



BOSCH

Invented for life

Application overview

Commercial Audio Solutions

Commercial Audio Solutions: a new shopping and hospitality experience

Today's successful retail and hospitality businesses are transforming themselves from places where consumers only buy things, to also spiritual and emotional consumption spaces. These businesses create distinctive business environments that encourage consumers to stay longer, buy more and ultimately become regular customers who recommend the store to their friends.

According to research, good background music systems create a pleasant shopping environment, encouraging people to stay longer and buy more. Music systems help create an enjoyable atmosphere and can lead to more sales.

For over a century, Bosch has been known worldwide for the quality and reliability of its products and services. It is also the only supplier that ranks among the top three firms in both the professional music and public address (PA) system industries. Bosch Commercial Audio Solutions provide different control methods and speaker types geared to the needs of different business environments. Bosch Commercial Audio Solutions not only create an elegant and comfortable business environment, but also enhance the retail and hospitality customer experience and enhance brand value, creating more opportunities for business owners.

Outstanding business environment

- ▶ Enhances the customer experience
- ▶ Attracts high-end customers
- ▶ Creates new revenue opportunities
- ▶ Meets the growing expectations of customers



Music has a direct effect on emotions

- ▶ Sound is one of the most influential stimulants
- ▶ Music can recall wonderful memories and emotions
- ▶ At a suitable volume it can eliminate unpleasant noises
- ▶ It helps create a unique customer experience



The value of Commercial Audio

- ▶ Enhances the customer experience and brand image
- ▶ Prolongs customer stay
- ▶ Subtle influence and marketing
- ▶ Creates recognizable music associated with a particular company or brand



Commercial Audio system features

- ▶ Easy to install and use
- ▶ Balanced frequency response at low volumes
- ▶ Reliable and easy to maintain
- ▶ Low profile, easily integrated into the decor





Flexible, scalable background music (BGM) solutions



Compact Sound Speaker System

The Compact Sound Speaker System is designed to offer a premium quality acoustic performance-to-size ratio in the small-format installed sound category. The family includes five sonically and aesthetically matched models which allow complete systems to be customized more effectively and more economically:

- Surface-mount subwoofer and satellite speakers
- Ceiling subwoofer and satellite speakers
- Pendant-mount satellite speakers

- ▶ All-in-one background music speaker system, combining subwoofer and satellite speakers
- ▶ High-quality audio with acoustically balanced crossover point eliminates localized sub effect so system sonically 'disappears'
- ▶ Subwoofers have a large 8-inch woofer for increased low frequency output and more natural and smooth sound at low volumes



PLENA matrix Digital Sound System

The advanced features of the PLENA matrix Digital Sound System provides superb audio performance with wireless control across up to eight output zones. With audio quality tailored for a wide range of applications — including live music, background music, high-demand speech environments and zone announcements — the PLENA matrix system delivers full featured digital audio control, with maximum flexibility and reliability.

- ▶ Wireless control using iOS mobile devices
- ▶ Revolutionary user experience
- ▶ Smart power management in amplifier to reduce energy cost
- ▶ Powerful digital signal processing capabilities



