

Fusion UV® LH10L Mark II System & LHP10L Mark IIM Power Supply

Fusion UV®

LH10L Mark II System



Customer supplied I25X irradiator

LHP10L Mark IIM Power Supply



Introduction

The **new LightHammer[®] 10L Mark II System** supersedes the Excelitas Fusion UV[®] F450T/F455T/F460T and VPS platforms.

The **new LightHammer[®] P10L Mark IIM Power Supply** makes upgrading your Legacy Excelitas Fusion UV microwave system and/or power supply easy! The LHP10L Mark IIM power supply was designed to replace an existing Excelitas Fusion UV P150/P155/P160 or VPS power supply in a retrofit installation. The fully supported existing I250-series irradiator/blower and RF detector can be used and do not need to be replaced.

The LH10L Mark II and LHP10L Mark IIM require less power than the legacy systems due to much improved efficiency and incorporation of power factor correction circuitry. Therefore, less current is required, and thus lower costs for electricity. Furthermore, with the power supply's completely balanced current draw from the 3-phase, your plant's existing electrical system will see an improved load handling capability. All reasons to upgrade to this new, state-of-the-art technological power supply.

LH10L MARK II & LHP10L MARK IIM FEATURES

- State-of-the-art electronics technology
- Power Factor Correction (PFC) of ~99% at full load
- Minimum Total Harmonic Distortion (THD)
- 200–480 VAC, 50/60 Hz universal input voltage
- Variable UV output up to 170 W/cm (410 W/in.)
- Higher reliability
- Multiple communications protocols enabled (DeviceNet™, Profibus®, Profinet®, EtherNet/IP™, Dry Contact)
- Real-time diagnostic capability
- Light weight and compact design
- Improved total cost of ownership
- The irradiator can be mounted vertically using “D” bulbs
- IoT-enabled with optional real-time data display and diagnostic capability

I25X IRRADIATOR FEATURES

- Increased UV output up to 170 W/cm (410 W/in.)
- Engineered modular and scalable design

IMPORTANT NOTE: When installing the LH10L Mark II or LHP10L Mark IIM into an existing legacy installation, all power supplies in a control group/row must be replaced. Differing power supplies cannot be mixed in a control group.

Some PLC remote input commands may need to be reprogrammed.

Specifications: LH10L Mark II & LHP10L Mark IIM

The new power supply is **AIMS® (Advanced Intelligent Monitoring System)** enabled and available with additional hardware and software. This feature provides careful on-board monitoring and analysis of system parameters, which can provide valuable information regarding the system performance and status. The result is improved system uptime and maintenance.

In many existing installations, interconnecting cables are located in cable trays/raceways; Excelitas Fusion UV has created adapter cables so the existing cables do not need to be removed. An adapter cable is supplied to connect the existing irradiator control and blower (if applicable) cables to the LHP10L Mark IIM power supply. An adapter cable is provided to connect the existing P150/P155/P160 RF-1 RF detector cable to the rear of the LHP10L Mark IIM. The VPS RF detector cable, however, does need to be replaced since this connection is made through the Multi-Row I/O or Customer I/O modules and is not directly connected to the power supply.

A pigtail input power adapter cable is available to connect the J101 terminal block of the LHP10L Mark IIM to the P101 input power connector used for the existing power supply.

NOTE: The I223 irradiators cannot be connected to the LHP10L Mark IIM power supply.

SYSTEM DESIGNATIONS & REQUIREMENTS

Available input voltages (50/60 Hz)	200 V–480 V $\pm 10\%$ auto-ranging
System ambient operating temperature	0–50°C
System ambient storage temperature	–40°C–70°C
Power supply	LHP10L Mark II
Altitude	0–2,000 m
Irradiator	I250-series, I250B, I254B
Relative humidity	30–95% (non-condensing)
Mobility	Stationary, rack-mounted
Environmental	Indoor use only
Pollution degree	2

TEST STANDARDS

Electrical safety (LHP10L Mark II)	UL 60950-1; CSA C22.2 No. 60950-1-07
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Specifications: LH10L Mark II & LHP10L Mark IIM

