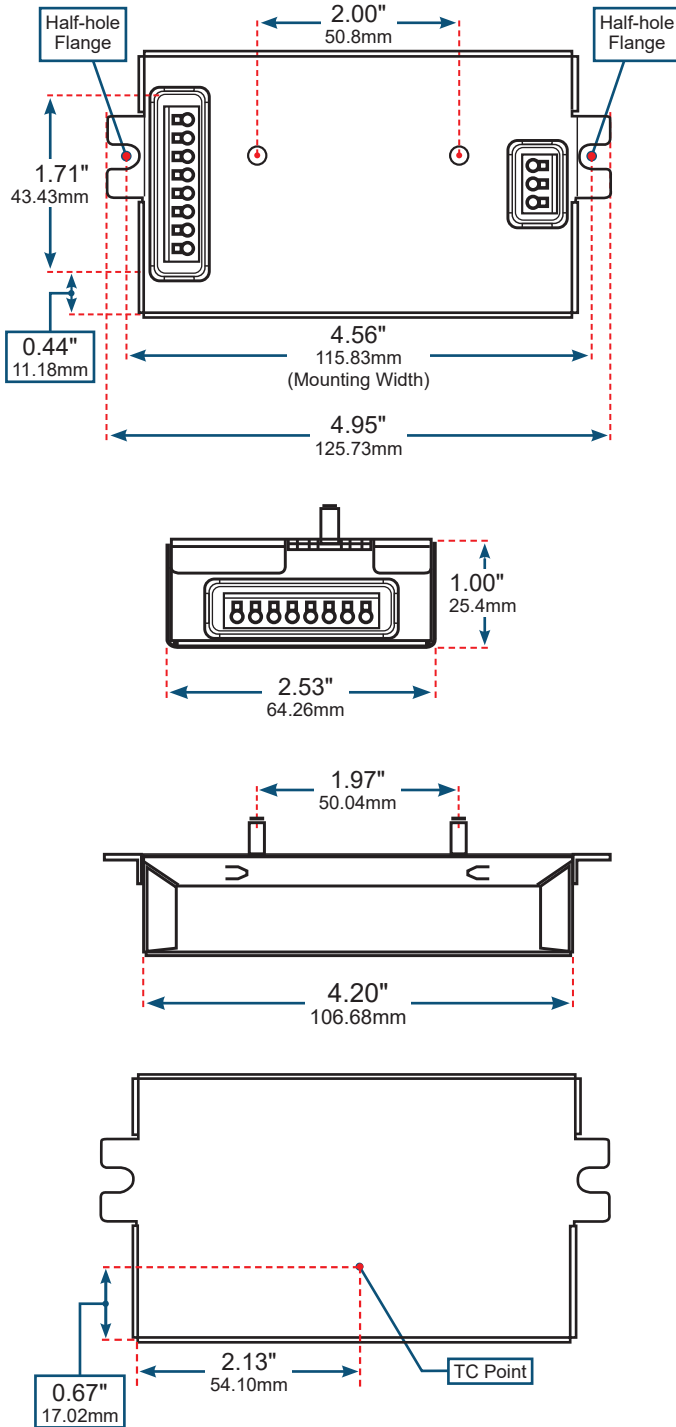
Length	4.19" (106.43mm)
Mounting Length	4.94" (125.48mm)
Width	2.59" (65.79mm)
Height	1.00" (25.4mm)
Housing Material	Aluminum
Housing Color	Blue Anodized
Junction Box	No
Input Connector Types	Black & White Wago 253, Dual Side 16 - 20AWG strip 3/8"
Output Connector Types	Red & Blue Wago 253, Dual Side 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

