Programmable Ballast Load Model 804BL

- **Programmable Ballast Load**
  Simulates wide range of lamps for ballast test and design applications
- **Modular and Robust Design**
  Accommodates one to four lamp load modules per chassis
- **Magnetic, Electronic and HID Ballasts**
  Compatible with all ballast types
- **Programmable Power Factor**
  Simulate various lamp power factors
- **End of Life Test Mode**
  Simulate typical end of lamp life conditions
- **Compatible with Ballast Test System**
  Integrates with California Instruments' BTS system for a complete production test solution
- **Switchable Filament Resistance**
  Supports both rapid start and instant start ballast types
- **Remote Control**
  IEEE-488 and RS232C Interface for automated test applications

Ballast Load

The 804BL Ballast Load is designed to support testing of both magnetic and electronic lighting ballasts in high volume, high speed production environments. This modular, programmable load accurately simulates different fluorescent or HID lamp types to a ballast under test. It is an ideal companion product to the BTS Series of Ballast test systems. (Refer to BTS product data sheet for information on fully automated ballast test systems). Each 804BL mainframe can accommodate up to four lamp load modules for testing one, two or four lamp ballast types. All lamp load parameters can be controlled from the front panel for bench use or over the standard RS232C and IEEE-488 remote control bus for ATE applications. Multiple 804BL loads can be combined to create higher power load configurations if needed

Eliminates Lamp Disposal Fees

Environmental regulations can mean high lamp disposal fees that quickly add up. This raises the actual cost of using lamps as loads in high volume ballast test applications. The use of the 804BL is not only more economical, as it eliminates the need to use and dispose of actual lamps, it is also environmentally more responsible.

Furthermore, the programmability of the 804BL provides support for a wide range of different lamp types without the need to replace or switch between different resistive or actual lamp loads. This represents significant cost and time savings over traditional fixed resistor load banks or actual lamps. The 804BL provides unprecedented flexibility for a modern ballast production line.

Wide Frequency Range

With a wide frequency range from DC to 100 KHz, the 804BL is capable of testing modern electronic ballasts of all types. A carefully designed low inductive and capacitive design ensures optimal performance at both line frequencies for magnetic ballasts and high frequencies for electronic and HID ballasts.

High Reliability

The 804BL was designed to stand up to harsh conditions occurring in a typical ballast manufacturing environment. Full optical isolation of the external interfaces from the load modules and the ability to handle start-up voltages to 4000 V, all contribute to a robust load that can stand up to real-world use. Rear panel access to individual load modules supports easy maintenance in production settings.

California Instruments

804BL - Unique Features

Multiple Modules

A single 804BL mainframe can accommodate up to four independent lamp load modules. Each module can be selected from the front panel or over the bus. A high speed serial interface is provided on the rear panel to connect additional 804BL units, if needed, using a master/slave configuration.

Operations programmed on one or more modules can be time synchronized to occur simultaneously using a unique trigger mode. This high speed trigger mode ensures commands sent to multiple modules are executed at the same moment in time.

Filament Resistors

Different filament resistor types can be selected under software control to simulate different lamp types. Both instant start and rapid start ballast types can be tested using the available filament resistor selections offered by the 804BL.

Power Factor

The 804BL supports four discrete power factor settings for each load module. Available settings are high, medium, low and off. Highest power factor setting is equivalent to a lamp power factor of 0.9. The impact of lamp power factor on ballast performance can be evaluated using this programmable feature.

End Of Life Mode

The 804BL has special provisions for end of life mode (EOL) testing of ballasts. Using the EOL mode, the effect of lamp aging and the ability of the ballast under test to detect this condition can be verified. The EOL mode is selectable from both the front panel and the remote control interface.

Dimming Ballasts

The 804BL supports testing of dimming ballast types through its high impedance range of up to 3200 ohms.

High Frequency Ballasts

The frequency range of the 804BL load module spans DC to 100 KHz. This allows each load module to be used for magnetic as well as electronic ballast type testing. For service return and production rework stations, the same load can be used to handle a wide range of ballast test tasks.

HID Ballasts

The 804BL was designed to handle the high start-up voltage and frequency output found in typical HID ballasts and may be used to test most HID ballast types.

804BL - Manufacturing Friendly

Ease of Connection

Each 804BL load module has an easily accessible rear-panel screw terminal connector for making connections to the ballast or ballast test fixture. The connector can be accessed by pulling each module out from the rear of the unit. There is never a reason to remove the 804BL chassis from an instrument rack. The connections are clearly marked to minimize the risk of mis-wiring. All wires are clamped down using a strain relief to reduce the probability of loose or broken connections. All connections for test, AC power and interfacing to the PC are made at the rear panel.

Module Replacement

Should the need to replace a module on the production line ever arise, the module can be pulled out of the 804BL chassis from the rear by loosening two thumbscrews and pulling the module out of its card-guides. This modular construction supports maximum test system up times.

Proven Reliability

The basic design underlying the 804BL ballast load has been in use in high volume ballast production environments for several years and has proven to be very reliable. Optical isolation of all power supplies and interfaces on the 804BL and load modules ensure error-free operation, even in the presence of high frequency switching noise. This ensures a high degree of production line uptime, especially in combination with the California Instruments Ballast Test System.

Specifications

Specifications shown apply to a 804BL chassis with a single ballast load module unless otherwise noted. Up to four modules may be installed in a single chassis. All specifications are valid for an ambient temperature of 23° C ± 5° C and apply after a warm-up period of 15 minutes.

Load Module

Resistance

Range:	40 - 3200 Ohms
Accuracy:	± 0.5 % of setting ± 1 Ohm
Resolution:	1 Ohm typical, 2 Ohm max.

Power Dissipation

Continuous:	100 Watts (R > 220 Ohms)
Peak:	200 Watts

Input Voltage

Maximum:	1500 Vpp, 1000 VRMS into open circuit 3500 VRMS into programmed resistance

Load Current

Maximum:	800 mA RMS
Fused:	2 A RMS

Frequency

Range:	DC - 100 kHz

Power Factor

Range:	0.90, 0.92, 0.96, 1.00
Accuracy:	± 0.2
Selection:	High, Medium, Low, Off

Output Control

Relay on/off, dual pole

Parasitics

Capacitance:	< 30 pF
Inductance:	< 50 uH

Coupling

DC Coupled

Filament Resistors

Range:	2 sets
Power:	5 Watt max.
Control:	Relay controlled open or short
Coupling:	DC Coupled

End Of Life Test

Modes:	EOL or Bypass

Mainframe

Chassis

No. of Slots:	Four Load modules slide in from rear on card guides and attach with two thumbscrews
Connections:	Rear terminal strips
Isolation:	Load modules are optically isolated from mainframe and from each other

Front panel

Keyboard:	Function keys Numeric keypad Shuttle control
Display:	8 lines, 40 characters Backlit LCD
Storage:	Non-volatile memory for 8 setups

AC Line Input

Voltage:	115 V or 230 V selectable
Current:	2 A Max., Fused
Frequency:	47 - 66 Hz
Line cord:	IEC input

Remote Control

IEEE-488.2:

Modes:	GPIB Talker, Listener
Subset:	AH1, C0, DC1, DT1, L3, PP0, RL2, SH1, SR1, T6
Language:	SCPI

RS232C:

Baud rates:	9600, 19200, 38400
Handshake:	RTS/CTS
Format:	8,n,1
Language:	SCPI

Mechanical

Dimensions: (h x w x d)	7.00” x 17.70” x 19.18” 178 mm x 450 mm x 502 mm
Weight:	28 lbs / 12.8 Kg Net 40 lbs / 18.2 Kg shipping (With four load modules installed)
Temperature:	0 - 40° C Operating -20 - 70° C Storage
Humidity:	90 % Non-condensing
Cooling:	Forced air, front intake, rear exhaust
Fan noise:	60 dBA at 1 meter

804BL Chassis Front Panel View

804BL Chassis Rear Panel View

Ordering Information

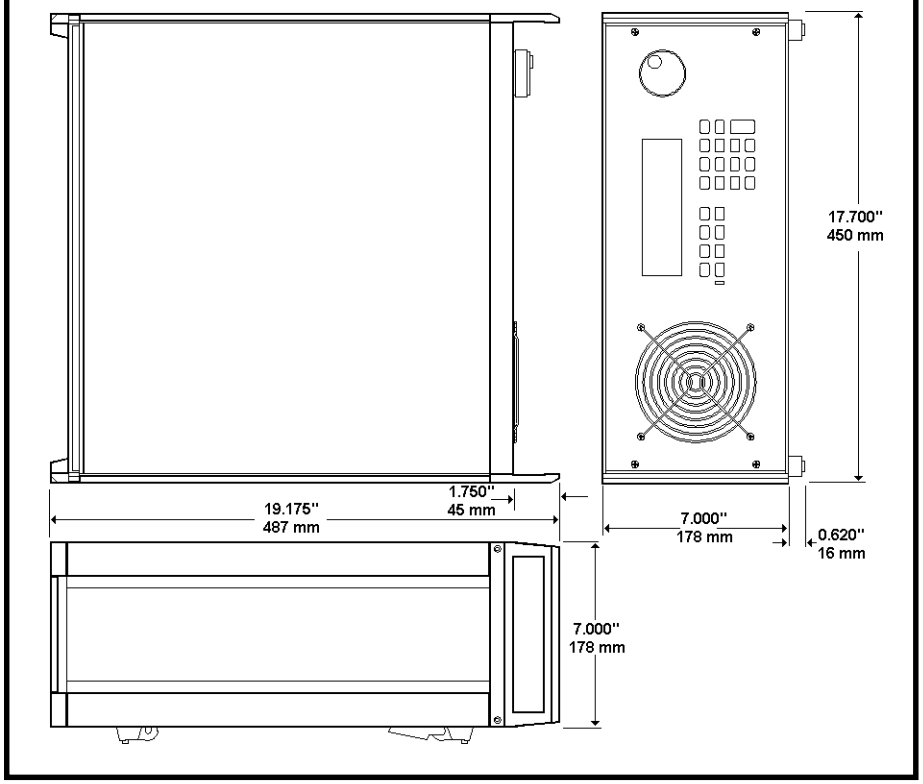
The 804BL chassis can accommodate from one to four load modules. At least one load module is required for a functional unit.

Model	Description
804BL-001	Ballast load with one load module
804BL-002	Ballast load with two load modules
804BL-003	Ballast load with three load modules
804BL-004	Ballast load with four load modules
804BL	Ballast load, chassis only
4601-700-1	Load module, 80 Watts

Options:

-RMK	Rack mount handle kit. Note: A tray is required to support 804BL chassis in an instrument rack.

Dimension drawing 804BL



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