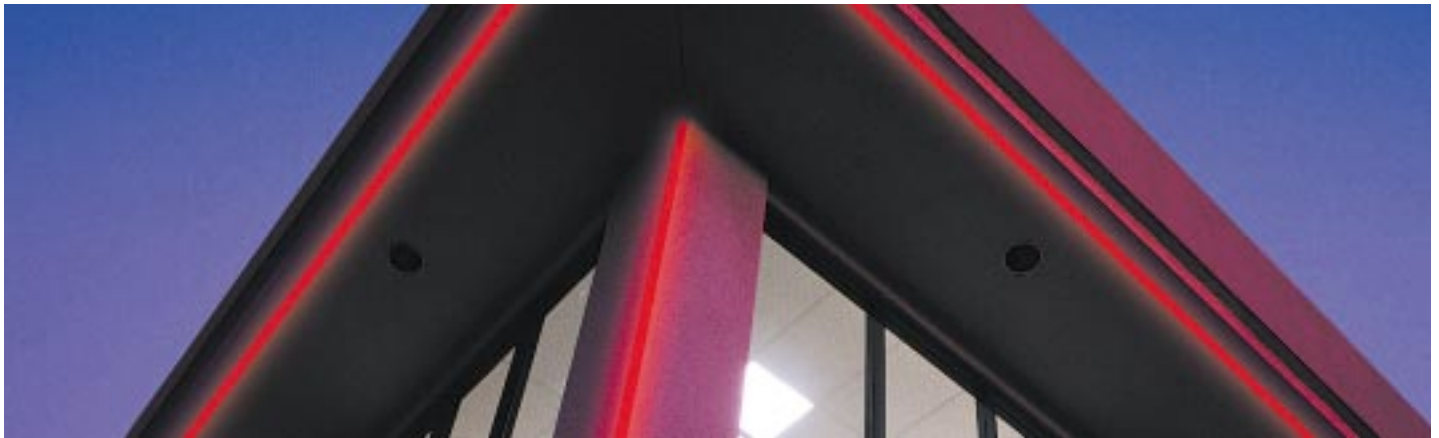


25W Dimming



This driver is included in the i-Xtanium (illumination) segment of the Xtanium family of products.

The 25W Dimming Driver provides the required DC current output for the LEDs while providing flexibility to the user to add their own personal touch to the illumination settings.

Xtanium™ Drivers have an operating life matching that of the LEDs.



Features

Square housing, compact size (83x75x32 mm)

Meet approbation requirements (UL, CSA, FCC)

Pulse Width Modulation (PWM) Dimming

Reliability

Power Efficiency

Benefits

Provides freedom (flexibility) to designers; Support spatial unobtrusiveness of LEDs; Can be fitted into the standard 4" junction box used.

It is a hazard free product; It can be installed in practically any location; Provides appropriate DC current level to LEDs.

Provides 0-10V Dimming control; Dimming level of 100% down to less than 5% allows maximum flexibility to the customer/user for all of the different applications considered.

Drivers last as long as LEDs ($\geq 50,000$ hrs); 5 years warranty (similar to ballasts); Short-circuit protected.

Optimization of the usage of the total system power; Customer pays for the power required and no more (optimized cost of ownership—COO); Power losses (up to 40% of total power) saved by constant operation mode; Switch Mode Power Supply design.

Selection Guide

Part Number	Description
LED120A0024V10D	120V/25W/24V/Dim Xitanium LED Driver

Electrical Characteristics

Input			
Parameter	Symbol	LED120A0024V10D	Units
Input Voltage Range	V_{in}	108 – 132	V
Frequency	f	60	Hz
Power Consumption Range	P_{in}	2.9 – 31.9	W
Efficiency	–	80% typical	%

Output			
Parameter	Symbol	LED120A0024V10D	Units
Power Output Range	P_o	2.3 – 25.5	W
Output Voltage Range	V_o	24.0 (± 1.2)	V
Dimming Control	D_{1-2}	0-10V (see Technical Requirements)	–
Total Harmonic Distortion	THD	20 Maximum	%
Power Factor	P_f	0.9 Minimum	–
Crest Factor LED Current	I_{pk}/I_{avg}	1.5 Maximum	–
Output Current	I_o	0.1 – 1.05	A

Notes:

- Electrical characteristics at 25°C ambient temperature.
- Output insulation 3.25KV, 50 Hz.
- FCC Class B for conducted EMI, FCC Class A for radiated EMI.

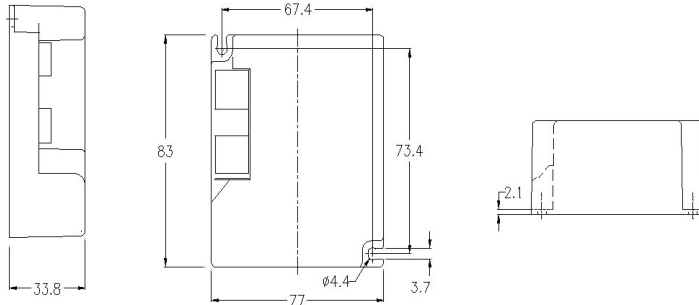
Environmental Ratings

Parameter	Symbol	Minimum	Maximum	Units
Operating Ambient Temperature	T_{op}	-40/-40	+60/+140	°C/°F
Storage Ambient Temperature	T_{st}	-40/-40	+80/+176	°C/°F
Case Temperature	T_c	–	+95/+203	°C/°F
Relative Humidity	RH	–	80	%
Lifetime (failures after 50,000 hours)	L_{50K}	–	5	%

Notes:

- Case temperature should be measured at test point T_c , as marked on driver label.

Mechanical Dimensions



Notes:

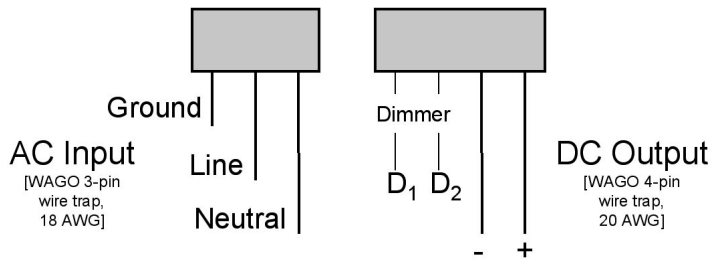
- All dimensions are in millimeters.
- Drawing not to scale.
- Feature two slots for mounting with M4 or #6 size screws.
- AC input WAGO 2-pin wire trap, 18AWG. Leads must be solid core or tinned if multi-stranded wire is used.
- DC output WAGO 4-pin wire trap, 18-20AWG. Leads must be solid core or tinned if multi-stranded wire is used.
- Housing material Noryl HS2000, UL 94-V0 flame retardant, color black.
- Driver weight, 140 grams.

Technical Requirements for Control Equipment

- The light output of the LEDs operated by the Dimmable Driver is controlled by DC voltage applied to the control input leads (D1, D2).
- The control device must be capable of accepting, or sinking, the DC current flow from the Driver. The maximum under any condition is 500 microamps per Driver.
- The control terminals of the Driver (D1, D2) are isolated from the power lines and are suitable for use as Class II terminals. As many Drivers as desired for use with the particular control device may be connected in parallel in a bus configuration. The length of the bus, the wire size of the bus and the number of Drivers connected on the bus must be configured so that the DC voltage drop as a function of the resistance of the wire and the control current flowing does not exceed 0.2 volts for dimming controls. For controls used as a minimum/maximum, or hi-lo 2-level application, the maximum DC voltage drop must not exceed 0.5 volt.
- If the control bus is opened, or if the control device internally opens the control bus under some conditions, the voltage on the control bus will then be a function of the ballast, which is $10V \pm 0.5$ volt. Maximum light output will be delivered under this condition.
- If the control bus is shorted either by a mechanical switch in the control or by the circuitry of the control device, or inadvertently in the wiring, the current on the control bus will be 500 microamps per Driver maximum. All Drivers on the control bus will then operate at minimum light level.
- As can be determined from the two above items, simple two-level operation of the Driver can be achieved by proper usage and application of a simple open/close switch on the control bus with maximum light being achieved when the switch is open and minimum light when the switch is closed.
- The Driver is intended for use with control voltages between 0 (zero) and 10 (ten) VDC. The control equipment must not impose a voltage greater than 11.0-volt peak maximum on the Driver control terminals.
- The DC control voltage should have a maximum peak to peak ripple (low and high frequency ripple) not exceeding 10% of the average VDC. Short-term transient voltage of the control devices must not exceed 14 volts.
- Control equipment intended to control more than one Driver must be capable of sinking the current supplied to the control bus by the maximum number of Drivers specified for the control device. At any given level setting it must maintain control bus voltage constant within a range of $\pm 5\%$ as the number of Drivers connected to the control bus varies from a minimum of one Driver up to the maximum number specified for the control device.
- Drivers of various ratings (120V, 230V...) may be mixed on the same control system.
- Since the control bus is Class II wiring, all control devices that are connected to the power line must have proper isolation between the power line and the control leads. Any control devices that are connected to the power line must have UL approval/recognition as Class II equipment.

Please contact Advance at 800-372-3331 if any technical assistance is required.

Driver Wiring Diagram



Part Number Description

LED xxx x xxxx x xx x

LED	LED Driver
xxx	Input Voltage (024, 120, 230)
x	AC or DC Input (A=AC; D=DC)
xxxx	Output Voltage in Volts or Output Current in mA
x	Output Mode (C=constant current; V=constant voltage)
xx	Output Current in tenths of Amps (1/10) or Max Open Circuit Voltage in Volts
x	Output Type (F=Fixed; D=Dimmable; C=use with DC/DC Controller only)

Example: LED 120 A 0012 V 21 F

LED	LED Driver
120	Input Voltage
A	AC Input
0012	Output (in Volts)
V	Constant Voltage
21	Output Current in tenths of Amps (i.e. 2.1 Amps)
F	Fixed Output