

# LPL Series of Low-profile Programmable

## Why Choose the LPL Series?

In ATE System Applications, rack space is a highly coveted asset. Traditional modular loads require at least 3U (5.25") of rack space, additional mainframe cost, and are limited in power rating, typically below 300W. Why spend your rack space and budget when you don't need to?

AMREL's LPL Series of "Low-profile" dc Electronic eLoads occupies only 1U (1.75") of rack space, while offering the industry's highest power density, making it an ideal ATE solution. With the industry's widest model selection, the LPL Series ranges from 150W to 800W without the added cost of a mainframe or sacrificing valuable rack space. For an economical solution with all the necessary ATE capabilities in an ultra-compact package, the LPL eLoad is your clear choice!

## Markets and Applications:

- Battery/Energy Storage/Ultracapacitor Testing and Validation
- dc Power Supply and Battery Charger Validation and Testing
- Fuel Cell Durability, Lifetime and Performance Characterization
- Single Cell and Short Stack Fuel Cell Characterization
- EIS/Impedance Measurement
- Defense/Aerospace and Avionics ATE, Electronics and Power Sources Testing
- Thin-film, Single- & Poly-silicone PV Design Validation and Testing
- Power Supply, Power Electronics/Components Validation and Testing
- Industrial Applications: Generator/Alternator, UPS/Battery Banks, Datacenter Backup Power, and Automotive Power Electronics & Components
- Lab/Bench-top Applications: Ideal for R&D, Testing and QC Engineers
- Power Electronics/Components, dc Distribution & dc-dc Converters
- Universities
- National Research Labs



### LPL SELECTOR GUIDE

LPL XXX - YY - ZZZ and OPTIONS\*  
XXX-POWER | YY - VOLTAGE | ZZZ - CURRENT

EFU-L = Field Upgradeable Ethernet & USB Available \*

UL=Ultra-low Current Range Option Available\*

ISOL=Isolated Analog Programming Option\*

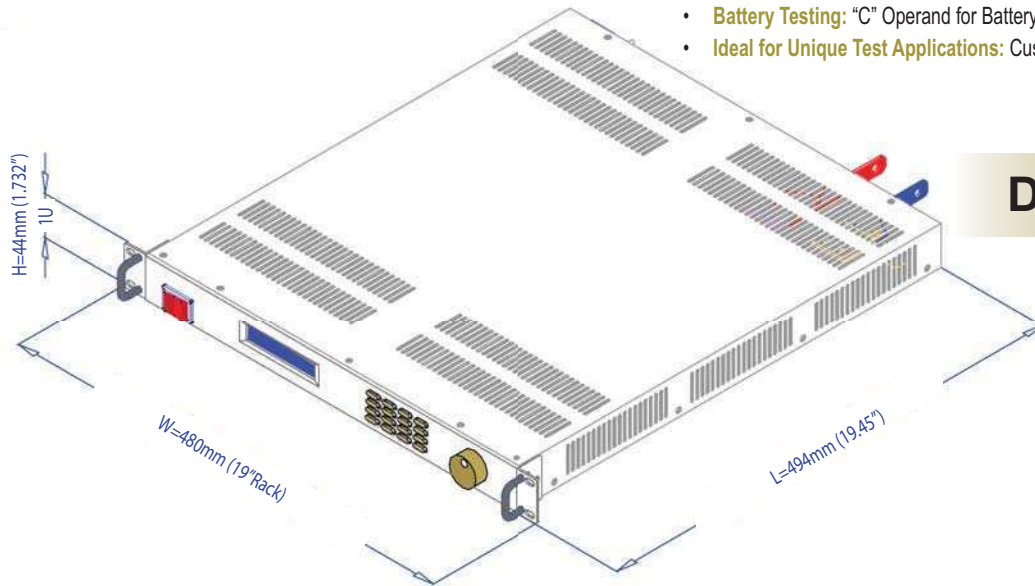
R=Isolation Relay Option (<30Adc)\*

Series	Model #	Power (W)	Voltage (Vdc)	Current (Adc)	V <sub>MIN</sub> at I <sub>MAX</sub> (Vdc)	Size (Height, Depth)
LPL	LPL150-60-50	150W	60	50	0.5	1U, 21"D
LPL	LPL150-120-25	150W	120	25	1.75	1U, 21"D
LPL	LPL150-400-8	150W	400	8	1.6	1U, 21"D
LPL	LPL150-600-5	150W	600	5	4	1U, 21"D
LPL	LPL300-60-100	300W	60	100	0.6	1U, 21"D
LPL	LPL300-120-50	300W	120	50	1	1U, 21"D
LPL	LPL300-400-15	300W	400	15	1.8	1U, 21"D
LPL	LPL300-600-10	300W	600	10	5	1U, 21"D
LPL	LPL600-60-100	600W	60	100	0.5	1U, 21"D
LPL	LPL600-120-60	600W	120	60	0.72	1U, 21"D
LPL	LPL600-400-30	600W	400	30	1.8	1U, 21"D
LPL	LPL600-600-20	600W	600	20	5	1U, 21"D
LPL	LPL800-60-100	800W	60	100	0.5	1U, 21"D
LPL	LPL800-120-80	800W	120	80	0.96	1U, 21"D
LPL	LPL800-400-40	800W	400	40	2.4	1U, 21"D
LPL	LPL800-600-30	800W	600	30	7.5	1U, 21"D

