



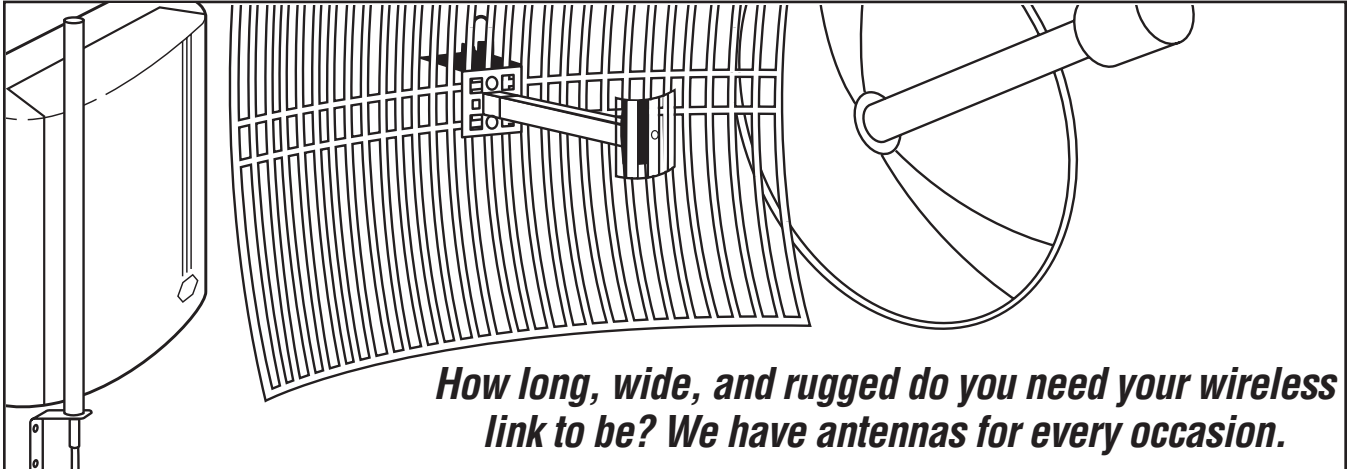
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BLACK BOX[®]

NETWORK SERVICES

Black Box Corporation • 1000 Park Drive • Lawrence, PA 15055-1018 • Tech Support: 724-746-5500 • www.blackbox.com • e-mail: info@blackbox.com

SERIES 4000 AND 8000 ANTENNAS



Key Features

- ▶ **Use omnidirectional antennas with Base Units to reach multiple Remote Units.**
- ▶ **Use yagi antennas in bad-weather areas.**
- ▶ **Use patch panels for short distances.**
- ▶ **Use sectoral antennas for wide-beam multi-point coverage.**
- ▶ **Use semi-parabolic grid antennas for medium distances.**
- ▶ **Use parabolic solid antennas for long distances.**

The Series 4000 and 8000 Wireless Bridge/Routers are great tools for extending your network through the airwaves. See **FaxBack #25319** for a full description of their features.

But these Bridge/Routers aren't complete until you attach an antenna to each Base Unit and Remote Unit in the system. Different applications will call for different antennas, and we offer a variety of antennas to choose from.

Rodlike omnidirectional antennas, as their name implies, send and receive signals in all horizontal directions. They're ideal for Base Units that communicate with several Remote Units in a multipoint system. We carry three different strengths of vertically polarized models: 6 dBi (product code LWA06V), 9 dBi (LWA009V), and 11 dBi (LWA012V). But if your site isn't friendly to vertically polarized signals—especially if you already have a few vertically polarized antennas on the same rooftop or tower—you might want to put up a 6-dBi horizontally

polarized omnidirectional antenna (LWA006H) instead.

Yagi antennas resemble street signs. They can keep working even under heavy accumulations of ice and snow, so they're well suited for cold or mountainous environments. We offer a 15-dBi model, product code LWA015.

Patch panels are thin and square for mounting flat against walls. They work best at shorter distances in good conditions, so they're often the best antenna for sending wireless signals across spaces inside buildings, including warehouses, factories, and lobbies. In areas with moderate weather, as long as the angle and line of sight are both good, they can also be used for building-to-building network links up to 6 mi. (9.6 km) across. An 8-dBi patch panel (LWA008) is available.

Sectoral antennas are also flat but support wider beams, usually with the assistance of vanes that reflect the signals. With wide beams, they can reach a set of remote antennas clustered within a specific horizontal angle or

hidden around corners. We offer 16-dBi sectoral antennas that cover either a 27° area (LWA016-27) or a full 90° area (LWA016-90).

Semi-parabolic grid antennas focus beams more tightly for medium-distance transmission. They can be either vertically or horizontally polarized, depending on how they're mounted. You can order 18-dBi (LWA018) or 24-dBi (LWA024) versions of these.

