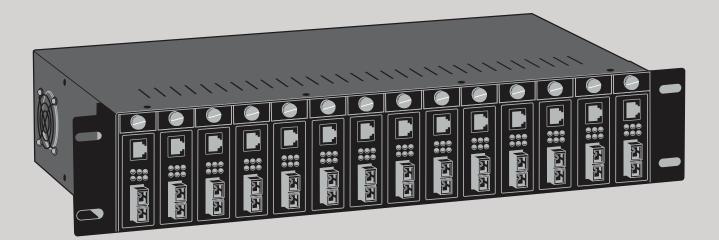
# **DATA SHEET**

LHC210A, LHC211A, LHC212A, LGC210A, LGC211A, LGC212A, LHGC-RACK, LGC215A, LGC220A

# MEDIA CONVERTERS AND CHASSIS

24/7 TECHNICAL SUPPORT AT 877.877.2269 OR VISIT BLACKBOX.COM





# **OVERVIEW**

### MEDIA CONVERTERS DATA SHEET

### INTRODUCTION

Black Box Media Converters enable you to connect twisted-pair networks or devices to fiber optic network links. This allows you to transfer data over secure, high-speed fiber optic cable.

Choose from three groups of Black Box Media Converters:

- FAST ETHERNET AND GIGABIT ETHERNET MEDIA CONVERTERS WITH FIXED AND SFP OPTICS, STANDALONE AND CHASSIS
- GIGABIT ETHERNET POE+ MEDIA CONVERTER
- 10 GIGABIT ETHERNET MEDIA CONVERTER

#### **FEATURES**

- FAST ETHERNET MEDIA CONVERTERS SUPPORT UP TO 100 MBPS
- GIGABIT ETHERNET MEDIA CONVERTERS SUPPORT UP TO 1000 MBPS
- CHASSIS ENABLES YOU TO SECURELY HOUSE UP TO 14 FAST ETHERNET OR GIGABIT ETHERNET MEDIA CONVERTERS IN TWO RACK UNITS (3.50") OF 19" RACK SPACE
- POE MEDIA CONVERTER PROVIDES DATA AND POWER OVER THE RJ-45 INTERFACE
- 10G MEDIA CONVERTERS ALLOW YOU TO BRIDGE TWO HIGH SPEED 10G NETWORKS TOGETHER OR ATTACH A HIGH SPEED 10G DEVICE TO A 10G NETWORK

# **COMPARISON CHART**

SPECIFICATION COMPARISON CHART					
PRODUCT CODE	STANDALONE	RACKMOUNTABLE	SPEED	MEDIA/CONNECTOR	POE
LHC210A	YES	YES	10/100 MBPS	TP, FIBER SFP	NO
LHC211A	YES	YES	10/100 MBPS	TP, FIBER MM 1310 NM SC	NO
LHC212A	YES	YES	10/100 MBPS	TP, FIBER SM 1310 NM SC	NO
LGC210A	YES	YES	10/100/1000 MBPS	TP, FIBER SFP	NO
LGC211A	YES	YES	10/100/1000 MBPS	TP, FIBER MM 850 NM SC	NO
LGC212A	YES	YES	10/100/1000 MBPS	TP, FIBER SM 1310 NM SC	NO
LGC215A	YES	NO	10/100/1000 MBPS	TP, FIBER SFP	YES
LGC220A	YES	NO	10 GBPS	TP, FIBER SFP	NO
LHGC-RACK	NO	YES	N/A	N/A	NO



# LHC210A: 10/100BASE-TX TO 100BASE-FX MEDIA CONVERTER WITH ONE SFP SLOT



LHC210A



FRONT VIEW



BACK VIEW

APPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10/100BASE-TX to 100BASE-FX SFP
CONNECTORS	(1) RJ-45, (1) SFP cage
MEDIA SUPPORTED	CATx UTP/STP;
	Multimode fiber (50/125 μm, 62.5/125 μm);
	Single-mode fiber (8.3/125 μm, 9/125 μm, 10/125 μm)
DISTANCE	CATx: 328 ft. (100 m)
WAVELENGTH	Depends on SFP installed
FORWARDING RATE	10 Mbps: 14,880 pps,
	100 Mbps: 148,800 pps
FRAME SIZE	Up to 9016 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector;
	External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C);
	Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHGC-RACK
WHAT'S INCLUDED	(1) 10/100BASE-TX to 100BASE-FX Media Converter with One SFP Slot, (1) 5- VDC power adapter

COMPATIBLE SFPS		
PART NUMBER	DESCRIPTION	
LFP401	SFP - 155-Mbps, Extended Diagnostics, 850-nm Multimode Fiber, 2-km, LC	
LFP402	SFP - 155-Mbps, Extended Diagnostics, 1310-nm Multimode Fiber, 2-km, LC	
LFP403	SFP - 155-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 30-km, LC	
LFP404	SFP - 155-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 60-km, LC	

TOP VIEW

# LHC211A: 10/100BASE-TX TO 100BASE-FX FAST ETHERNET MEDIA CONVERTER, MULTIMODE





FRONT VIEW



**BACK VIEW** 

PPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10/100BASE-TX to 100BASE-FX, Multimode SC, 1310-nm, 2-km
CONNECTORS	(1) RJ-45, (1) pair of SC
MEDIA SUPPORTED	CATx UTP/STP; Multimode fiber (50/125 μm, 62.5/125 μm)
DISTANCE	CATx: 328 ft. (100 m); MM fiber: 1.2 mi. (2 km)
WAVELENGTH	1310 nm
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps
FRAME SIZE	Up to 9016 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHGC-RACK
WHAT'S INCLUDED	(1) 10/100BASE-TX to 100BASE-FX Fast Ethernet Media Converter, Multimode, (1) 5-VDC power adapter

# LHC212A: 10/100BASE-TX TO 100BASE-FX FAST ETHERNET MEDIA CONVERTER, SINGLE-MODE



### LHC212A



FRONT VIEW



**BACK VIEW** 

APPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10/100BASE-TX to 10/100BASE-FX, Singlemode SC, 1310-nm, 10-km
CONNECTORS	(1) RJ-45, (1) pair of SC
MEDIA SUPPORTED	CATx UTP/STP; Single-mode fiber (8.3/125 μm, 9/125 μm, 10/125 μm)
DISTANCE	CATx: 328 ft. (100 m); SM fiber: 6.2 mi. (10 km)
WAVELENGTH	1310 nm
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps
FRAME SIZE	Up to 9016 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHGC-RACK
WHAT'S INCLUDED	(1) 10/100BASE-TX to 100BASE-FX Fast Ethernet Media Converter, Single-mode, (1) 5-VDC power adapter

# LGC210A: 10/100/1000BASE-TX TO 1000BASE-FX MEDIA CONVERTER WITH ONE SFP SLOT

LGC210A





FRONT VIEW



**BACK VIEW** 

SPECIFICATIONS FOR LGC	210A
APPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10/100/1000BASE-TX to 1000BASE-X SFP
CONNECTORS	(1) RJ-45, (1) SFP cage
MEDIA SUPPORTED	CATx UTP/STP; Multimode fiber (50/125 μm, 62.5/125 μm); Single-mode fiber (8.3/125 μm, 9/125 μm, 10/125 μm)
DISTANCE	CATx: 328 ft. (100 m)
WAVELENGTH	Depends on SFP installed
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps, 1000 Mbps: 1,480,000 pps
FRAME SIZES	Up to 9216 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1 A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode, 802.3ab 1000BASE-T, 802.3z 1000BASE-X
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHGC-RACK
WHAT'S INCLUDED	(1) 10/100/1000BASE-TX to 1000BASE-FX Media Converter with One SFP Slot, (1) 5-VDC power adapter

COMPATIBLE SFPS		
PART NUMBER	DESCRIPTION	
LFP411	SFP - 1250-Mbps, Extended Diagnostics, 850-nm Multimode Fiber, 550-m, LC	
LFP412	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Multimode Fiber, 2-km, LC	
LFP413	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 10-km, LC	
LFP414	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 30-km, LC	
LFP418	SFP - 1250-Mbps, Extended Diagnostics, 1550-nm Single-Mode Fiber, 80-km, LC	
LFP420, LFP421 (USED IN PAIRS)	SFP - 1250-Mbps, Extended Diagnostics, 1550-nm TX, 1310-nm RX, Simplex, Single-Mode Fiber, 10-km, LC; SFP - 1250-Mbps, Extended Diagnostics, 1310-nm TX, 1550-nm RX, Simplex Single-Mode Fiber, 10-km, LC	
LFP416	SFP - 1250-Mbps, Extended Diagnostics, 10/100/1000BASE-T, SGMII Interface, RJ-45	

NOTE: LFP420, LFP421 are single-strand fiber SFPs, so they must be used in pairs.

NOTE: Use the LFP416 for a copper interface.



# LGC211A: 10/100/1000BASE-TX TO 1000BASE-FX GIGABIT ETHERNET MEDIA CONVERTER, MULTIMODE



#### LGC211A



FRONT VIEW



BACK VIEW

SPECIFICATIONS FOR LGC	ZITA
APPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - Multimode SC 1000-Mbps 850-nm 500-m to RJ45 10/100/1000-Mbp
CONNECTORS	(1) RJ-45; (1) pair of SC
MEDIA SUPPORTED	CATx UTP/STP; Multimode fiber (50/125 μm, 62.5/125 μm)
DISTANCE	CATx: 328 ft. (100 m), MM fiber: 1640 ft. (500 m)
WAVELENGTH	850 nm
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps, 1000 Mbps: 1,480,000 pps
FRAME SIZES	Up to 9216 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode, 802.3ab 1000BASE-T, 802.3z 1000BASE-X
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHCG-RACK
WHAT'S INCLUDED	(1) 10/100/1000BASE-TX to 1000BASE-FX Media Converter, Multimode, (1) 5-VDC power adapter

# LGC212A: 10/100/1000BASE-TX TO 1000BASE-FX GIGABIT ETHERNET MEDIA CONVERTER, SINGLE-MODE



LGC212A



FRONT VIEW



**BACK VIEW** 

SPECIFICATIONS FOR LGC	212A
APPROVALS	FCC Class B, CE, RoHS
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10/100/1000BASE-TX to 1000BASE-LX Singlemode SC, 1310-nm, 20-km
CONNECTORS	(1) RJ-45; (1) pair of SC
MEDIA SUPPORTED	CATx UTP/STP; Single-mode fiber (8.3/125 μm, 9/125 μm, 10/125 μm)
DISTANCE	CATx: 328 ft. (100 m), SM fiber: 12.4 mi. (20 km)
WAVELENGTH	1310 nm
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps, 1000 Mbps: 1,480,000 pps
FRAME SIZES	Up to 9216 bytes
POWER	Media converter: 5 VDC, 2.5 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 5 VDC, 1A with 4 plug clips for US, EU, UK, AU
STANDARDS	IEEE 802.3, IEEE 802.3U, 10/100BASE-TX, 100BASE-FX, IEEE 802.3x flow control for full-duplex mode, 802.3ab 1000BASE-T, 802.3z 1000BASE-X
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)
WEIGHT	0.7 lb. (0.3 kg)
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)
MOUNTING	Standalone or in LHCG-RACK
WHAT'S INCLUDED	(1) 10/100/1000BASE-TX to 1000BASE-FX Media Converter, Single-mode, (1) 5-VDC power adapter

# LHGC-RACK: MEDIA CONVERTER CHASSIS



LHGC-RACK



FRONT VIEW



**BACK VIEW** 

SPECIFICATIONS FOR LHGC-RACK		
NUMBER OF SLOTS	14	
COMPAIBLE MEDIA CONVERTERS	LHC210A, LHC211A, LHC212A, LGC210A, LGC211A, LGC212A	
MEDIA SUPPORTED	10/100/1000BASE-TX: CAT5 UTP/STP, max. 328 ft. (100 m); 1000BASE-FX	
CONNECTORS	Depends on media converters installed	
POWER	Dual Power supplies included: (1) LHGC-RACK-PS-L and (1) LHGC-RACK-PS-R; Input: 100-240 VAC, 50/60 Hz, 3.0 A; Output: 5 VDC, 12 A, 60 W; Connector: IEC320 C14 on each power supply; Circuit breaker for overvoltage or short circuit protection	
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +185° F (-20 to +85° C)	
RELATIVE HUMIDITY	5 to 95%, noncondensing	
DIMENSIONS	3.5" H (2U) x 19" W x 9.1" D (8.9 x 48.2 x 23.1 cm)	
WEIGHT	15.4 lb (7.0 kg)	
MOUNTING	Chassis comes with blanks and mounting hardware for 14 converters	
WHAT'S INCLUDED	(1) Media Converter Chassis (unpopulated), (2) 5-VDC power supplies, (14) blank panels, (14) rackmount brackets	