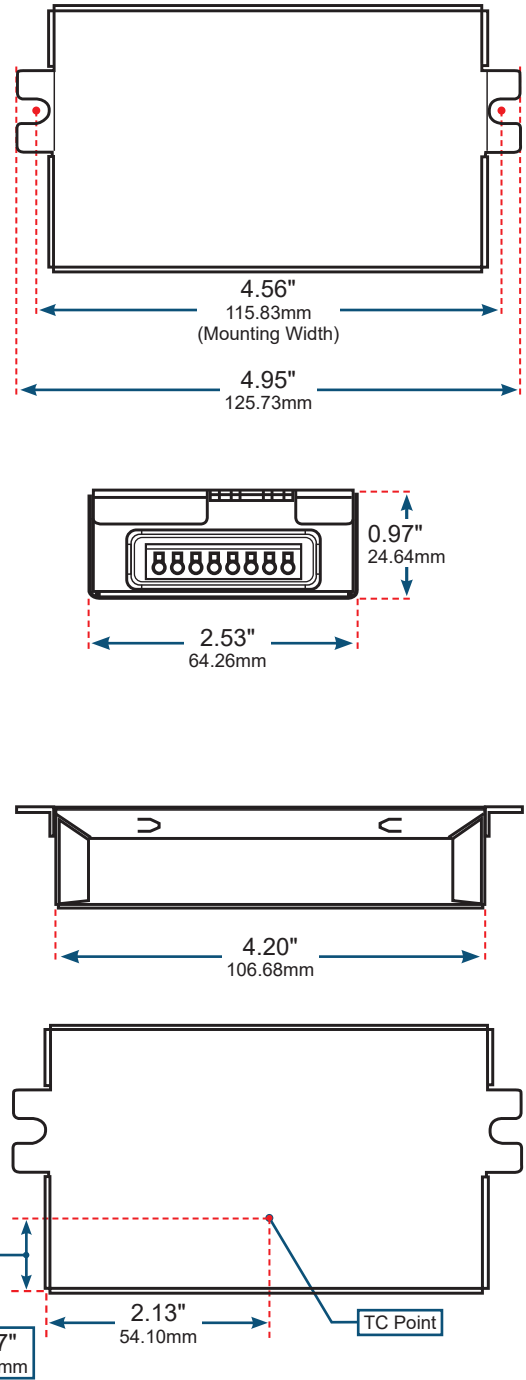
Certificates / Approval Signs	UL 8750 Class 2, Class P
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MECHANICAL DIAGRAMS

