

High-performance commercial audio solutions

Portfolio and application overview

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Commercial Audio Solutions:

a new shopping and hospitality experience

Retail and hospitality businesses are finding new ways to connect with consumers, with the most successful businesses positioning themselves as more than simple shopping locations. They are transforming into distinctive environments of spiritual and emotional consumption, becoming gathering sites where friends share space while adding new clothes, products and experiences to their lives.

Research shows that music systems help provide an enjoyable atmosphere and can be used to encourage 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 create an encouraging and comfortable business environment. They also enhance the retail and hospitality customer experience, creating more opportunities for business owners, while increasing brand value.

Outstanding business environment

- Enhances the customer experience
- Creates new revenue opportunities
- Meets the growing expectations of customers

Music helps create a unique customer experience

- Sound is a highly influential stimulus
- Music can recall wonderful memories and emotions
- At a suitable volume it can mask or distract from unpleasant background noise

Commercial Audio system features

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

The value of Commercial Audio

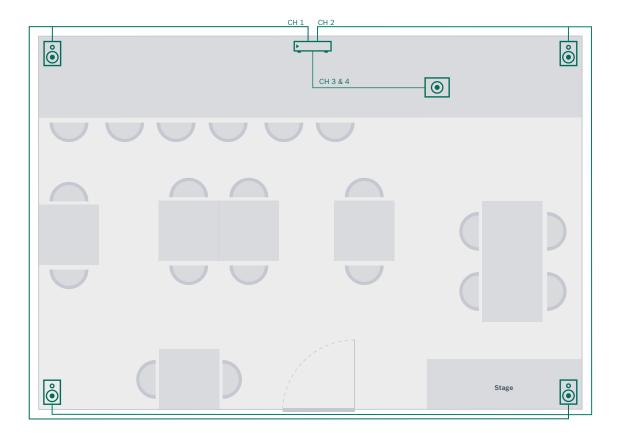
- Prolongs customer stay
- Subtle influence and marketing
- Creates recognizable music associated with a particular company or brand

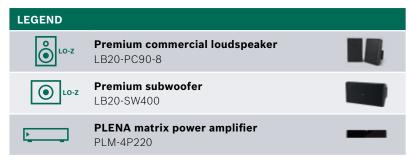
Bar/Cafe

Creating a cool trendy environment is essential for small bars and cafes. They 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 LB20 premium commercial loudspeakers provide superior acoustics for these kind of venues. The perfect addition to these loudspeakers is the PLENA matrix – ensuring excellent sound thanks to a smart equalizing approach and built-in limiters. Low operating costs and expandability additionally ensure that the system can be used for years to come.

- Café/bar area: approx. 100 200 m² (328 - 656 ft²) 1 zone
- For background music and occasional live performance/speech
- Loudspeakers for indoor and outdoor installation







Channels limited to match loudspeaker power Channel 1 & 2: 4 Ω Channel 3 & 4: 8 Ω

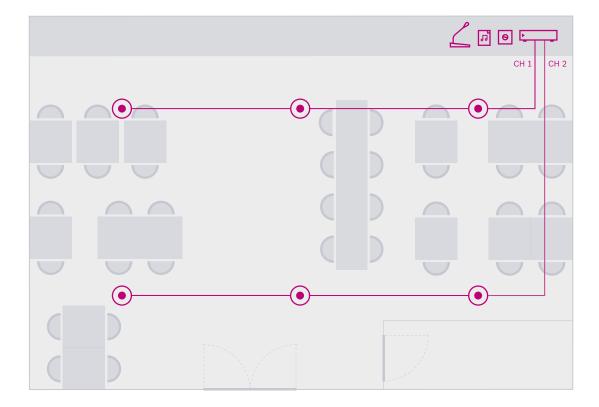
Fast Food Restaurant

Breakfast, lunch and dinner for the fast food restaurant means peak noise levels from hungry customers and seated eaters alike. Maintaining a welcoming and safe environment means being able to accurately adapt to noise levels at these peak times as well during quieter periods. Background music is a vital support for restaurant staff in maintaining comfort levels, and a PLENA sound system plays a central role in keeping customers happy at any time of day or night. With 4 mic/line inputs for connection to the Plena Call Station, 3 music inputs and an emergency/ telephone input, this mixing amplifier can deliver 120 Watts while maintaining full music and audio clarity. Add the LC2 premium ceiling loudspeakers to tailor the set-up to suit every taste.

