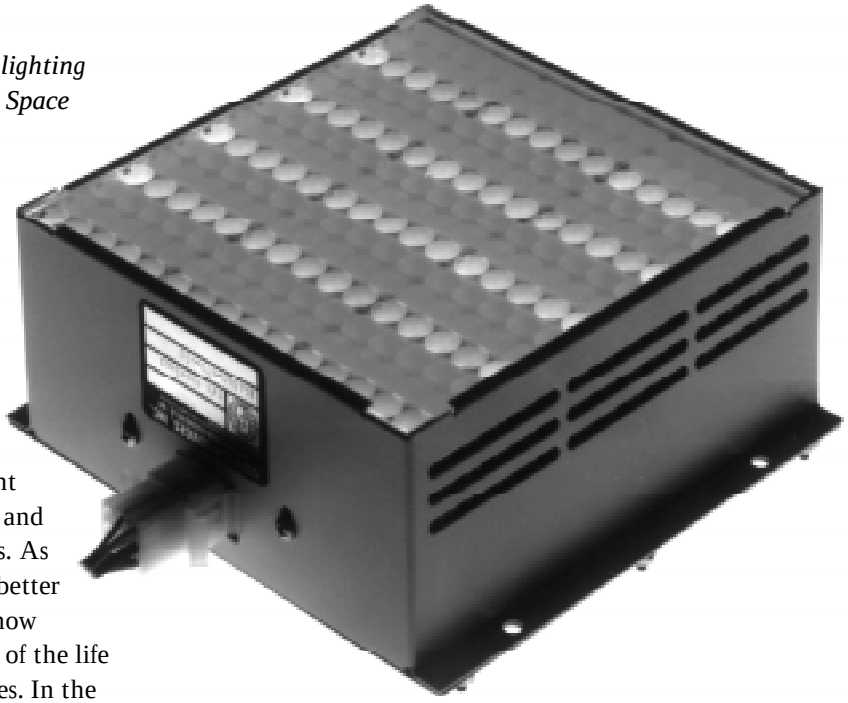
Quantum Devices, Inc.

"Improving the quality of life through the power in light"

New from Quantum Devices...

SNAP-LITE™

SNAP-LITES™ – a new innovative solid state lighting system developed for the United States Manned Space Program – is now available to replace the high thermal profile conventional lamp systems used by the environmental chamber industry for life science research.



Since the dawn of time, man has worshipped the sun for its inexhaustible energy, and sunlight as the driving force for all life on earth. In the 20th century man had tried to develop light sources that would reproduce the spectral quality and power of the solar spectrum but with little success. As we approach the 21st century, man has begun to better define the solar spectrum and the interaction of how photons of a specific wavelength can effect many of the life cycle processes within the study of the life sciences. In the last decade of the 20th century, scientists have started to define that the polychromatic quality of the solar spectrum may include photon energy that can be detrimental to the existence of life and in some species may be the major contributor to a premature demise of the species.

Prior to the development of the wavelength specific SNAP-LITE™ monochromatic solid state lighting system, scientists were faced with the arduous task of trying to filter out all of the unwanted spectral energy from a given polychromatic photon source. This often resulted in a significantly reduced photon energy level at the wavelength of interest. The SNAP-LITE™ is the first lighting product that can provide wavelength specific photon energy at power levels similar to many of those found in the solar spectrum without the need for filtering.

The SNAP-LITE™ solid state monolithic lighting technology was developed for the United States Manned Space Flight Program to provide an energy efficient monochromatic light source for illuminating the life science research habitats on board the Space Shuttle Transport (SST) and for future habitats being developed for the International Space Station (ISS).

The innovative SNAP-LITE™ has a patented thermal management system that removes all of the unwanted IR energy before it can contaminate or confound the research lighting application. It has been estimated that more than 80% of the energy load found in most common life science environmental chamber applications is the result of attempting to remove the unwanted IR energy imparted by the light source.

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FEATURES

LIGHT OUTPUT:

The SNAP-LITE™ is constructed with the latest state-of-the-art high efficiency Light Emitting Diodes (LEDs). Each 15 x 15 (6 x 6 inch) module has a irradiance power output that is continuously variable from 0 to 400µ mol/m^2/sec.

SPECTRAL QUALITY:

The SNAP-LITE™ monochromatic spectral quality is determined by the selection of wavelength specific narrow band pass LED die. The half power spectral bandwidth is typically +/- 15 nanometers of the peak wavelength.

BICHROMATIC SPECTRAL OUTPUT:

Each SNAP-LITE™ module has been designed to accommodate two separate channels of wavelength specific LED die in order to provide the means to produce a Bichromatic spectral output. The SNAP-LITE™ depicted in this literature has a Red 670 and Blue 470 nm bichromatic spectral output.

COMPUTER INTERFACE:

The power of the irradiance and the ratio of spectral mixing can be addressed and controlled in each of the SNAP-LITE™ modules through the patented Analog Power Buss (APB) distribution system. Each channel of the APB can be addressed through convenient BNC connectors provided on the main power supply. The APB is available in two building block formats, 1 to 8 SNAP-LITE™ modules and 1 to 16 SNAP-LITE™ modules.

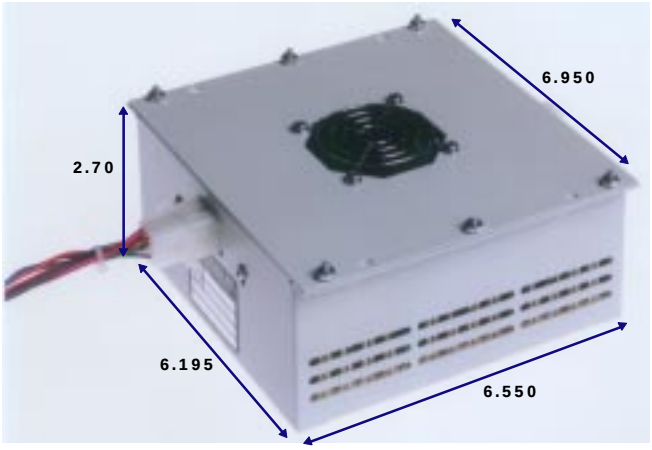
PULSED OR FLASH OPERATION:

The SNAP-LITE™ APB has been designed with an innovative feature that allows both channels to be pulsed or flashed independently. This feature has broad application for florescence or gene expression research. The pulse time has been designed to be computer controlled and has a minimum response time of 0.2 sec.

For further assistance on retrofitting the SNAP-LITE™ product to your existing chamber installations or for custom configurations, call the QDI engineering team.

ORDERING INFORMATION:

Single Beam: Model # SL1515-xxx
Dual Beam: Model # SL1515-xxx-xxx
“xxx” specifies central wavelength
(typically 670nm and 735nm)
Consult factory for custom wavelengths.



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“The Power in Light”

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