Powered by PLENA Easy Line

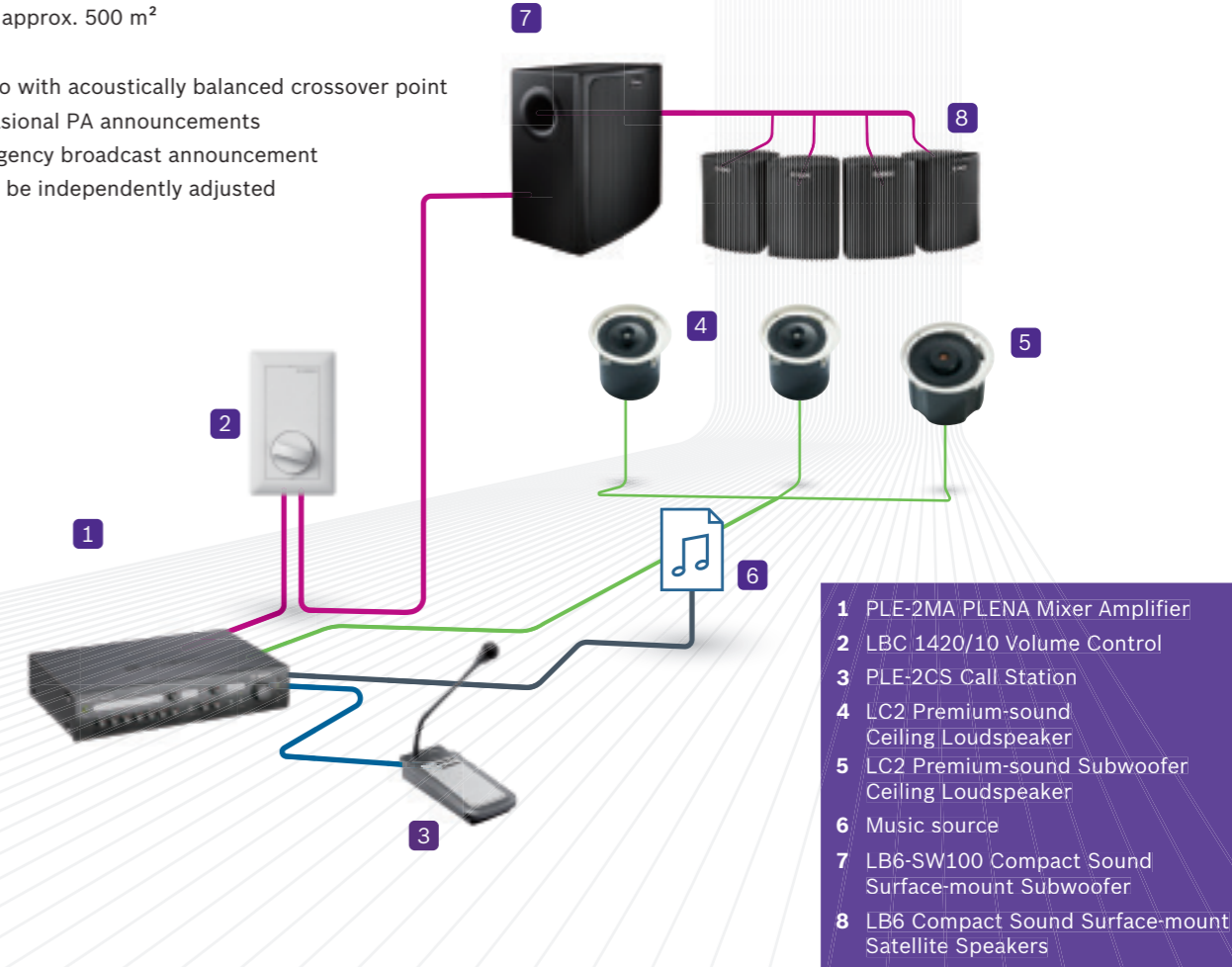
Cafe and small restaurant solution

Small cafes and restaurants generally require compact sound solutions to cater to their background music needs, as they have smaller distances and fewer zones to cover. Loudspeaker systems such as the premium-sound system provide superior acoustics in a small budget solution for these kind of venues. The perfect addition to these loudspeakers are the PLE-1ME and PLE-1MA Mixer Amplifiers of the PLENA Easy Line – ensuring excellent sound thanks to a smart equalizing approach and built-in limiters. Additional features such as zone labeling and setting indicators make it easy to use. Low operating costs and expandability additionally ensure that the system can be used for years to come.



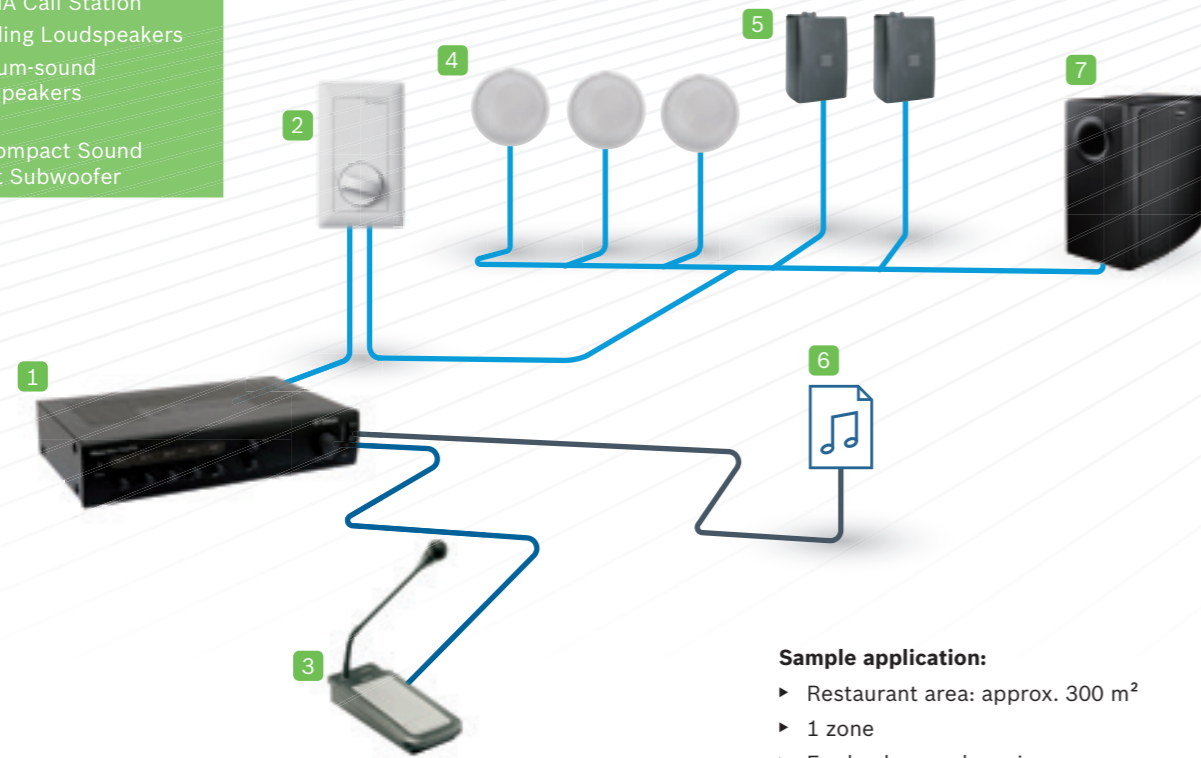
Sample application:

- ▶ Restaurant area: approx. 500 m²
- ▶ 2 zones
- ▶ High-quality audio with acoustically balanced crossover point
- ▶ Suitable for occasional PA announcements
- ▶ Priority for emergency broadcast announcement
- ▶ Zone volume can be independently adjusted



- 1 PLE-2MA PLENA Mixer Amplifier
- 2 LBC 1420/10 Volume Control
- 3 PLE-2CS Call Station
- 4 LC2 Premium-sound Ceiling Loudspeaker
- 5 LC2 Premium-sound Subwoofer Ceiling Loudspeaker
- 6 Music source
- 7 LB6-SW100 Compact Sound Surface-mount Subwoofer
- 8 LB6 Compact Sound Surface-mount Satellite Speakers

- 1 PLE-1ME PLENA Mixer Amplifier
- 2 LBC 1420/10 Volume Control
- 3 PLE-1CS PLENA Call Station
- 4 LHM 0606 Ceiling Loudspeakers
- 5 LB2-UC Premium-sound Cabinet Loudspeakers
- 6 Music source
- 7 LB6-SW100 Compact Sound Surface-mount Subwoofer



Sample application:

- ▶ Restaurant area: approx. 300 m²
- ▶ 1 zone
- ▶ For background music and occasional PA announcements
- ▶ Speakers for indoor and outdoor installation
- ▶ Easy to use with zone labeling and setting indicators

Medium-sized restaurant solution

Suitable for medium-sized restaurants, PLE-2MA PLENA Mixer Amplifier with the Compact Sound Speaker System is a quality step-up solution with more functionality than ordinary consumer audio products. It is possible to cover several areas including the restaurant itself as well as the adjoining kitchen or service area. With the integrated wall panels and separate wall panel volume controls, the restaurant managers can choose the music source and control the volume of the zones remotely. Multiple call stations can be integrated if required.



Powered by PLENA matrix Digital Sound System

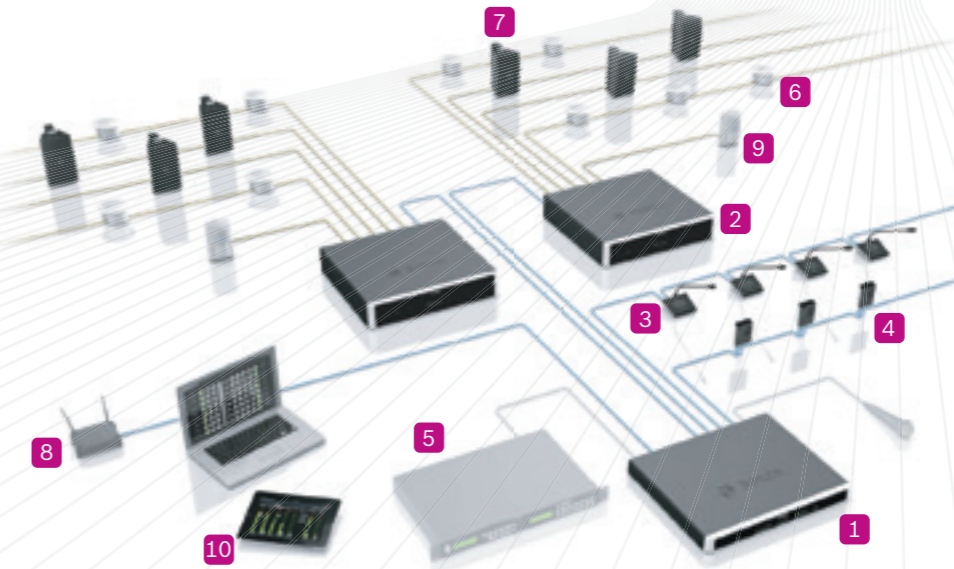
Retail store and restaurant solution

The right type of background or live music can make or break a shopping or dining experience. A quality music and voice announcement system that can be heard loud and clear in different sections of a retail store or restaurant is essential to set the right mood for shopping or dining. In a busy retail store or restaurant with different sections, this can be challenging, but not for the PLENA matrix. This stylish system packs enough powerful audio quality to hit exactly the right note for the perfect shopping or dining experience.



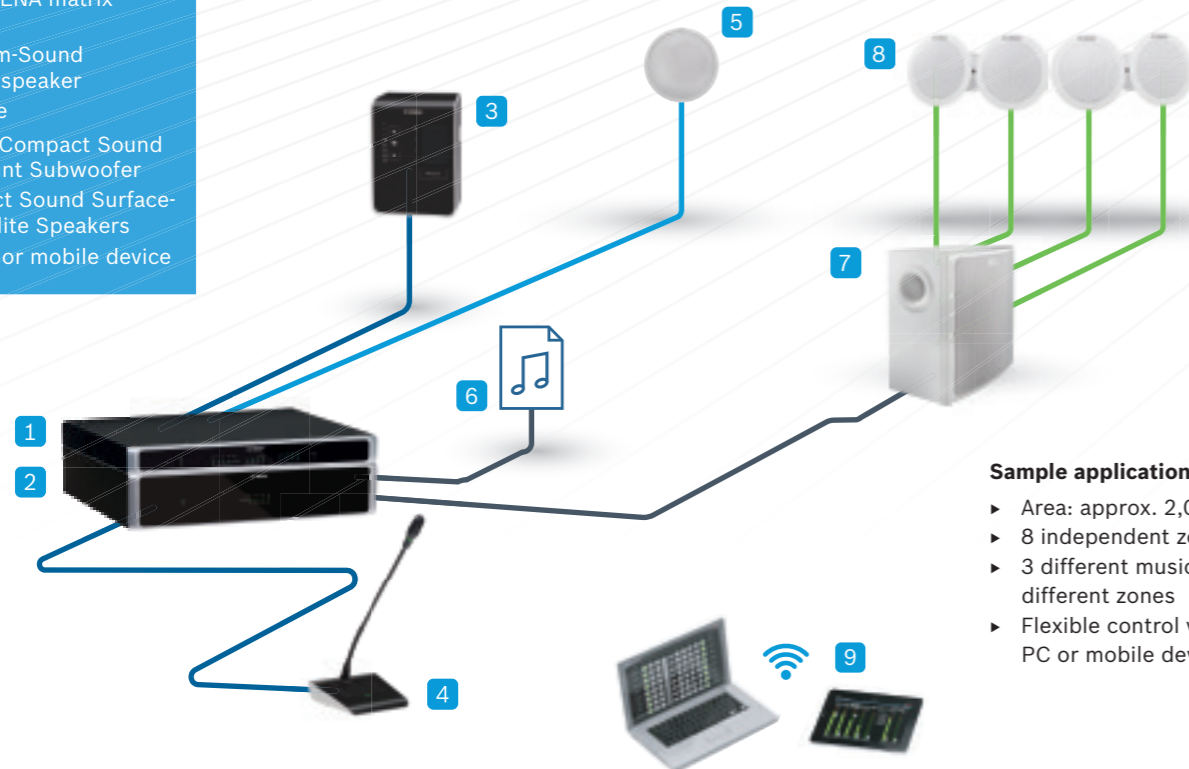
Sample application:

- ▶ Area: more than 3,000 m²
- ▶ Complete DSP zone matrix mixer and loudspeaker processor
- ▶ Real-time adjustments and live metering input
- ▶ 4 microphone/line, 3 music source, call station and emergency input
- ▶ Flexible control via wall panel, PC or mobile device



- 1 PLM-8M8 PLENA matrix DSP Matrix Mixer
- 2 PLM-4Pxxx PLENA matrix DSP Power Amplifier
- 3 PLM-8CS PLENA matrix Call Station
- 4 PLM-WCP PLENA matrix Wall Control Panel
- 5 PLE-SDT PLENA Easy Line Music Source
- 6 LBC3090/31 Compact Sound Ceiling Speaker
- 7 LB2-UC Premium-sound Cabinet Speaker
- 8 Wireless Router
- 9 Motion Detector
- 10 Portable PC or mobile device

- 1 PLM-8M8 PLENA matrix 8 Channel DSP Matrix Mixer
- 2 PLENA matrix DSP Power Amplifier
- 3 PLM-WCP PLENA matrix Wall Control Panel
- 4 PLM-8CS PLENA matrix Call Station
- 5 LC2 Premium-Sound Ceiling Loudspeaker
- 6 Music source
- 7 LB6-SW100 Compact Sound Surface-mount Subwoofer
- 8 LC6 Compact Sound Surface-mount Satellite Speakers
- 9 Portable PC or mobile device

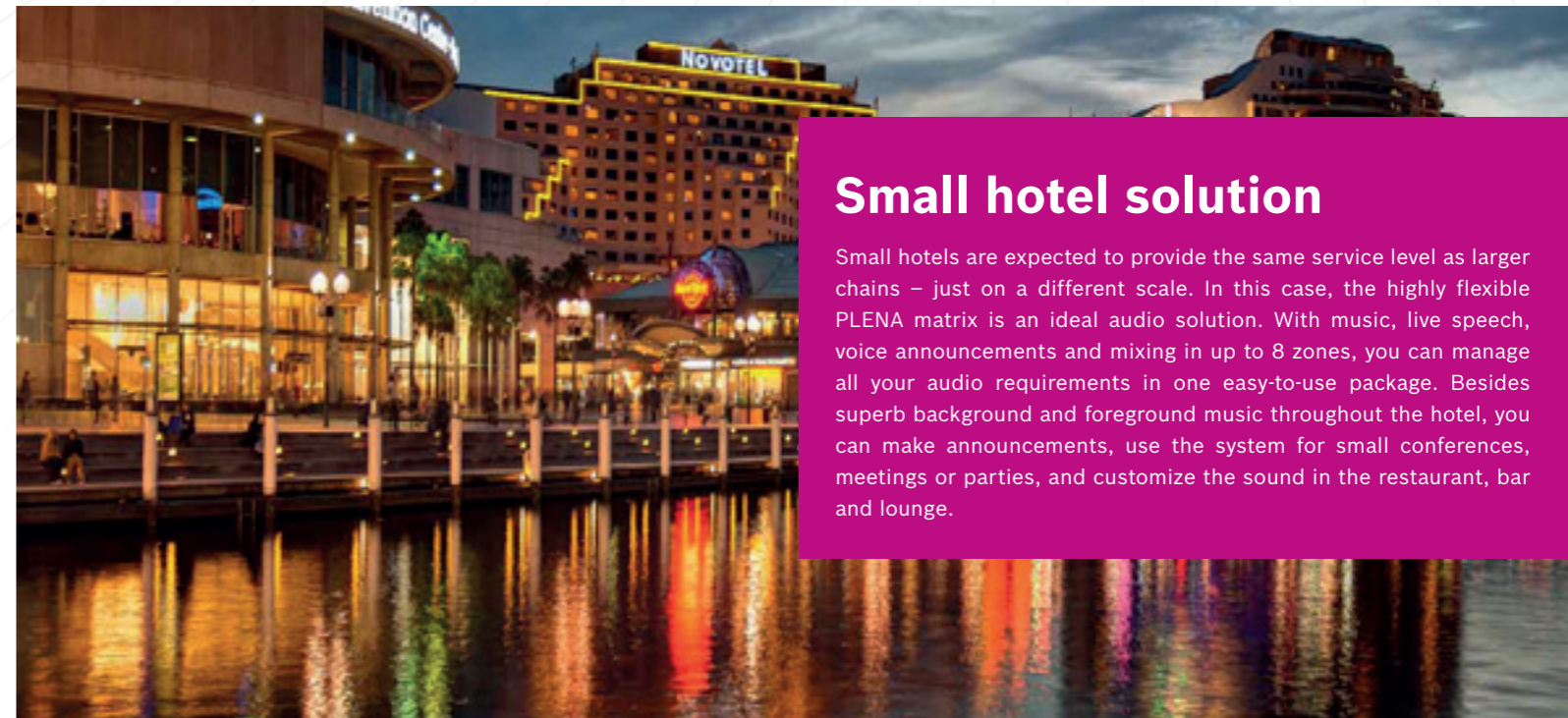


Sample application:

- ▶ Area: approx. 2,000 m²
- ▶ 8 independent zones
- ▶ 3 different music channels in different zones
- ▶ Flexible control via wall panel, PC or mobile devices















Small hotel solution

Small hotels are expected to provide the same service level as larger chains – just on a different scale. In this case, the highly flexible PLENA matrix is an ideal audio solution. With music, live speech, voice announcements and mixing in up to 8 zones, you can manage all your audio requirements in one easy-to-use package. Besides superb background and foreground music throughout the hotel, you can make announcements, use the system for small conferences, meetings or parties, and customize the sound in the restaurant, bar and lounge.



PLENA Easy Line

PLENA matrix Digital Sound System

PLE-1ME ^{060-EU, 120-EU, 240-EU} Single zone Mixer Amplifier	PLE-1MA ^{030-EU, 060-EU, 120-EU} Single zone Mixer Amplifier	PLE-2MA ^{120-EU, 240-EU} Two zone Mixer Amplifier	PLN-6AIO240 PLENA All-in-One	PLM-8M8 Audio Matrix Controller	Power Amplifier PLM-4P125 / PLM-4P220	PLE-SDT SD Player/Tuner BGM source	
							
							Rear Interface
1	1	2	6	8	4		Zones
Single channel 60 W, 120 W, 240 W (100 V/4 ohm)	Single channel 30 W, 60 W, 120 W (100 V/4 ohm)	Single channel 120 W, 240 W (100 V / 4 ohm)	Single channel 240 W (100 V / 8 ohm)	8-channel line output	PLM-4P125: 4 channel 4 x 130 W PLM-4P220: 4 channels 4 x 220 W (100 V/70 V/8 ohm/4 ohm)	2	Output Channel and Power
Line 60 Hz - 20 kHz (+1/-3dB @-10 dB) Microphone 70 Hz - 20 kHz (+1/-3dB @-10 dB)	50 Hz - 20 kHz (+1/-3dB @-10 dB)	50Hz - 20 kHz (+1/-3dB @-10 dB)	60 Hz - 18 kHz (+1/-3 dB @ -10 dB)	20 Hz - 20 kHz (+0/-3 dB)	65Hz - 20 kHz (+0/-3 dB)	FM tuner: 50 Hz - 12 kHz SD/USB player: 50 Hz - 20 kHz	Frequency Response
<1 %	<1 %	<1 %	<1 %	<0.01 %	PLM-4P125<0.1 % PLM-4P220<0.03 %	FM Tuner: <1% SD/USB player : <0.1%	THD
>93 dB	>93 dB	>93 dB		>103 dB	PLM-4P125>101 db PLM-4P220>102 db		Dynamic Range
4 x Microphone/Line 1 x Music	4 x Microphone/Line 3 x Music 1 x Emergency/Telephone	6 x Microphone/Line 3 x Music Call Station 1 x Emergency/Telephone	6 x Microphone/Line 3 x Music Call Station 1 x Emergency/Telephone Built-in AM/FM Tuner MP3 player for USB device and SD card	4 x Microphone/Line 3 x Music Call station	4 x Microphone/Line	1 x SD card /USB input 1 x FM tuner	Audio Input/Output
	1 x Wall Panel	1 x Wall Panel	1 x Wall Panel	1 x Logic input 1 x Ethernet 1 x Wall Panel iOS device control	1 x Ethernet 1 x Logic input		Control input/Interface
100 x 430 x 270 mm (19" wide, 2RU high)	100 x 430 x 270 mm (19" wide, 2RU high)	100 x 430 x 270 mm (19" wide, 2RU high)	133 x 430 x 365 mm (19" wide, 3 U high)	45 x 440 x 358 mm (19" wide, 1RU high)	90 x 440 x 417 mm (19" wide, 2RU high)	44 x 444 x 250 mm (19" wide, 2RU high)	Dimensions
PLE-1ME060-EU 6.5 kg PLE-1ME120-EU 8.9 kg PLE-1ME240-EU 10.5 kg	PLE-1MA060-EU 5 kg PLE-1MA120-EU 8.5 kg PLE-1MA240-EU 10.5 kg	PLE-2MA120-EU 10.5 kg PLE-2MA240-EU 12.5 kg	18 kg	6 kg	PLM-4P125 15 kg PLM-4P220 18 kg	3.6 kg	Weight
PLE-1CS Call Station	PLE-1CS Call Station	PLE-2CS Call Station	PLN-6CS Call Station	PLM-8CS Call Station, 8 zones			Accessory Call Station
	PLE-WP3S2Z-EU Wall Control Panel	PLE-WP3S2Z-EU Wall Control Panel	PLN-4S6Z Wall panel with local input	PLM-WCP Wall Control Panel, 8 zones			Accessory Control Panel

Loudspeakers

Loudspeakers

LHM 0606/xx Ceiling Speaker	LBC3090/31 Ceiling Speaker	LC2-PC30G6-4 Premium-sound Ceiling Speaker	LC2-PC30G6-8 Premium-sound Ceiling Speaker	LC2-PC60G6-10 Premium-sound Ceiling Subwoofer	LB2-UC15 / 30 Premium-sound Cabinet Speakers	LB1-UM20 / 50 Premium-sound Cabinet Speakers	LC6 Compact Sound Speaker System LC6-S-L & LC6 SW100-L	LB6 Compact Sound Speaker System LB6-S-D & LB6-SW100-D*	LP6 Compact Sound Pendant- mount Speaker	
										