- Restaurant area: approx. 150 250 m² (492 - 820 ft²) 2+ zones
- Separate tone control for voice and music
- 2 Priority inputs for (emergency) broadcast announcement









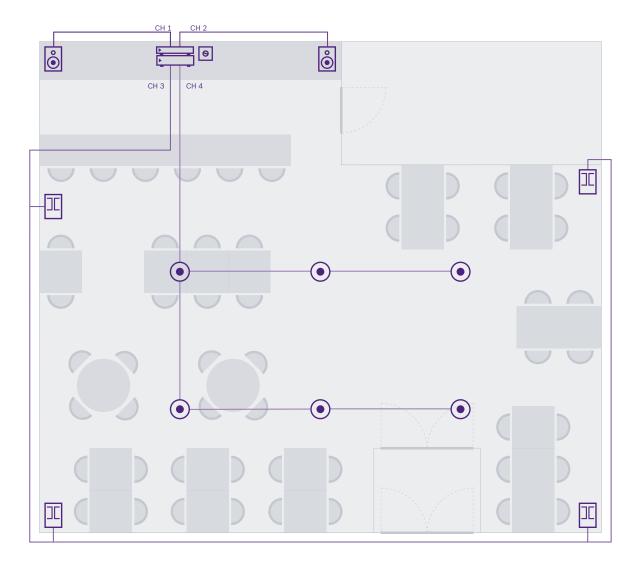
Small / Midsized Restaurant

Cozy dining - it's all about intimacy and the background music helps to create this. Suitable for small/medium-sized restaurants, the PLENA matrix Digital Sound 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, restaurant managers can choose the music source and control the volume of the zones remotely.

- Restaurant area: approx. 400 500 m² (1312 - 1640 ft²) 2+ zones
- High quality audio with acoustically balanced crossover point
- ► Suitable for occasional live performance/speech
- > Zone volume can be independently adjusted
- Priority for emergency broadcast announcement







LEGEND		
100V	Premium commercial loudspeaker LB20-PC30-5	
o Lo-z	Premium commercial loudspeaker LB20-PC90-8	
	Premium ceiling loudspeaker LC2-PC30G6-8	9
	PLENA matrix mixer PLM-8M8	
Þ	PLENA matrix power amplifier PLM-4P220	
Θ	PLENA matrix wall control panel PLM-WCP	

Channels 1 & 2 limited to match loudspeaker power

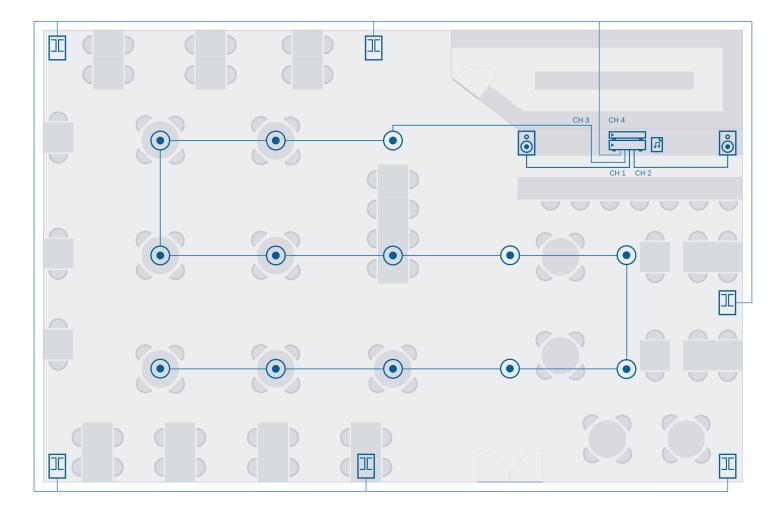
Large Restaurant

Dining out with family or friends should be a memorable and pleasant occasion. With the PLENA matrix Digital Sound System, your guests will always enjoy the perfect accompaniment to their dining experience. Simply link it to a media set, MP3 player or smart phone, and experience exceptional sound via our compact and stylish loudspeakers. If you need to make an announcement to guests or employees, use the system's call station for clear and audible messaging. Multiple zones are supported, so atmospheric music can be played in the dining area, while employees can be addressed separately in the kitchen. Additional call stations can be integrated as required.