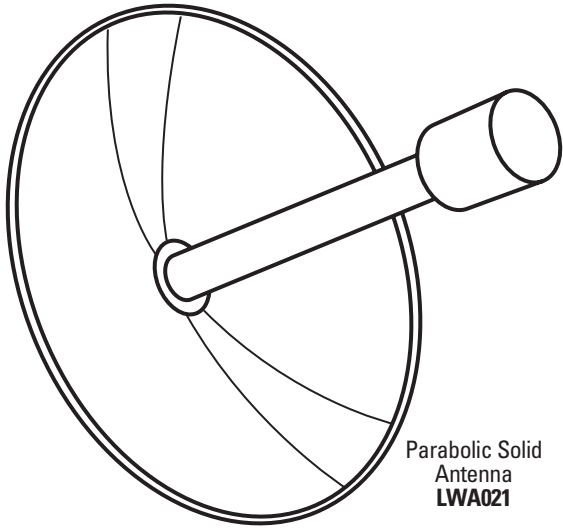
Parabolic solid dish antennas focus the wireless signal in a very tight beam for long-distance transmission, up to 25 miles (40.2 km) if used with an amplified Shelfmount Bridge/Router. Our regular 21-dBi version (LWA021) is good for most applications. The high-performance 21-dBi model (LWA021-HP) is enclosed for better weather resistance.

Very important: Before you order any part of a Series 4000/8000 system, please call Black Box Tech Support for help designing your wireless link and determining what equipment you need.

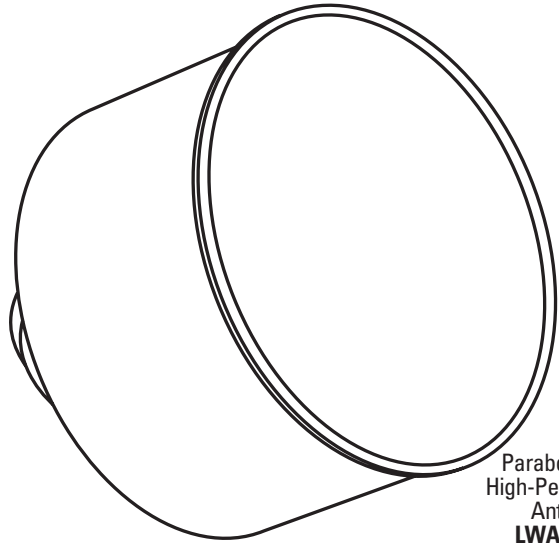


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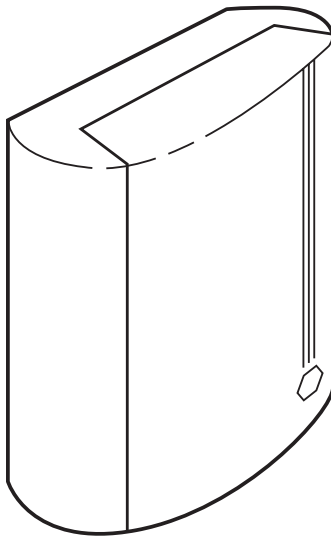
#25326



Parabolic Solid
Antenna
LWA021



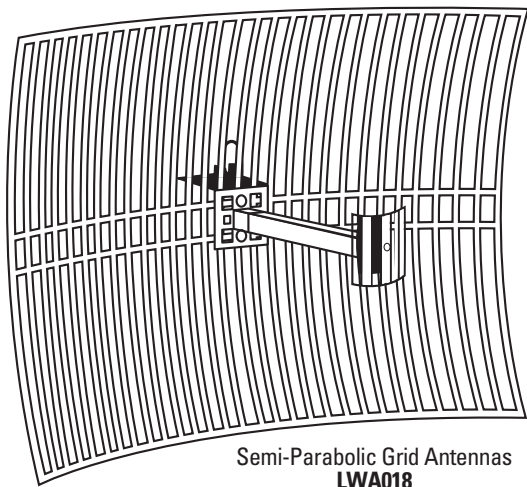
Parabolic Solid
High-Performance
Antenna
LWA021-HP



8-dBi
Patch-Panel
Antenna
LWA008

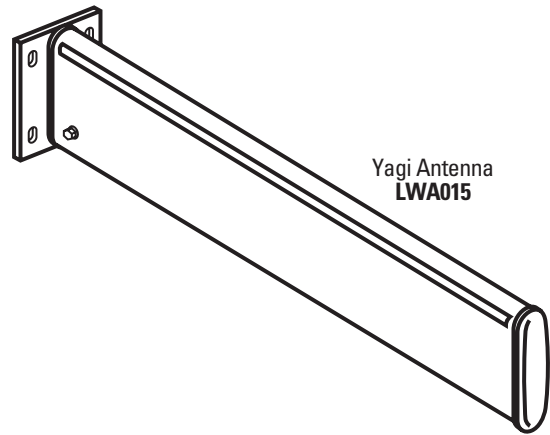


Omnidirectional
Antennas
LWA06V
LWA0009V
LWA012V
LWA006H



Semi-Parabolic Grid Antennas
LWA018
LWA024

(shown in vertically polarized position; can be
mounted in horizontally polarized position instead)