COMPATIBLE MEDIA CONVERTERS		
PART NUMBER	DESCRIPTION	
LHC210A	10/100BASE-TX to 100BASE-FX Media Converter with one SFP slot	
LHC211A	10/100BASE-TX to 100BASE-FX Fast Ethernet Media Converter, MM 1310 SC	
LHC212A	10/100BASE-TX to 100BASE-FX Fast Ethernet Media Converter, SM 1310 SC	
LGC210A	10/100/1000BASE-TX to 1000BASE-FX Media Converter with one SFP slot	
LGC211A	10/100/1000BASE-TX to 1000BASE-FX Gigabit Ethernet Media Converter, MM 850 SC	
LGC212A	10/100/1000BASE-TX to 1000BASE-FX Gigabit Ethernet Media Converter, SM 1310 SC	

 ${\tt NOTE: LGC215A \ and \ LGC220A \ Media \ Converters \ are \ not \ compatible \ with \ the \ LHGC-RACK \ Chassis.}$ 



### LGC215A: 1000BASE-X TO 10/100/1000BASE-T TO 1000BASE-X POE+ GBE MEDIA CONVERTER

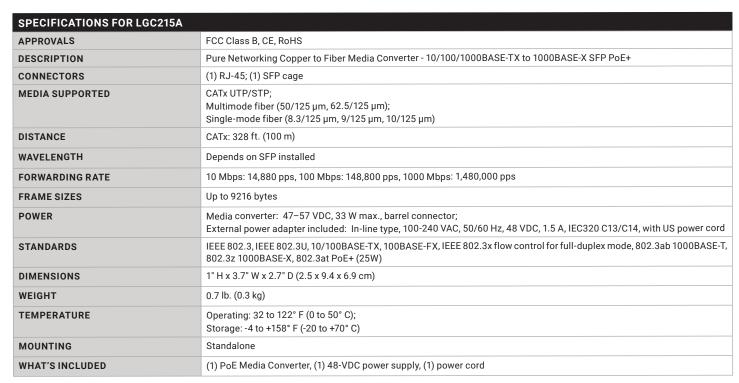




FRONT VIEW



**BACK VIEW** 



COMPATIBLE SFPS		
PART NUMBER	DESCRIPTION	
LFP411	SFP - 1250-Mbps, Extended Diagnostics, 850-nm Multimode Fiber, 550-m, LC	
LFP412	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Multimode Fiber, 2-km, LC	
LFP413	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 10-km, LC	
LFP414	SFP - 1250-Mbps, Extended Diagnostics, 1310-nm Single-Mode Fiber, 30-km, LC	
LFP418	SFP - 1250-Mbps, Extended Diagnostics, 1550-nm Single-Mode Fiber, 80-km, LC	
LFP420, LFP421 (USED IN PAIRS)	SFP - 1250-Mbps, Extended Diagnostics, 1550-nm TX, 1310-nm RX, Simplex, Single-Mode Fiber, 10-km, LC; SFP - 1250-Mbps, Extended Diagnostics, 1310-nm TX, 1550-nm RX, Simplex Single-Mode Fiber, 10-km, LC	
LFP416	SFP - 1250-Mbps, Extended Diagnostics, 10/100/1000BASE-T, SGMII Interface, RJ-45	

 ${\tt NOTE: LFP420, LFP421\ are\ single-strand\ fiber\ SFPs, so\ they\ must\ be\ used\ in\ pairs.}$ 

TOP VIEW

NOTE: Use the LFP416 for a copper interface.

NOTE: Only the built-in copper interface will do PoE.



# LGC220A: 10GBASE-T TO 10GBASE-FX MEDIA CONVERTER, SFP+



#### LGC220A



FRONT VIEW



**BACK VIEW** 

SPECIFICATIONS FOR LGC	220A	
APPROVALS	FCC Class B, CE, RoHS	
DESCRIPTION	Pure Networking Copper to Fiber Media Converter - 10GBASE-T to 10G SFP+	
CONNECTORS	(1) RJ-45, (1) SFP cage	
MEDIA SUPPORTED	CATx UTP/STP; Multimode fiber (50/125 $\mu$ m, 62.5/125 $\mu$ m); Single-mode fiber (8.3/125 $\mu$ m, 9/125 $\mu$ m, 10/125 $\mu$ m)	
DISTANCE	CATx: 328 ft. (100 m)	
WAVELENGTH	Depends on SFP installed	
FORWARDING RATE	10 Mbps: 14,880 pps, 100 Mbps: 148,800 pps, 1000 Mbps: 1,480,000 pps, 10 Gbps: 14,800,000 pps	
FRAME SIZES	Up to 16383 bytes	
POWER	Media converter: 12 VDC, 12 W, barrel connector; External power adapter included: Wall type, 100-240 VAC, 50/60 Hz, 12 VDC, 1A with 4 plug clips for US, EU, UK, AU	
STANDARDS	802.3ab 1000BASE-T, 802.3z 1000BASE-X, 802.3an 10GBASE-T, 802.3ae 10GE over fiber	
DIMENSIONS	1" H x 3.7" W x 2.7" D (2.5 x 9.4 x 6.9 cm)	
WEIGHT	0.7 lb. (0.3 kg)	
TEMPERATURE	Operating: 32 to 122° F (0 to 50° C); Storage: -4 to +158° F (-20 to +70° C)	
MOUNTING	Standalone	
WHAT'S INCLUDED	(1) 10GBASE-T to 10GBASE-FX Media Converter, (1) 12-VDC power supply, (1) power cord	

COMPATIBLE SFPS		
PART NUMBER	DESCRIPTION	
LSP421	SFP+ - 10-Gb, Extended Diagnostics, 850-nm Multimode Fiber, 300-m, LC	
LSP422	SFP+ - 10-Gb, Extended Diagnostics, 1310-nm Single-Mode Fiber, 10-km, LC	
LSP431	SFP+ - 10-Gb, Extended Operating Temperature & Diagnostics, 850-nm Multimode Fiber, 300-m	

# ORDERING INFORMATION

ITEM	CODE	
Fast Ethernet Media Converters		
10/100BT to 100BFX, (1) SFP slot	LHC210A	
10/100BT to 100BFX, (1) MM SC	LHC211A	
10/100BT to 100BFX, (1) SM SC	LHC212A	
Gigabit Ethernet Media Converters		
10/100/1000BT to 1000BFX, (1) SFP slot	LGC210A	
10/100/1000BT to 1000BFX, (1) MM SC	LGC210A	
10/100/1000BT to 1000BFX, (1) SM SC	LGC210A	
Media Converter Chassis	LHGC-RACK	
NOTE: LHC210A, LHC211A, LHC212A, LGC21 media converters are compatible with the LHC		
Spare 5-VDC Power Supplies for Chassis		
Left SIde	LHGC-RACK-PS-L	
Right Side	LHGC-RACK-PS-R	
PoE Media Converter		
1000BASE-X to 10/100/1000BASE-T PoE	LGC215A	
10 Gigabit Media Converter		
10GBASE-TX to 10GBASE-FX Media Converter	LGC220A	

#### **DISCLAIMER**

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

### **ABOUT BLACK BOX**

Black Box is a world leading technology solutions provider specializing in complete high-performance KVM, professional A/V signal distribution and extension and switching solutions for mission-critical applications. Black Box is dedicated to delivering superior project engineering, technical support, and 24/7 customer service you can rely on for your most critical operations.

Every day, our customers trust us to design, integrate, and maintain reliable control room solutions for broadcasting, post-production, stadiums & arenas, medical, air traffic control, oil & gas, government & military, and utility industries. Leave the tech to us and our comprehensive technology solutions will deliver secure connections, fast-response times, real-time collaboration and more.

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NOTES		