- Restaurant area: approx. 1500 2000 m² (4921 - 6561 ft²)
- ► Up to 8 independent zones
- ► 3 different music channels in different zones
- Flexible control via wall panel, PC or mobile devices
- Option for PA announcements







LEGEND		
1000	Premium commercial loudspeaker LB20-PC30-5	
LO-Z	Premium commercial loudspeaker LB20-PC90-8	
	Premium ceiling loudspeaker LC2-PC30G6-8	9
	PLENA matrix mixer PLM-8M8	
<u> </u>	PLENA matrix power amplifier PLM-4P220	
ភ	Music source	

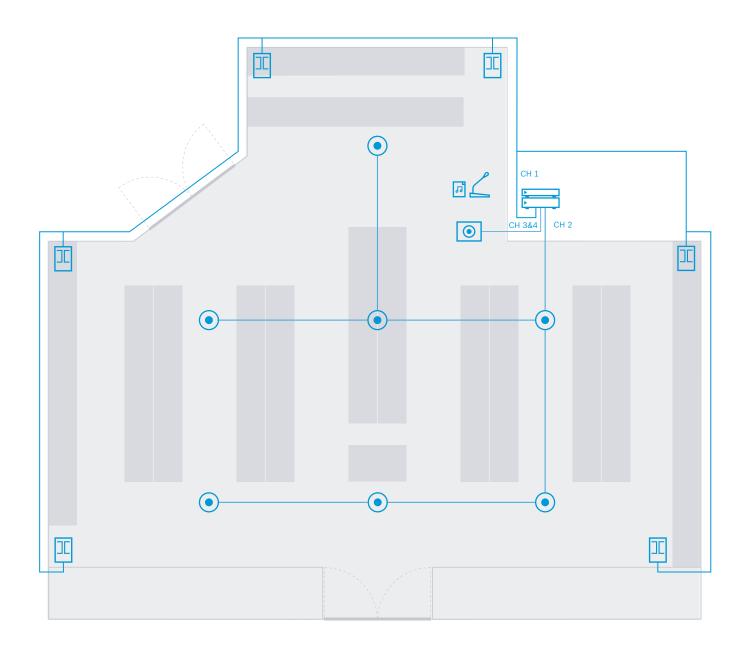
Midsized Shop

Whether it is an afternoon of casual browsing or looking for a specific item, the shopping experience should be rewarding, comfortable and fun. Attracting customers into a shop and keeping them there both rely on providing a sense of welcome and well-being. That's where a high-quality music and voice announcement system really helps, both in setting the mood for shopping and for keeping shoppers informed. Busy retail stores with multiple sections and floors can often find this challenging, but not any longer. The PLENA matrix Digital Sound System, combined with the LB20 premium commercial loudspeakers, delivers beautiful audio for music and messaging. This stylish system hits exactly the right note for the perfect shopping experience.

- Shop area: approx. 500 800 m² (1640 2624 ft²)
- Up to 8 independent zones
- Room acoustics and loudspeaker equalizing adjustments possible
- 4 microphone/line, 3 music source, call station and emergency input
- Flexible control via wall panel, PC or mobile device







LEGEND		
100V	Premium commercial loudspeaker LB20-PC30-5	
	Premium ceiling loudspeaker LC2-PC30G6-8	9
LO-Z	Premium subwoofer LB20-SW400	
Þ	PLENA mixer PLE10M2	_
<u>F</u>	PLENA matrix amplifier PLM-4P220	
2	PLENA Two-zone call station PLE-2CS	6
1	SD Player/Tuner BGM source PLE-SDT	

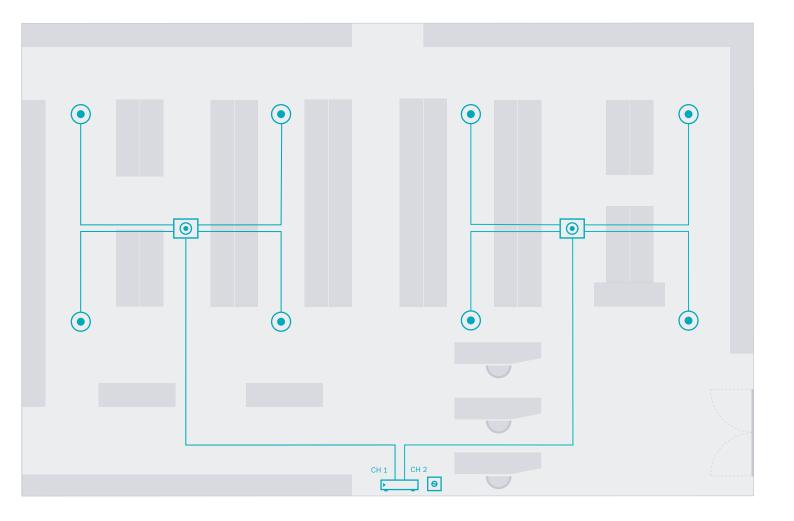
The layouts are for general and visual purposes only and should not be directly applied to any installation.