POWER SUPPLY	
Weight	27 kg (60 lbs.)
Dimensions	(W x H x L): 419 mm x 217 mm x 777 mm with connector (16.48 in. x 8.54 in. x 30.6 in. with connector)
Cooling	Internal fans
Input voltages	200 V–480 V (auto-ranging), 3-phase, 50/60 Hz
Max line current	At 380–480 V: 10–8 A, at 200–240 V: 19–16 A
Mounting position	Horizontal – unit can be free standing, stacked, or rack mounted
Line power at 100%	10 kVA
Clearance	Allow 305 mm (12 in.) clearance front and rear of the power supply for cooling air flow and cable connections
Safety interlocks	E-stop, external interlocks (customer I/O), RF fault
Mag current @ 100% power	890 mA/magnetron
Mag current output accuracy	±1%
Power factor @ 100% power	99%
I/O Communications	Primary/secondary (dry contact) (S), DeviceNet™ (O), Profibus® (O), Profinet® (O), EtherNet/IP™ (O)
Power level control	4–20 mA, 0–10 vdc, 4-bit binary, front panel
Front panel indicators/controls	Power on/off switch, USB port, display unit with on/standby/off buttons and power level control buttons
Output range	35% to 100%
Audible noise level	65 dBa @ 1 m (at lamp off/reset)
3-phase	50/60 Hz
Enclosure rating	IP20 (NEMA 1)
Stacking	5 units maximum

Specifications subject to change without notice.

LHP10L MARK II – POWER SUPPLY POWER LEVEL CONTROL OPTIONS

Method	Percent Control	Modes of Operation
DeviceNet™, Profibus®, EtherNet/IP™	1% steps	Remote/DeviceNet™, Profibus®, EtherNet/IP™ (additional module required)
4–20 mA input	1% steps, via primary/secondary operation	Remote/dry contact primary/ secondary
0–10 V input	1% steps, via primary/secondary operation	Remote/dry contact primary/ secondary
4-bit binary input	5% steps, via primary/secondary operation	Remote/dry contact primary/ secondary
Front panel switched	1% steps, via primary/secondary operation	Local/front panel

Specifications: LH10L Mark II & LHP10L Mark IIM

LHP10L Mark IIM power supply features & applicability

FEATURES	LHP10L
S/W update	
USB port	S
Communication	
Primary/secondary (dry contact)	S
DeviceNet™, Profibus®, Profinet®, EtherNet/IP™	O
Monitoring	
AIMS®	O
Possible replacement for power supply:	
P300S, LHP6 (legacy), LHP10 (legacy)	NA
P150*, P155*, P160*, VPS-4*	A
P600M	NA
VPS-6* (only when configured for 375 W/in.)	A
For use with irradiator – mounting position: any orientation	
I300M series	NA
16/16LH (legacy and Mark II) series	NA
I6B Mark II	NA
I250* series	A
I600M series	NA
LHI10 (legacy and Mark II) series	NA
LHI10B Mark II	NA
For use with modular blower:	
K6 (legacy)	NA
K6 Mark II	NA
K250*	A
K600 (legacy)	NA
K600 Mark II	NA

S = standard

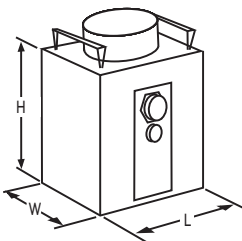
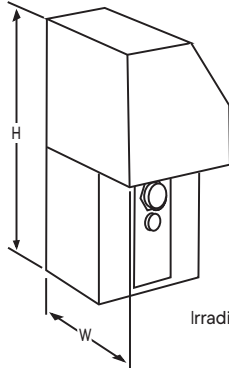
NA = not available/applicable