Yagi Antenna
LWA015



Specifications

Beamwidth:

LWA06V: 60 degrees;
 LWA009V: 17 degrees;
 LWA012V: 7 degrees;
 LWA006H: 20 degrees;
 LWA021: 14 degrees;
 LWA021-HP: 5 degrees;
 LWA008: 75 degrees;
 LWA016-27: 27 degrees;
 LWA016-90: 90 degrees;
 LWA018, LWA024: 14 degrees;
 LWA015: 34 degrees

Average Gain:

LWA06V, LWA006H: 6 dBi;
 LWA009V: 9 dBi;
 LWA012V: 11 dBi;
 LWA021 models: 21.1 dBi;
 LWA008: 8.5 dBi;
 LWA016 models: 16 dBi;
 LWA018: 18 dBi;
 LWA024: 24.8 dBi;
 LWA015: 15 dBi

Wind Rating:

LWA016-27, LWA018, LWA024:
 120 mph (193 km/hr.);
 All other models: 125 mph
 (201.1 km/hr.)

Size:

LWA06V: 18"H (45.7 cm);
 LWA009V: 27"H (68.6 cm);
 LWA012V: 42"H (106.7 cm);
 LWA006H: 30"H (76.2 cm);
 LWA021 models: 24" (61 cm) in
 diameter;
 LWA008: 6"H x 4"W x 1.5"D (15.2 x
 10.2 x 3.8 cm);
 LWA016-27: 10.75"H x 11"W
 (27.3 x 27.9 cm); 3"D (7.6 cm)
 unmounted, 6"D (15.2 cm)
 when mounted;
 LWA016-90: 6.1"H x 39"W x 9"D
 (15.5 x 99.1 x 22.9 cm);
 LWA018: 18"H x 24"W (45.7 x
 61 cm);

Size (continued):

LWA024: 18"H x 36"W (45.7 x
 91.4 cm);
 LWA015: 4"H x 0.5"W x 26"L (10.2 x
 1.3 x 66 cm)

Weight:

LWA06V, LWA006H: 1 lb. (0.5 kg);
 LWA009V, LWA012V: 2 lb. (0.9 kg);
 LWA021: 30 lb. (13.6 kg);
 LWA021-HP: 40 lb. (18.1 kg);
 LWA008: 0.5 lb. (0.2 kg);
 LWA016-27: 2 lb. (0.9 kg);
 LWA016-90: 6.2 lb. (2.8 kg);
 LWA018: 3 lb. (1.4 kg);
 LWA024: 5 lb. (2.3 kg);
 LWA015: 1 lb. (0.5 kg)

Ordering Information

ITEM	CODE
2.4-GHz Antennas for Series 4000/8000 Wireless Bridge/Routers	
Vertically Polarized Omnidirectional Antenna, 6 dBi.....	LWA06V
Vertically Polarized Omnidirectional Antenna, 9 dBi.....	LWA009V
Vertically Polarized Omnidirectional Antenna, 11 dBi.....	LWA012V
Horizontally Polarized Omnidirectional Antenna, 6 dBi.....	LWA006H
Solid Parabolic Dish Antenna, 21 dBi.....	LWA021
High-Performance Solid Parabolic Dish Antenna, 21 dBi.....	LWA021-HP
Patch-Panel Antenna, 8 dBi.....	LWA008
Sectoral Antenna, 16 dBi, 27° Beamwidth.....	LWA016-27
Sectoral Antenna, 16 dBi, 90° Beamwidth.....	LWA016-90
Semi-Parabolic Grid Antenna, 18 dBi.....	LWA018
Semi-Parabolic Grid Antenna, 24 dBi.....	LWA024
Yagi Antenna, 15 dBi.....	LWA015

You might also need...

Installation Kits

Without main cable (use this plus an antenna cable for the Shelfmount models).....	LW0000A
With Ethernet cable (for Mastmount models only)	
With 100 ft. (30.5 m) of cable.....	LW001C
With 200 ft. (61 m) of cable.....	LW002C
With 300 ft. (91.4 m) of cable (requires 24-VDC junction box; call for more information).....	LW003C
Antenna cable (for Shelfmount models only)	
50 ft. (15.2 m).....	LW004C
100 ft. (30.5 m).....	LW005C
To mate two antenna cables (optional, do not run antenna cabling to total distances in excess of 110 ft. [33.5 m])	
Female/female patch cable, 10 ft. (3.1 m).....	LW006C
Female/female dual barrel connector.....	LW008C

For information about the Series 4000/8000 Wireless Bridge/Routers and their other accessories, refer to **FaxBack #25319**.



Black Box offers the best warranty program in the industry—Fido Protection®. For more information, request **FaxBack 22512**.