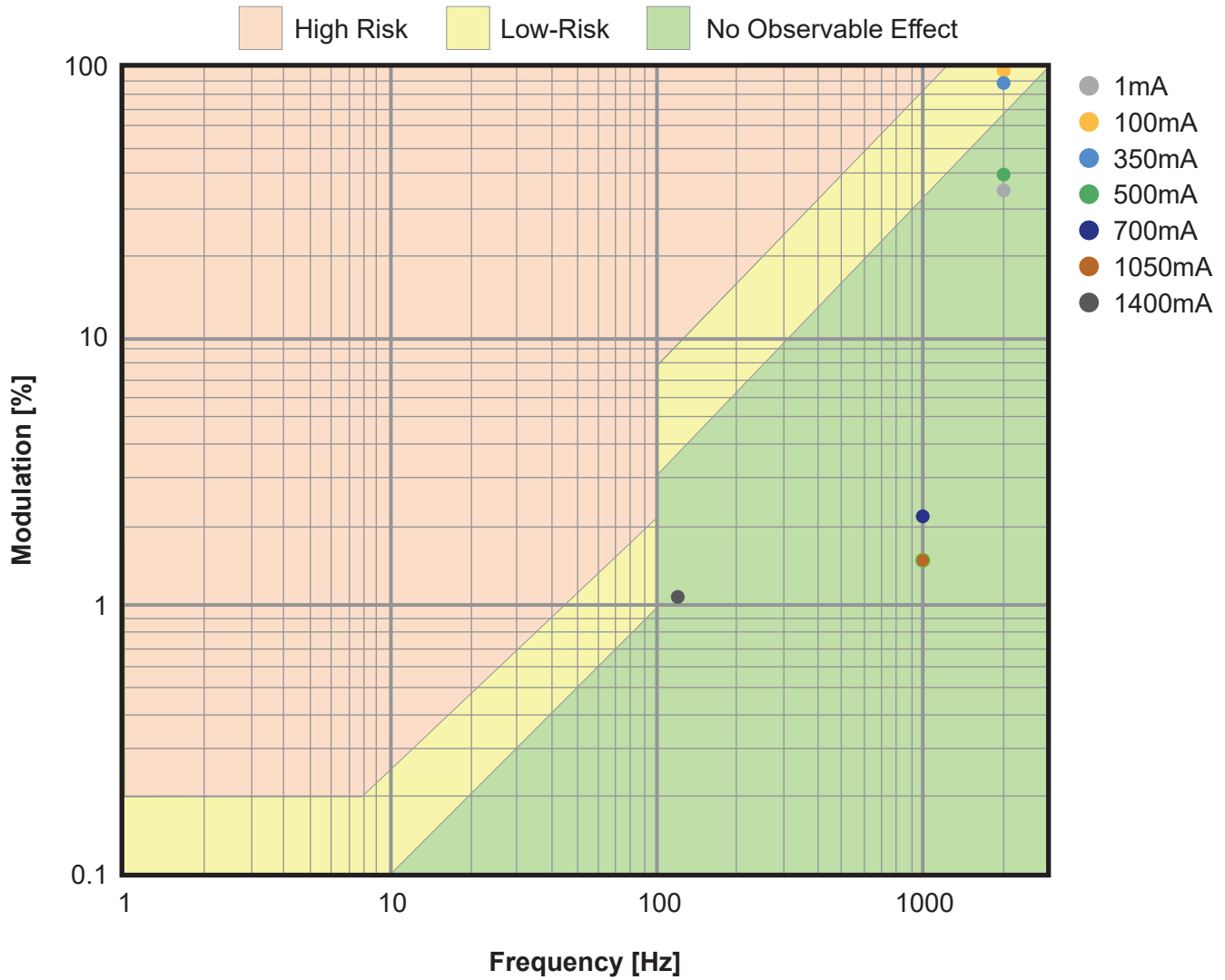
DUAL FEED

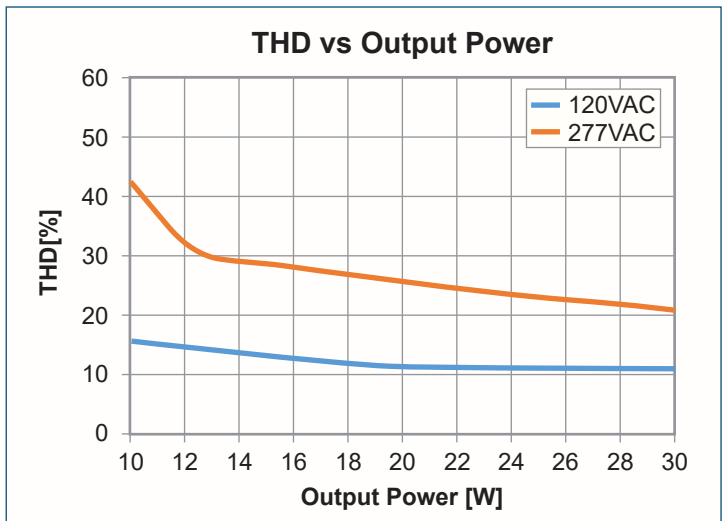
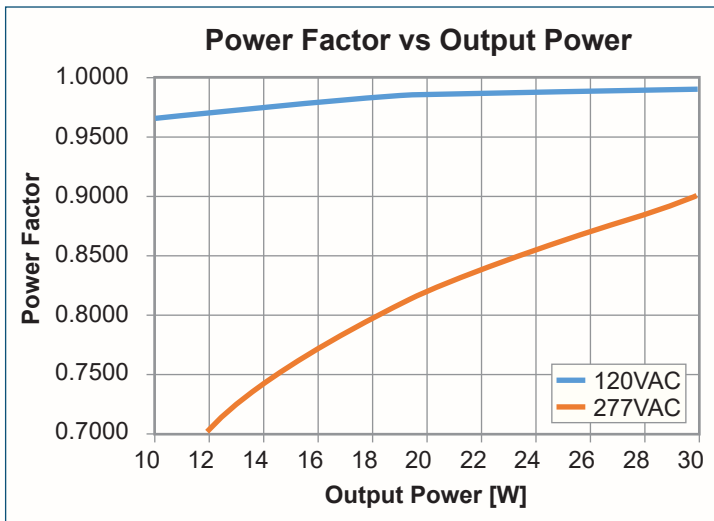
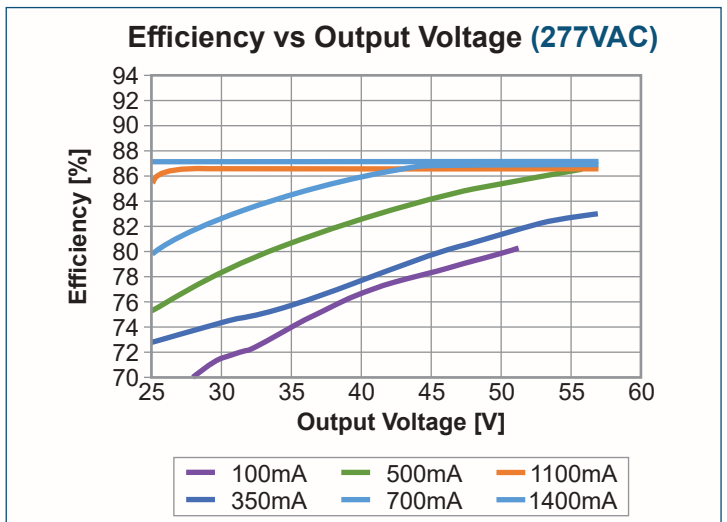
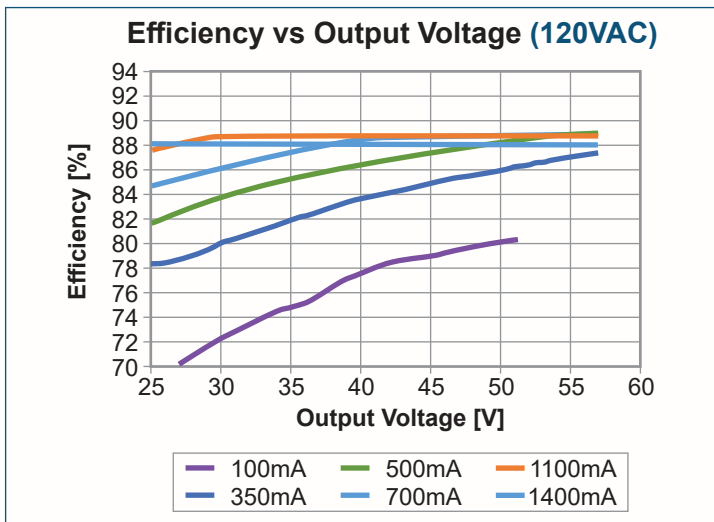
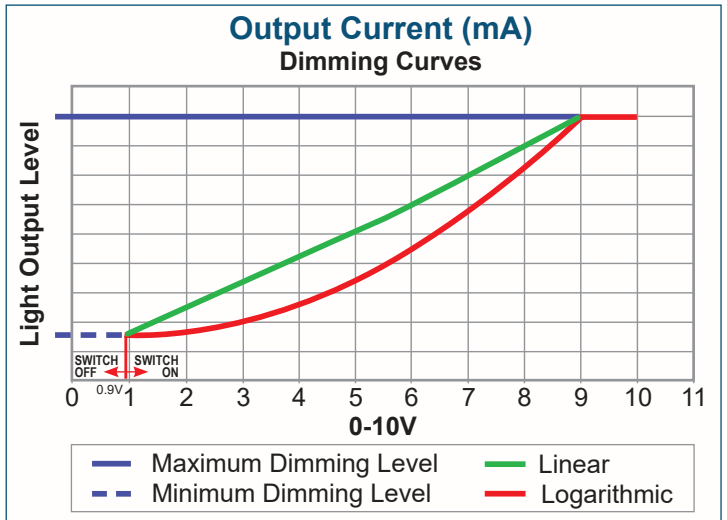
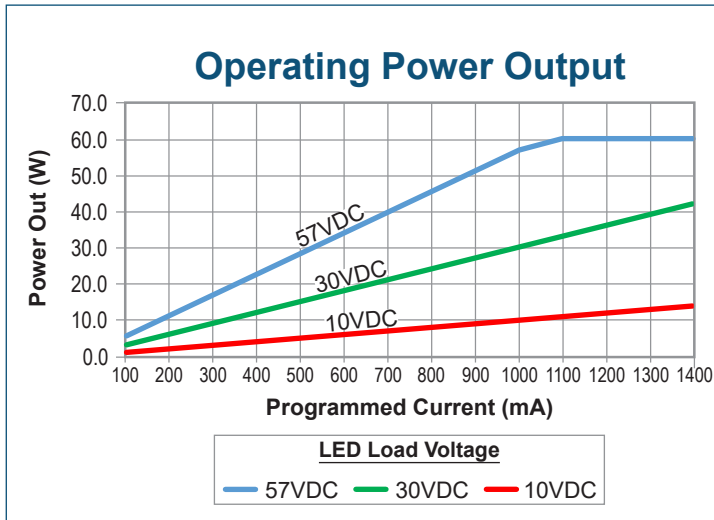