Background music PA announcements	Background music PA announcements	Background music Foreground music PA announcements	Background music Foreground music PA announcements	Low frequency enhancement	Background music Foreground music PA announcements	Background music Foreground music PA announcements	Background/Foreground music PA announcements Low frequency enhancement	Background/Foreground music PA announcements Low frequency enhancement	Background/ Foreground music PA announcements	Applications
80 Hz - 18 kHz	70 Hz - 18 kHz	65 Hz - 20 kHz	50 Hz - 20 kHz	45 Hz - 150 kHz	95 Hz - 20 kHz 100 Hz - 19 kHz	90 Hz to 20 kHz	Subwoofer: 45 Hz - 300 Hz Satellite: 180 Hz - 20 kHz	Subwoofer: 42 Hz - 300 Hz Satellite: 180 Hz - 20 kHz	Satellite: 150 Hz - 20 kHz	Frequency Response
94 dB	99 dB	101 dB	106 dB	112 dB	99 dB / 105 dB	101 dB / 108 dB	Subwoofer: 114 dB Satellite: 102 dB	Subwoofer: 114 dB Satellite: 102 dB	Satellite: 102 dB	Max SPL
86 dB	91 dB	86 dB	91 dB	94 dB	87 dB / 90 dB	88 dB / 91 dB	88 dB/84 dB	88 dB/84 dB	Satellite: 84 dB	SPL
6 / 3 / 1,5 W	6 / 3 / 1,5 W	30 / 15 / 7,5 / 3,75 W	30 / 15 / 7,5 / 3,75 W	60 / 30 / 15 W / (7,5 W only 70 V)	15 W / 30 W	20 W / 50 W	100 W	100 W	30 W	Rated power
175° / 55°	160° / 55°	130°, conical	110°, conical	180°	Horizontal 184° / 166° Vertical 170° / 140°	Horizontal 174° / 186° Vertical 127° / 84°	Satellite: 150° x 150° Subwoofer: Omnidirectional	Subwoofer: Omnidirectional Satellite: 150° x 150°		Opening Angle
100 V	100 V	70 V, 100 V, 8 ohm	70 V, 100 V, 8 ohm	70 V, 100 V, 8 ohm	11 / 70 V / 100 V, 8 ohm 15,5 / 70 / 100 V	12,65 / 70 V / 100 V, 8 ohm 20 / 70 V / 100 V	70 V, 100 V, 16 ohm	70 V, 100 V, 16 ohm	70 V, 100 V, 16 ohm	Rated voltage
Indoor	Indoor	Indoor	Indoor	Indoor	Indoor, outdoor (IP65)	Indoor, outdoor (IP65)	Indoor	Indoor	Indoor	Installation Environment
White	White	White	White	White	White/Charcoal black	White/Charcoal black	White	White/Charcoal black	White	Color
Diameter 199 mm Mounting cut out 165mm +5 mm	Diameter 199 mm Mounting cut-out 172 mm	Diameter 210 mm Mounting cut-out 183 mm +5 mm	Diameter 300 mm Mounting cut-out 272 mm +5 mm	Diameter 350 mm Mounting cut-out 322 mm +5 mm	205 x 136 x 117 mm 250 x 160 x 140 mm	274 x 160 x 180 mm 405 x 160 x 180 mm	Subwoofer: 316 x 373 mm Satellite: 119 x 135 mm	Subwoofer: 400 x 400 x 230 mm Satellite: 115 x 85 x 95 mm	201 x 113 mm	Dimensions
620 g	990 g	2.7 kg	5 kg	7 kg	1.9 kg / 2.4 kg	3.88 kg / 5,58 kg	Subwoofer: 9.52 kg Satellite: 0.82 kg	Subwoofer: 12.05 kg Satellite: 0.5 kg	0.73 kg	Weight
Fire Dome LBC3080/01	Fire Dome LBC3080/01	LC2-PC30G6-8L (for venues with limited ceiling space), LC2-PC60G6-8H (for venues with extremely high ceilings)						LP6 (Ceiling satellite speakers for open ceiling applications)		Related Products

xx = 00 screw mounting
xx = 10 spring clamp mounting

*Also available in white LB6-S-L
LB6-SW100-L

Success story

PLENA matrix

The perfect fit for Hard Rock Café, Sydney, Australia

Offering a spectacular view across Darling Harbour, the Hard Rock Café Sydney has quickly established itself as a favorite waterfront destination for entertainment and dining. Having reopened at this new location, the 500+ capacity venue includes a lounge bar, outdoor balcony dining area and a live performance area. Famed for its memorabilia, burgers, merchandise and cocktails, the Hard Rock Café chain continues to

inspire their guests with superb background and foreground music. The venue required eight zones with independent control which was easily supplied by the PLENA matrix 8x8 DSP mixer in one easy-to-use package.



Bosch Security Systems

To learn more about the Bosch product offering, please visit www.boschsecurity.com or send an e-mail to emea.securitysystems@bosch.com

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