Voltage Range: 10Vdc ~ 800Vdc Rating  
Current Range: 1Adc ~ 100Adc Rating  
Power Range: 60W ~ 800W Rating  
Current-tailored Ranges Available

## Key Features and Benefits:

- **Broadest Model Selection:** 150W, 300W, 600W, 800W Models: 60V, 120V, 400V, 600V, 800V
- **Save Rack Space:** All LPL Models are 1U high & "Zero" Stackable
- **Maximize ROI:** In-rack Closed-case Calibration
- **Ultra-low Compliance Voltage:** Ultra-low Voltage Operation
- **Reliable:** Individual FET Protection to Isolate Power Stage Failures
- **Maximized Uptime:** Redundant Over-temperature and Over-power Protection
- **Fast Response:** 25us Independently Programmable Rise/Fall Time
- **Quiet:** Fan Speed Control for Reduced Acoustic Noise Under Light Load Conditions.
- **Flexible Test Platform:** Five Modes of Operation: CC, CR, CV, CP and Pulse Load Shaping
- **Intuitive Front Panel Control:** User-friendly Function Keys, Full Keypad & Digital Encoder
- **Integrated DMM:** 14-bit 5-digit Voltage and Current Measurement Display
- **Two Loads in One:** Ultra-low Current Range Option for Optimized Accuracy
- **More Ranges:** 3 Full Scale Ranges (100%, 50% & 10%)
- **More Protections:** Anti-oscillation & Programmable Protections: OV, UV, OC, UC, OP, & UP
- **More Interfaces:** Co-resident GPIB/RS-232 & Field-enabled Ethernet/USB Option Available
- **ATE Ready:** Standard LabWindows and LabVIEW Drivers and SCPI Command Set
- **Bench-top Test Automation Ready:** Four Step Profiles; 32 Step Points for Each Profile
- **Fuel Cell Application Ready:**
  - Impedance Measurement via Frequency Response Analyzer (FRA)
  - Current Interruption Mode for Fuel Cell Testing
  - Ultra-low Compliance Voltage to Operate at High Current Down to 0.1Vdc
  - Virtual Panel provides Polarization Curve Sweep and Voltage/Current Cycling Capability
- **0 ~ 10Vdc PLC or DAQ Control Ready:**
  - 0~10Vdc External Analog Programming
  - External On/Off Control
  - External Mode Selection Available
  - Front Panel Key Lockout Prevents Unwanted Key Entry
- **More System Integration Features & Options:**
  - Standard Remote Inhibit (RI) for Interlock Capability
  - Standard Dry Contact Fault for Redundant System Protection
  - Isolated Analog Control/Monitor Option
  - External dc Contactor
  - Reverse Polarity/Isolation Relay Option
- **Battery Testing:** "C" Operand for Battery Testing.
- **Ideal for Unique Test Applications:** Custom-tailored Ratings & Features Available



## Dimensions

### LPL SPECIFICATIONS

CV MODE SPECIFICATIONS		CC MODE SPECIFICATIONS	
CVL RANGE	0 ~ 10% of Vmax	CCL RANGE	0 ~ 10% of Imax
CVM RANGE	0 ~ 50% of Vmax	CCM RANGE	0 ~ 50% of Imax
CVH RANGE	0 ~ 100% of Vmax	CCH RANGE	0 ~ 100% of Imax
ACCURACY	0.05% of Value ± 0.1% of Rating	ACCURACY	0.05% of Value ± 0.1% of Rating
RESOLUTION	1/16000 of Rated Voltage	RESOLUTION	1/16000 of Rated Voltage
TRANSIENT TIME (SLOW)	0.500~511.9 (ms)	TRANSIENT TIME (SLOW)	0.500~511.9 (ms)
TRANSIENT TIME (FAST)	0.500~51.9 (ms)	TRANSIENT TIME (FAST)	0.050~51.9 (ms)
CR and CP MODE SPECIFICATIONS		PROTECTION	
Please reference website datasheet for details		OVER POWER PROTECTION	110% * Pmax
		OVER VOLTAGE PROTECTION	105% * Vmax
		OVER CURRENT PROTECTION	110% * Imax
		OVER TEMPERATURE PROTECTION	90°C ± 5°C
		REVERSE MAXIMUM CURRENT	110% of Imax
		REMOTE INHIBIT (RI)	Short
		FAULT INDICATOR	SPDT Relay
		Other Programmable Protections: OPP, OVP, OCP, UVL & Anti-Oscillation	
GENERAL SPECIFICATIONS		DIELECTRIC STRENGTH	
REMOTE INTERFACES	RS-232, GPIB & USB/ETHERNET	PRIMARY CIRCUIT TO CHASSIS	1500Vac for 1 Minute
ANALOG PROGRAMMING	0 ~ 10Vdc	PRIMARY CIRCUIT TO LOAD TERMINAL	1500Vac for 1 Minute
ACCURACY	Mode Accuracy ± 0.1% of Rating	LOAD TERMINAL TO CHASSIS	1500Vdc for 1 Minute
VMON ACCURACY	0.10% of RDG ± 0.1% of Rating		
IMON ACCURACY	0.10% of RDG ± 0.1% of Rating		
FREQUENCY RANGE	0.1Hz ~ 10kHz		
ACCURACY	0.10%		
AC INPUT	95~240Vac / 48 ~ 62Hz		
OPERATING TEMPERATURE	5°C ~ 40°C		
DIMENSIONS	21" (L) x 17" (W) x 1.75" (H)		