O = optional

A = available

* = requires adapter cables or new cables

IRRADIATOR/BLOWER: MODEL I250 & I250B WITH K250 BLOWER

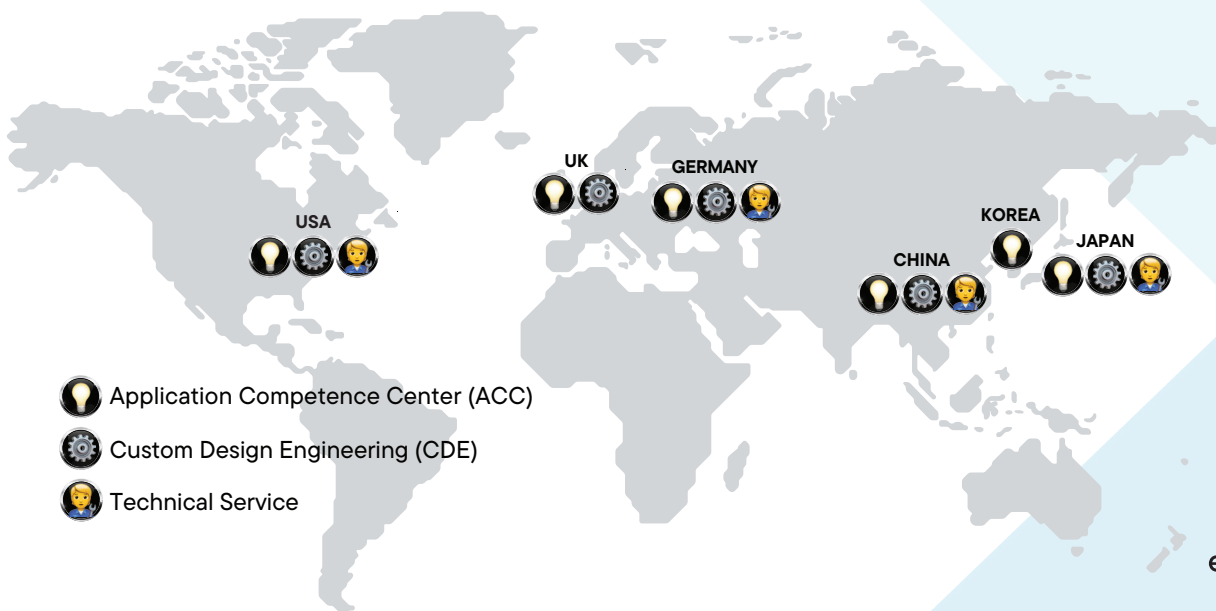
Weight	I250: 13.6 kg (30 lbs.) I250B: 26 kg (57 lbs.)
Dimensions	I250: 267 mm (10.5 in.) long x 206 mm (8.1 in.) wide at base x 333 mm (13.12 in.) high I250B: 267 mm (10.5 in.) long x 206 mm (8.1 in.) wide at blower top x 660 mm (26.0 in.) high   Irradiator, I250 Irradiator, I250B
Cooling	6.2 m ³ /min. @ 1,500 Pa (220 scfm @ 6.0 in. H ₂ O) to 8.2 m ³ /min. @ 2,615 Pa (290 scfm @ 10.5 in. H ₂ O) of filtered air
Reflector geometry	Elliptical, bulb at focus
Mounting position	Any angle with respect to vertical
Lamp power	170 W/cm (410 W/in.)
Substrate location	53 mm (2.1 in.) from irradiator face, for maximum irradiance
Light shield	Supplied separately from lamp system

NOTE: Care should be taken in operating I250 irradiators at 410 W/in., particularly if the power supply being replaced was capable of only 300 W/in. operation. Should this be the case, then the following is recommended...

- Additional irradiator cooling air may be required.
- Use of swept reflectors may not be desirable. Basic, non-swept reflectors maintain higher internal irradiator air pressures.
- Depending on temperatures and air flow, operation of 9 mm bulbs at 410 W/in. may result in shorter bulb life. 11 mm and 13 mm bulbs will typically operate at 410 W/in. more efficiently.

Contact your local Excelitas Fusion UV office for an engineered solution for your specific requirements.

Success Factor: Regional teams close to our customers



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