SIDE FEED



The IEEE P1789 Flicker Test Performance Results

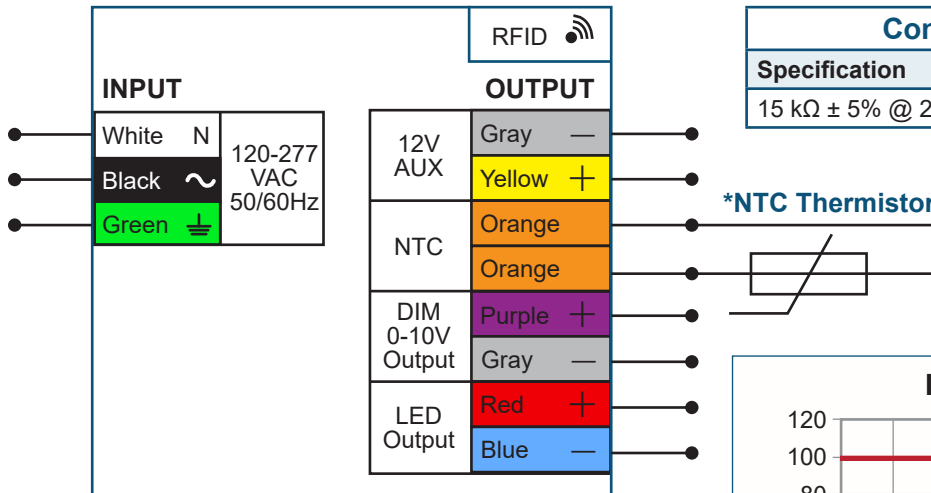




LED Thermal Protection (NTC)

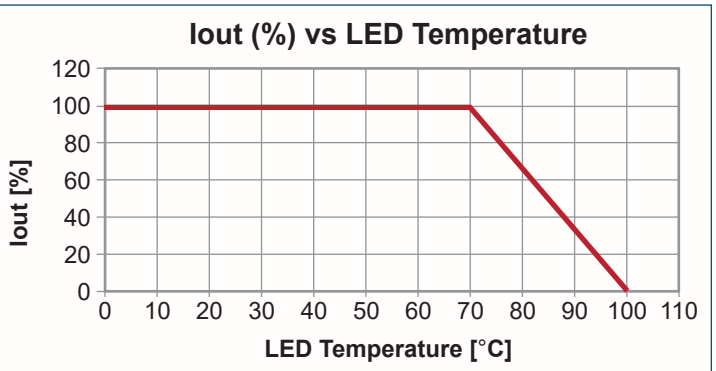
AFLEX™ series drivers help protect the LED's lifetime and will reduce LED temperature by derating the output current in case of high temperatures. The negative temperature coefficient (NTC) thermistor must be connected to the LED driver, as shown in the wiring diagram.

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.

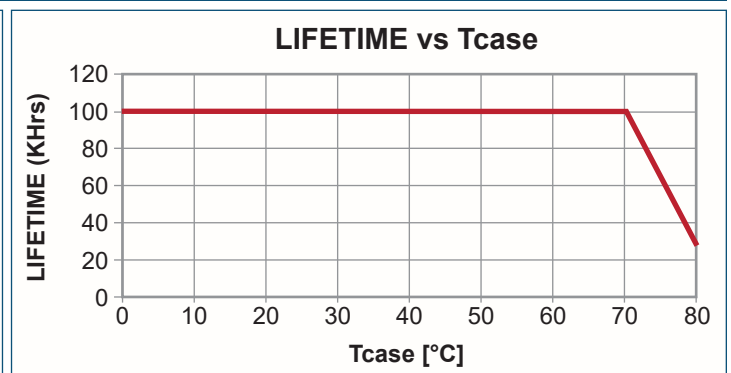
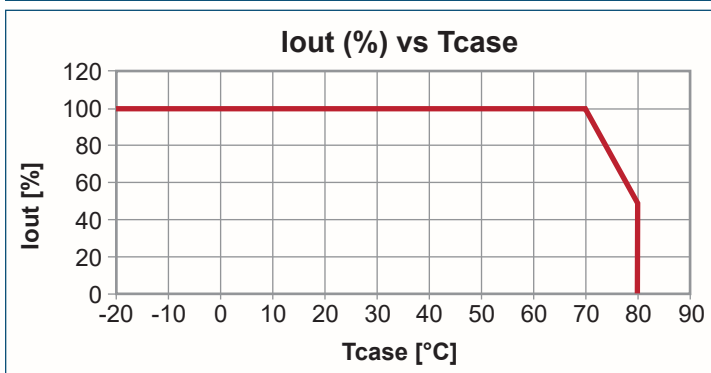


Compatible NTC Thermistor*

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



Driver Thermal Protection

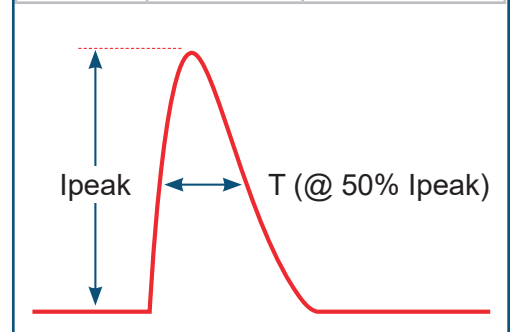


5% LED Drop Allowed			
AWG	100-700mA	700-1650mA	1500-2000mA
18	17 ft	7 ft	6 ft
16	27 ft	12 ft	9 ft
14	42 ft	19 ft	15 ft
12	67 ft	36 ft	24 ft

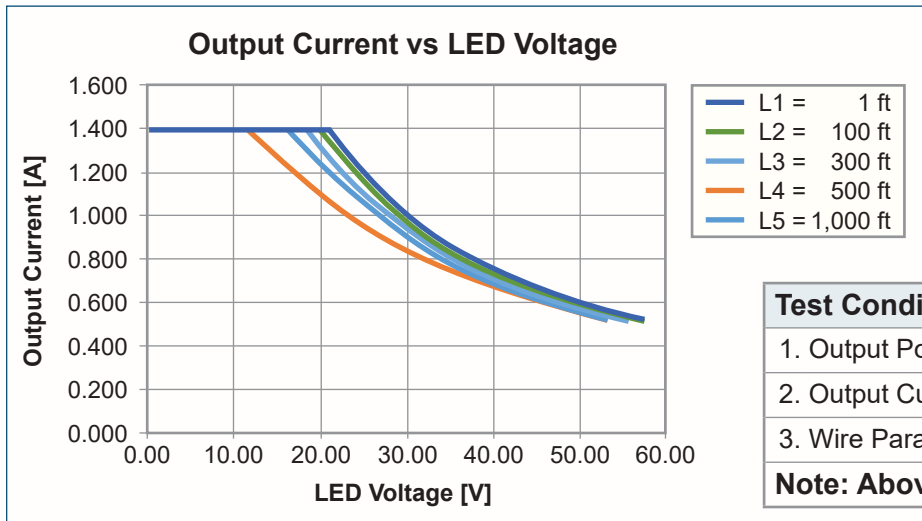
10% LED Drop Allowed			
AWG	100-700mA	700-1650mA	1500-2000mA
18	34 ft	15 ft	12 ft
16	53 ft	23 ft	19 ft
14	85 ft	37 ft	30 ft
12	135 ft	59 ft	47 ft

Temperature Rating		
Description	Minimum	Maximum
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	38.0	1.2 usec



Remote Installation



Test Condition	
1. Output Power	= 40W
2. Output Current	= 1.4A
3. Wire Parameters	= 18AWG, 16/30, 6.75Ω / 1,000'

Note: Above L = 100 ft min / LED voltage = 10V

Compatible 0-10V Dimmers: Please refer to Magnitudeinc.com for compatibility information.

About the FlexTool Wireless Programmer

The FLEXTOOL wireless programmer is used to program Magnitude's Flex Series of LED drivers. By using the FLEXTOOL, OEM's 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.

Please see page 8 for programming information.

Programming the AFLEX™ Compact Driver

Programmable Output Current and Power

Current is programmable in 1mA steps. Power is programmable in 1W 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)
- Minimum Current (dimming level) before Shut-Off (Dim-to-Off); Factory Default: 1mA

LED Thermal Protection

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

The screenshot shows the 'Profile Details' window of the AFLEX Compact Driver software. It includes a 'Save & Close' button and two graphs on the right side.

Profile Details:

- DS Feed: Linear
- Output Power: 60 W (it possible to define any power)
- Output Current: 1400 mA
- Output Current at MIN Dimmer: 0 mA
- Dimming Control:**
 - Dim to Off:
 - Dimming Curve: Logarithmic Linear
 - Dimmer Type: 0-10 None
- LED Thermal Protection:**
 - Temperature Derating Start: 70 °C
 - Temperature Derating End: 100 °C
 - Min. Current before Shut Off: 1 mA

Dimming Curve Graph:

0-10V Dimmer Level [V]	Output current [mA]
0	0
1	140
2	280
3	420
4	560
5	700
6	840
7	980
8	1120
9	1260
10	1400

Temperature Graph:

Temperature °C	Output current [mA]
0	1400
20	1400
40	1400
60	1400
70	1400
80	1000
90	600
100	0