TECH NOTE

Facility Power Requirements for the LDX-36000 Series Laser Diode Drivers

INTRODUCTION

This Tech Note details the input power requirements of the ILX Lightwave LDX-36000 series high power laser diode drivers.

BACKGROUND

The LDX-36000 Series of laser diode drivers can power a wide range of high power devices, offering maximum output powers from 120 Watts to 3000 Watts.

Due to power supply inefficiencies, the input power to the LDX-36000 needs to be greater than the maximum output of the instrument. A laboratory 120 VAC wall outlet may have a nominal maximum current rating of 20 Amps. This gives Eqn. 1:

Eqn. 1) Power = Voltage x Current
Power = 120 VAC x 20 Amps= 2400 Watts

With a typical efficiency of input to output power of 85%, only 2000 Watts of power is available from the outlet. This limitation, imposed by codes governing electrical wiring, necessitates the use of a 220 VAC circuit to utilize the full output of the three highest output power LDX-36000 models: The LDX-36125-24, LDX-36070-30, and LDX-36040-70.

Table one lists the maximum voltage, current, and output power of all thirteen models in the series. The three models, denoted by a star, require a 220 VAC input in order to utilize their maximum output.

SUMMARY

The LDX-36125-24, LDX-36070-30, and LDX-36040-70 laser diode drivers must be supplied with 220 VAC for safe and proper operation.

ILX Lightwave Model	Max. Compliance Voltage	Max. Output Current	Max. Output Power
LDX-36010-12	12 V	10 A	120 W
LDX-36025-12	12 V	25 A	300 W
LDX-36050-12	12 V	50 A	600 W
LDX-36085-12	12 V	85 A	1020 W
LDX-36125-12	12 V	125 A	1500 W
LDX-36125-24*	24 V	125 A	3000 W
LDX-36040-30	30 V	40 A	1200 W
LDX-36070-30*	30 V	70 A	2100 W
LDX-36010-35	35 V	10 A	350 W
LDX-36018-35	35 V	18 A	630 W
LDX-36010-70	70 V	10 A	700 W
LDX-36018-70	70 V	18 A	1260 W
LDX-36040-70*	70 V	40 A	2800 W

* Models requiring 220 VAC input