DATASHEET

06/2016

LedHUB

HIGH-POWER LED LIGHT ENGINE

Multicolor LED Light Engine with up to six TEC-cooled LED Modules

The Omicron LedHUB is a high power LED light source for Biotech, industrial and analytical applications. With its up to 6 different wavelengths between 340 and 950nm it can be used in applications like widefield microscopy, Calcium Imaging, optogenetics, chemical analysis, forensics and many more. The modular principle of the LedHUB® provides the possibility to start with only one or two wavelengths initially and user-upgradeability to further wavelengths at a later stage. The capability of fast switching between the wavelengths and high speed analogue modulation of the intensity is a key feature for demanding applications.

Key features of the LedHUB®:

- **Modular principle** for up to 6 different wavelengths with user-upgradability
- Individual analogue modulation inputs for fast power control of LED wavelengths
- **User replaceable 25mm standard excitation filters** (bandpass filters) for each LED channel
- Precise intensity control in 0.1% steps (0-100%) by computer control (USB)
- Individual digital modulation inputs for fast full on/off control with **<2µs switching time**
- **Intelligent SYNC** in- and outputs for master or slave control of/from external cameras or instruments
- **Stable & repeatable – TEC temperature controlled LED chips** for reliable and consistent results
- Compatible to 2, 3 and 5mm Liquid Light Guides and SMA or FC/PC connectorized quartz fibers
- Excellent uniformity over field of view – fixed and stable, no alignment necessary
- Long lifetime – expected to exceed 50,000 hours of operating time
- 36 months warranty

Dimensions:

Applications:

– Microscopy
– Optogenetics
– Calcium Imaging
– Flow Cytometry
– Chemical Analysis
– Forensics

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LedHUB® - Specifications:

Model:	**LedHUB® with up to 6 wavelengths**
Available wavelengths:	340nm / 50mW* 365nm / 400mW* 385nm / 1000mW* 405nm / 500mW* 455nm / 500mW* 470nm / 400mW* 505nm / 200mW* 505...600nm / 800mW* - wavelength selectable by bandpass filter 528nm / 250mW* 595nm / 250mW* 625nm / 500mW* 660nm / 500mW* 730nm / 600mW* 820nm / 600mW* 850nm / 600mW* 940nm / 600mW* * The optical output power depends on the used fiber or liquid light guide diameter and installed bandpass filters
Available fiber coupling types:	2mm Liquid Light Guide 3mm Liquid Light Guide 5mm Liquid Light Guide SMA-905 connectorized Quartz fibers FC/PC connectorized Quartz fibers
Excitation bandpass filters:	6x Bandpass filter (1 per wavelength) - easily exchangable by user - 25mm standard diameter filters
External Modulation:	6x Analogue modulation input: Frequency: DC...200kHz Rise-/falltime: <2µs Extinction ratio: ∞, infinite Input signal type: 0...5V or 0...10V (user configurable) Connector type: BNC or Sub-D 6x Digital modulation input: Frequency: DC...200kHz Rise-/falltime: <2µs Extinction ratio: ∞, infinite Input signal type: TTL (5V) Connector type: BNC or Sub-D
Internal signal generation:	6 Individually programmable PWM frequency generators (1 for each wavelength) Frequency: up to 200kHz Duty-Cycle: 1...99%
External synchronization:	1x SYNC-Input for synchronisation to external signals Input signal type: TTL (5V) Connector type: BNC or Sub-D 1x SYNC-Output for synchronisation of external units Output signal type: TTL (5V) Connector type: BNC or Sub-D
Control interface:	Type: USB 2.0 and RS-232
Control software:	Omicron Control Center - Windows™ based laser control software
Supply voltage:	100-240VAC, 50/60Hz, 250W max.
Mechanical size:	19 inch rack housing, 2 height units L x W x H: 383mm x 484mm x 88mm (without fiber coupler and connectors)
Available options:	LLGA2 - Liquid Light Guide Adapter including 2mm Liquid Light Guide (1.5m) LLGA3 - Liquid Light Guide Adapter including 3mm Liquid Light Guide (1.5m) LLGA5 - Liquid Light Guide Adapter including 5mm Liquid Light Guide (1.5m) LHSMA - Fiber coupling unit for SMA-905 connectorized fibers LHFCPC - Fiber coupling unit for FC/PC connectorized fibers LHOLYMP - Olympus microscope adapter for 3mm Liquid Light Guides LHLEICA - Leica microscope adapter for 3mm Liquid Light Guides LHZEISS - Zeiss microscope adapter for 3mm Liquid Light Guides LHNIKON - Nikon microscope adapter for 3mm Liquid Light Guides

LED Safety classification:

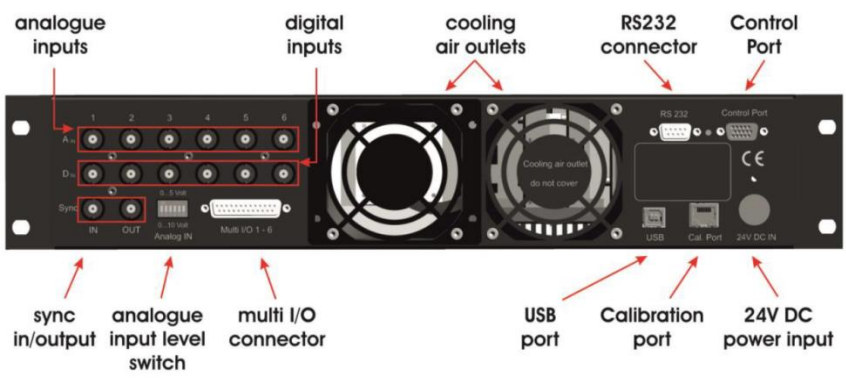
300-400nm:

390-410nm:

400-700nm:

700-2000nm:

Control interface:



Control Software: