

# DATA SHEET

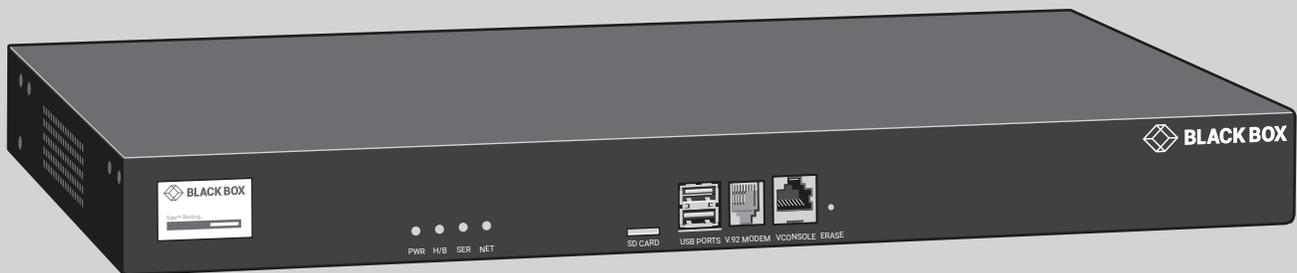
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LES1500, LES1600, LES1700-R2 SERIES

# LES SERIES CONSOLE SERVERS

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# OVERVIEW

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## LES1500, LES1600, LES1700-R2 SERIES CONSOLE SERVERS DATA SHEET

### INTRODUCTION

The console server provides out-of-band access to routers, switches, PDUs, firewalls, and other serial consoles. It gives you control and visibility of your network and its physical environment for reliable 24/7 uptime. The console server enables serial console-port connectivity and supports environmental monitoring, power management and monitoring, plus remote site storage of off-line logs.

Out-of-band management allows you to configure and troubleshoot your network that is independent of your data network. It enables remote setup, ongoing maintenance and disaster recover of mission-critical IT devices, even when the network is down.

The console server includes a status monitoring dashboard, pro-active alerts, vendor-neutral power management and simple secure access to devices.

For available models, see the chart on the next page.

### LES1500 SERIES FEATURES

- SERVER PROVIDES AUDIT TRAIL LOGGING TO EMBEDDED 4-GB LOCAL STORAGE OR A REMOTE LOG SERVER.
- FEATURES, SIMPLE, STRAIGHT-THROUGH CABLE TO CISCO-STYLE SERIAL CONSOLES.
- GET AUTOMATED RESPONSES TO REDUCE TIME-CONSUMING ON-SITE VISITS.
- INCLUDES USB 2.0 PORTS FOR MANAGED DEVICE OS FILE TRANSFERS.
- CUSTOMIZABLE FIREWALL SECURITY WITH IP FILTERING AND PER-PORT ACCESS LIST.
- OFFERS EXTENSIVE MONITORING, ALERT, AND POWER EVENT-NOTIFICATION FEATURES.
- GIVES YOU THE ABILITY TO ISOLATE DEVICES FROM OTHER EQUIPMENT.
- PROVIDES UNIFIED POWER MANAGEMENT OF PDU AND UPS EQUIPMENT.
- EMBEDDED LINUX® OPERATING SYSTEM.

### LES1600 SERIES FEATURES

- GET HIGHLY AFFORDABLE, SECURE, REMOTE NETWORK MANAGEMENT OF FOUR OR EIGHT DEVICES.
- LES1604A-R-R2 PROVIDES OPTIONAL REDUNDANT BACKUP PATHS VIA A 4G LTE CELLULAR MODEM.
- DUAL GIGABIT ETHERNET PORTS WITH SEAMLESS AUTO-FAILOVER PROVIDE BUILT-IN REDUNDANCY.
- IDEAL FOR BUSINESS WITH REMOTE BRANCHES AND LIMITED IT STAFF, AS WELL AS CO-LOCATION DATA CENTERS.
- FEDERAL INFORMATION PROCESSING STANDARD (FIPS) 140-2 VALIDATED MODULE FOR ENHANCED SECURITY.
- FEATURES SIMPLE, STRAIGHT-THROUGH CABLE TO CISCO-STYLE SERIAL CONSOLES.
- INCLUDES FOUR USB 2.0 PORTS FOR MANAGED DEVICE OS TRANSFERS.
- BUILT-IN DIGITAL I/O AND HIGH VOLTAGE I/O.
- MAINTAIN NETWORK CONNECTIVITY DURING FAILURES WITH IP PASSTHROUGH.

### LES1700-R2 SERIES FEATURES

- HAS DUAL GIGABIT ETHERNET PORTS WITH BUILT-IN FIBER SFP PORTS FOR CONNECTIONS TO PRIMARY AND SECONDARY NETWORKS.
- A POTS MODEM GIVE YOU ALTERNATIVE CONNECTION PATHS.
- DUAL POWER SUPPLIES PROVIDE UNINTERRUPTED AVAILABILITY AND TRANSPARENT AUTOMATIC FAILOVER.
- SUPPORTS DIRECT USB 3.0 CONNECTIONS TO USB CONSOLE PORTS.



# COMPARISON CHARTS

## LES1500, LES1600, LES1700-R2 SERIES CONSOLE SERVERS DATA SHEET

TABLE 1. AVAILABLE MODELS COMPARISON CHART

PRODUCT CODE	SERIAL RS-232	USB 2.0	USB 3.0	NETWORK 10/100/1000	FLASH	RAM	INTERNAL MODEM	POWER
LES1516A	16	2	—	2	32 MB	4 GB	—	Single AC
LES1532A	32	2	—	2	32 MB	4 GB	—	Single AC
LES1548A	48	2	—	2	32 MB	4 GB	—	Single AC
LES1604A	4	4	—	2	256/32 MB	4 GB	—	Single AC
LES1604A-R-R2	4	4	—	2	256/32 MB	4 GB	cellular 4G	Single AC
LES1608A	8	4	—	2	256/32 MB	4 GB	—	Single AC
LES1708A-R2	8	—	2	2	256/64 MB	16 GB	POTS	Dual AC
LES1716A-R2	16	—	2	2	256/64 MB	16 GB	POTS	Dual AC
LES1732A-R2	32	—	2	2	256/64 MB	16 GB	POTS	Dual AC
LES1748A-R2	48	—	2	2	256/64 MB	16 GB	POTS	Dual AC

TABLE 2. SOFTWARE FEATURES SUPPORTED PER MODEL SERIES

SERIES	DHCP	DDNS	MGT LAN	CELL OR WI-FI	OOB	AUTO-RESPONSE	FLASH (FTP & TFTP)	FTP S	IPSEC, PPTP AND OPENVPN
LES1600	yes	yes	yes	yes <sup>1</sup>	yes	yes	yes	yes	yes
LES1700-R2	yes	yes	yes	no	yes	yes	yes	yes	yes
LES1516/32/48	yes	yes	yes	no	yes	yes	yes	yes	yes

1. Selected models have 3G/4G cellular.



# SPECIFICATIONS

## LES1500 SERIES CONSOLE SERVERS

### SPECIFICATIONS: LES1500 SERIES CONSOLE SERVERS

Console Specifications	
Console Ports	LES1516A: (16) RJ-45 RS-232 serial ports with Cisco pinouts; LES1532A: (32) RJ-45 RS-232 serial ports with Cisco pinouts; LES1548A: (48) RJ-45 RS-232 serial ports with Cisco pinouts
Interface	
Ethernet Ports	(2) 10-/100-/1000-Mbps Ethernet RJ-45 ports
Console Port	(1) DB9 RS-232 console port
Serial Ports	Software-selectable, 50 to 230,400 bps
USB	(2) USB 2.0 ports for increased storage
Remote Access	Dual Ethernet, aggregation and redundancy, remote access automatic network failover, easy browser UI IPv6
Console Management	Built-in web terminal, SSH direct to consoles, optional console keystroke logging, alert on cable disconnects, text pattern match and more, inline power control, multiple concurrent sessions
Power Requirements	
Power Supply	LES1516A, LES1532A, LES1548A: Single AC power supply
Power Consumption	Less than 30 W
Physical	
Dimensions	1.75"H x 17"W x 6.9"D (4.5 x 43.2 x 4.5 cm)
Weight	9 lb. (4 kg)
Form Factor	1 RU
Memory and CPU	
CPU	Marvell 88F6W11
Memory	32 MB Flash
Internal Storage	4 GB
Environmental	
Operating Temperature	41 to 122° F (5 to 40° C)
Storage Temperature	-20 to +140° F (-30 to +60° C)
Humidity	5 to 90%
Security, Encryption and Authentication	SSH; FIPS-140-2 compliant; Open SSL Module; Strong ciphers—AES encryption; IPsec; AAA, TACACS+, RADIUS, Active Directory, OpenLDAP, Kerberos, with local fallback; Two factor authentication via remote AAA; Configurable stateful firewall; OpenVPN



# OVERVIEW

## LES1500 SERIES CONSOLE SERVERS

### SPECIFICATIONS (CONTINUED): LES1500 SERIES CONSOLE SERVERS

Automation and Scalability	ZTP, Virtual Central Management System (VCMS); RESTful API, programmable and extensible; Auto-Response, SNMP, LLDP, NTP
<b>Certifications</b>	
Emissions	FCC Part 15 Subpart B Class A; ICES-003 Issue 4 February 2004; AS/NZS CISPR 22: 2004 Class A; EN 55022 Emissions Class A (2009) A1 (2010); EN 61000-3-2 Harmonics Current Emissions (2014); EN 61000-3-3 Voltage Fluctuation and Flicker (2013)
Immunity	EN 55024 ITE Immunity (2010); IEC 61000-4-2 (2008); IEC 61000-4-3 (2006) A1 (2007) A2 (2010); IEC 61000-4-4 (2012); IEC 61000-4-5 (2014); IEC 61000-4-6 (2013); IEC 61000-4-8 (2009); IEC 61000-4-11 (2004)
Other Agency Approvals	CE, UL 1950, TUV, C-Tick, RoHS compliant, Security features to support NERC CIP standards, FIPS 140-2 validated module Certificate #2473, CCC
MTBF	150,000 hours

## WHAT'S INCLUDED

### LES1500 SERIES CONSOLE SERVERS

- (1) Console Server
- (2) CAT5 UTP cables
- (1) DB9F to RJ-45 straight-through adapter
- (1) DB9F to RJ-45 crossover adapter
- (1) IEC AC power cord
- (1) Rackmount Kit: (2) Brackets, (4) 10/32 Screws, (6) 6/32 Screws, (4) Cage Nuts

## SAMPLE PHOTOS: LES1548A

FRONT VIEW



LES1548A

BACK VIEW



LES1548A

NOTE: LES1548A has (48) RJ-45 ports. LES1516A and LES1532A models look similar, but have (16) or (32) RJ-45 ports, respectively.

# SPECIFICATIONS

## LES1600 SERIES CONSOLE SERVERS

### SPECIFICATIONS: LES1600 CONSOLE SERVERS

Console Specifications	
Console Ports	LES1604A, LES1604A-R-R2: (4) RJ-45 RS-232 Cisco straight pinout console ports; LES1608A: (8) RJ-45 RS-232 Cisco straight pinout console ports
Interface	
Ethernet Ports	(2) 10-/100-/1000-Mbps Ethernet RJ-45 ports
Serial Ports	Cisco straight 50 to 230,400 bps
USB Ports	(4) USB 2.0 console ports
Remote Access	All LES1600 models: Dual Ethernet, aggregation and redundancy, Automatic Network Failover, Easy browser UI, IPv6; LES1604A-R-R2: 4G Cellular
I/O Ports	(2) TTL level digital I/O ports (DIO), 5 VDC max. @ 20 mA (supports external water/smoke/motion dry contact sensors); (2) high-voltage digital outputs (HVDO), 5–30 VDC @100 mA (drives relays, alarms, etc.)
Console Management	Built-in web terminal, SSH direct to consoles, optional console keystroke logging, alert on cable disconnects, inline power control, multiple concurrent sessions
Power Requirements	
Power Adapter	110–240 VAC to 12 VDC external power adapter
Power Consumption	Less than 11.5 W
Physical	
Dimensions	5.1"H x 4.8"W x 1.4"D (13 x 12 x 3.5 cm)
Form Factor	Compact
Memory and CPU	
CPU	800 MHz Armada 370 ARMv7 SoC (Marvell 88F6W11)
Memory	256 MB DDR3 SDRAM; 32 MB Embedded NOR Flash
Internal Storage	4 GB NAND Flash
Environmental	
Operating Temperature	-13 to +140° F (-25 to +60° C)
Storage Temperature	-40 to +167° F (-40 to +75° C)
Humidity	5 to 90%
Security, Encryption and Authentication	SSH; FIPS-140-2 compliant Open SSL Module; Strong ciphers—AES encryption; Cisco-compatible IPsec; AAA—TACACS+, RADIUS, Active Directory/OpenLDAP, Kerberos, with local fallback; Two factor authentication via remote AAA; Configurable stateful firewall; OpenVPN



# SPECIFICATIONS

## LES1600 SERIES CONSOLE SERVERS

### SPECIFICATIONS: LES1600 CONSOLE SERVERS (CONTINUED)

Automation and Scalability	ZTP, Virtual Central Management System (VCMS); RESTful API, programmable and extensible; Auto-Response, SNMP, LLDP, NTP
<b>Certifications</b>	
Emissions	FCC Part 15 Subpart B:2015; EN55022:2010; CISPR 22:2008; ICES-003 Issue 5 (2014); AS/NZS CISPR 22: 2009+ A1:2010; EN 61000-3-2:2006/A2:2009; EN 61000-3-3:2008
Immunity	EN 55024:2010 CISPR 24:2010; EN 61000-4-2:2009; EN 61000-4-3:2006+A2:2010; EN 61000-4-4:2004+A1:2010; EN 61000-4-5:2006; EN 61000-4-6:2009; EN 61000-4-8:2010; EN 61000-4-11:2004
Other Agency Approvals	CE, UL 1950, TUV, C-Tick, RoHS compliant, Security features to support NERC CIP standards, FIPS 140-2 validated module Certificate #2473, CCC

## WHAT'S INCLUDED

- (1) LES1604A, LES1604A-R-R2, or LES1608A Console Server
- (1) DB9F-to-RJ-45 crossover serial adapter
- (1) 12-VDC switching DC power supply with US, UK, EU, AU adapters
- (1) Rackmount Kit: (2) Brackets, (4) 10/32 Screws, (6) 6/32 Screws, (4) Cage Nuts
- (4) Adhesive-backed rubber feet
- (1) Digital I/O converter (terminal block)
- (1) SIM holder
- (2) Antennas

## SAMPLE PHOTOS: LES1604A

FRONT VIEW



LES1604A

BACK VIEW



LES1604A

NOTE: LES1604A and LES1604A-R-R2 each have (4) RJ-45 ports. LES1608A looks similar, but has (8) RJ-45 ports.

# SPECIFICATIONS

## LES1700-R2 SERIES CONSOLE SERVERS

### SPECIFICATIONS: LES1700-R2 SERIES CONSOLE SERVERS

Console Specifications	
Console Ports	LES1708A-R2: (8) RJ-45 RS-232 software-selectable console ports; LES1716A-R2: (16) RJ-45 RS-232 software-selectable console ports; LES1732A-R2: (32) RJ-45 RS-232 software-selectable console ports; LES1748A-R2: (48) RJ-45 RS-232 software-selectable console ports
Interface	
Ethernet Ports	(2) 10-/100-/1000-Mbps Ethernet/SFP fiber ports with 1500 VAC isolation and ESD protection
Console Port	(1) RJ-45 RS-232 console port
PSTN Modem	(1) internal V.92 modem with RJ-11 socket
Serial Ports	Software-selectable, 50 to 230,400 bps
USB	(2) USB 3.0 ports for increased storage
Remote Access	Integrated V.92 PSTN dial-in, dual Ethernet, aggregation and redundancy, remote access automatic network failover, easy browser UI IPv6
Console Management	Built-in web terminal, SSH direct to consoles, optional console keystroke logging, alert on cable disconnects, text pattern match and more, inline power control, multiple concurrent sessions
Power Requirements	
Dual AC	Dual socket, universal 100–240 VAC
Power Consumption	Less than 30 W
Physical	
Dimensions	1.75"H x 17"W x 10"D (4.5 x 44 x 25.4 cm)
Weight	10 lb. (4.5 kg)
Form Factor	1 RU
Memory and CPU	
CPU	1 GHz ARM SoC (Marvell 88F6283)
Memory	256 MB DDR2 SDRAM; 64 MB Embedded NOR Flash
Internal Storage	16 GB
Environmental	
Operating Temperature	41 to 122° F (5 to 40° C)
Storage Temperature	-20 to +140° F (-30 to +60° C)
Humidity	5 to 90%
Environmental Monitoring	Serial EMD5000 to support physical, smoke, water leak and vibration sensors
Security, Encryption and Authentication	SSH; FIPS-140-2 compliant Open SSL Module; Strong ciphers—AES encryption; Cisco-compatible IPsec; AAA—TACACS+, RADIUS, Active Directory/OpenLDAP, Kerberos, with local fallback; Two factor authentication via remote AAA; Configurable stateful firewall; OpenVPN



# SPECIFICATIONS

## LES1700-R2 SERIES CONSOLE SERVERS

### SPECIFICATIONS (CONTINUED): LES1700-R2 SERIES CONSOLE SERVERS

Automation and Scalability	ZTP, Virtual Central Management System (VCMS); RESTful API, programmable and extensible; Auto-Response, SNMP, LLDP, NTP
<b>Certifications</b>	
Emissions	FCC Part 15 Subpart B Class A; ICES-003 Issue 4 February 2004; AS/NZS CISPR 22: 2004 Class A; EN 55022 Emissions Class A (2009) A1 (2010); EN 61000-3-2 Harmonics Current Emissions (2014); EN 61000-3-3 Voltage Fluctuation and Flicker (2013)
Immunity	EN 55024 ITE Immunity (2010); IEC 61000-4-2 (2008); IEC 61000-4-3 (2006) A1 (2007) A2 (2010); IEC 61000-4-4 (2012); IEC 61000-4-5 (2014); IEC 61000-4-6 (2013); IEC 61000-4-8 (2009); IEC 61000-4-11 (2004)
Other Agency Approvals	CE, UL 1950, TUV, C-Tick, RoHS compliant, Security features to support NERC CIP standards, FIPS 140-2 validated module Certificate #2473, CCC
MTBF	150,000 hours

## WHAT'S INCLUDED

- (1) LES1708A-R2, LES1716A-R2, LES1732A-R2 or LES1748A-R2 Console Server
- (1) Rackmount Kit: (2) Brackets, (4) 10/32 Screws, (6) 6/32 Screws, (4) Cage Nuts
- (2) Power cords
- (2) 6-ft. (1.8-m) CAT5 patch cables
- (4) DB9F to RJ-45 adapters
- (2) DB9M to RJ-45 adapters
- (2) Loopback connectors RJ-45

## SAMPLE PHOTOS: LES1716A-R2

FRONT VIEW



LES1716A-R2

BACK VIEW



LES1716A-R2

NOTE: LES1716A-R2 has (16) RJ-45 ports. LES1708A-R2, LES1632A-R2, and LES1648A-R2 look similar, but have (8), (32), and (48) RJ-45 ports, respectively.