Supermarket

Supermarkets have different periods of heavy foot traffic, with daily customers looking for lastminute goods or families doing the weekly shopping. High noise levels at till areas and entrances/exits, combined with the need for constant paging/messaging alerts and special offers, all make the supermarket a challenging environment for owners. We now have a perfect solution that ensures the entire supermarket floor space is adequately covered for audible messaging, background music and announcements. The Compact Sound System combined with the PLENA All-In-One Unit including paging system is an easy-to-use out-ofthe-box solution, delivering high quality sound and intelligible voice announcements and special announcements in targeted areas.

- Supermarket area: approx. 500 800 m² (1640 - 2624 ft²)
- Built-in AM/FM tuner with presets, MP3 player for USB device and SD card
- Flexible control via wall panel
- Up to 6 independent zones





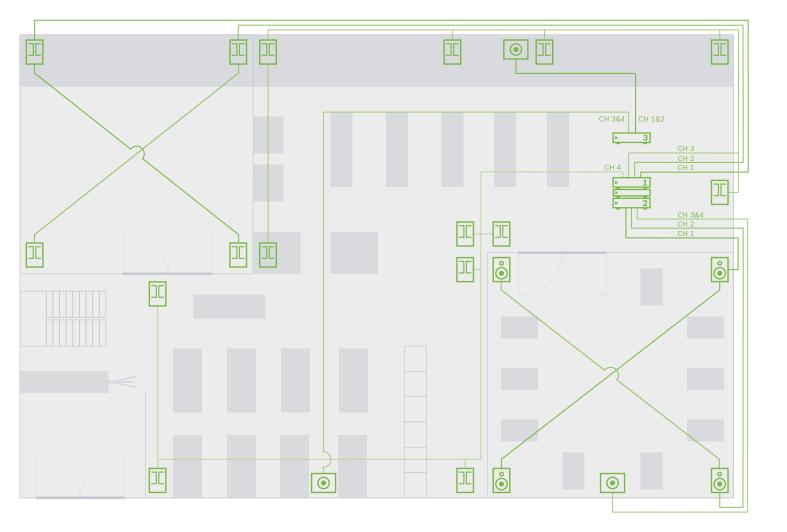
LEGEND		
\bigcirc	Compact Sound satellite speaker LC6-S Satellite speaker	
	Compact Sound subwoofer LC6-SW100	
	PLENA All-in-one PLN-6AIO240	Sector Sector
Θ	PLENA wall control panel controller PLN-4S6Z	

Fitness Centre

Fitness goals need focus, and a great gym environment requires the right music to keep the practice rhythm and pace. Whether that's a soothing mantra in the yoga section, or a techno vibe in the cardio area, it's clear that a capable system should be able to handle different music and volumes at the same time. Enter the PLENA matrix Digital Sound System, with intuitive configuration interfaces for ease-of-use for different zones or sections. Combine it with LB20 Premium commercial loudspeakers, and visitors will enjoy exceptional sound throughout their fitness journey.

- Fitness area: approx 800 1000 m² (2624 - 3280 ft²)
- Up to 8 zones
- ► Flexible control via PC or iOS app
- Supports enhancing fitness experience with foreground music, background music, live speech and announcements





LEGEND		
1000	Premium commercial loudspeaker LB20-PC30-5	
LO-Z	Premium commercial loudspeaker LB20-PC90-8	
LO-Z	Premium subwoofer LB20-SW400	
Þ	PLENA matrix mixer PLM-8M8	
<u>► 1</u>	PLENA matrix power amplifier PLM-4P220	
▶ <u>2</u>	PLENA matrix power amplifier PLM-4P220	
<u>> 3</u>	PLENA matrix power amplifier PLM-4P220	

Channels limited to match loudspeaker power Channel 1 & 2: 4 Ω Channel 3 & 4: 8 Ω

Loudspeakers

	LC6-S-L	LC6-SW100-L	LC2-PC30G6-4	LC2-PC30G6-8
			٢	9
Description	2" Full-Range Ceiling Loudspeaker	8" Ceiling Subwoofer	4" Two-Way Coaxial Ceiling Loudspeaker	8" Two-Way Coaxial Ceiling Loudspeaker
Frequency Range (-10 dB)	180 Hz - 20 kHz	45 Hz -300 kHz	65 Hz - 20 kHz	50 Hz - 20 kHz
Sensitivity (1 W/1 m)	84 dB	88 dB	86 dB	91 dB
Max. SPL (@1m)	102 dB	114 dB	109 dB	116 dB
Power Handling (Continuous/Program/ Peak)	15/30/60 W	100/200/400 W	50/100/200 W	75/150/300 W
Nominal Impedance	16 Ω	4 Ω	8 Ω	8 Ω
Transformer Taps (Transformer Version Only)	N/A	70 V: 100, 50, 25, 12.5 W and 4/8 Ω 100 V: 100, 50, 25 W and 4/8 Ω	70 V: 30, 15, 7.5, 3.75, 1.8 W and 8 Ω 100 V: 30, 15, 7.5, 3.75 and 8 Ω	70 V: 30, 15, 7.5, 3.75, 1.8 W and 8 Ω 100 V: 30, 15, 7.5, 3.75 and 8 Ω
Coverage (Conical)	100°	Omnidirectional	130°	110°
Coverage (H x V)				
HF Transducer	N/A	N/A	0.75" (19 mm)	1" (25 mm)
LF Transducer	2" (50 mm)	12" (305 mm)	4" (100 mm)	8" (200 mm)
Environmental	Indoor	Indoor	Indoor	Indoor
Certification	UL 1480A, UL 2043, CE	UL 1480A, UL 2043, CE	UL 1480A, UL 2043, CE	UL 1480A, UL 2043, CE
Color	White (RAL 9003)	White (RAL 9003)	White (RAL 9010)	White (RAL 9010)
Cutout Dimensions (diameter)	114 mm (4.49")	346 mm (13.6")	183 mm (7.19")	269 mm (10.6")
Diameter	135 mm (5.3")	373 mm (14.69")	181 mm (7.1")	300 mm (11.8")
Depth	119 mm (4.7")	316 mm (12.44")	176 mm (6.9")	255 mm (10.0")
Width				
Height				
Weight	0.82 kg (1.8 lb)	9.52 kg (21 lb)	2.7 kg (6.0 lb)	5 kg (11.0 lb)

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

LC2-PC60G6-10	LC20-PC60G6-6	LC20-PC60G6-8	LB6-S	LB6-SW100
9				
10" High-Power Ceiling Subwoofer	6.5" Premium Two-Way Coaxial Ceiling Loudspeaker	8" Premium Two-Way Coaxial Ceiling Loudspeaker	2" Full-Range Surface-Mount Loudspeaker	8" Surface-Mount Subwoofer
45 Hz - 150 kHz	50 Hz - 20 kHz	40 Hz - 20 kHz	180 Hz - 20 kHz	42 Hz - 300 kHz
94 dB	87 dB	88 dB	84 dB	88 dB
120 dB	113 dB	114 dB	100 dB	114 dB
100/200/400 W	100/200/400 W	100/200/400 W	15/30/60 W	100/200/400 W
8 Ω	10 Ω	10 Ω	16 Ω	Stereo 8 $\Omega/$ Mono 4 Ω
70 V: 60, 30, 15, 7.5 W and 8 Ω	70 V: 60, 30, 15, 7.5 W and 8 Ω	70 V: 60, 30, 15, 7.5 W and 8 Ω	N/A	70 V: 100, 50, 25, 12.5 W and 4/8 Ω
100 V: 60, 30, 15 W and 8 Ω	100 V: 60, 30, 15 W and 8 Ω	100 V: 60, 30, 15 W and 8 Ω		100 V: 100, 50, 25 W and 4/8 Ω
180°	100°	120°		
			100 x 100°	Omnidirectional
N/A	1.38" (35 mm)	1.38" (35 mm)	N/A	N/A
10" (200 mm)	6.5" (165 mm)	8" (200 mm)	2 inch (50 mm)	12 inch (305 mm)
Indoor	Indoor	Indoor	Indoor	Indoor
UL 1480A, UL 2043, CE	UL 1480A, UL 2043, CE	UL 1480A, UL 2043, CE	CE	CE
White (RAL 9010)	White (RAL 9010)	White (RAL 9010)	White (RAL 9003) Black (RAL 9004)	White (RAL 9003) Black (RAL 9004)
322 mm (12.625")	248 mm (9.76")	294.3 mm (11.59")		
320 mm (12.6")	280 mm (11.0")	327 mm (12.87")		
303 mm (11.9")	260 mm (10.2")	324 mm (12.76")	99 mm (3.75")	230 mm (9.06")
			85 mm (3.35")	400 mm (15.75")
			115 mm (4.53")	400 mm (15.75")
7 kg (15.5 lb)	7 kg (15.43 lb)	8 kg (17.6 lb)	0.5 kg (1.1 lb)	18.26 kg (40.25 lb)

Loudspeakers (continued)

	LB1-UM20	LB1-UM50	LB2-UC15	LB2-UC30
Description	5" Full-Range 20 W EN54 Surface Mount Loudspeaker	5" Full-Range 50 W EN54 Surface Mount Loudspeaker	4" Full-Range Surface Mount Loudspeaker	5" Full-Range Surface Mount Loudspeaker
Frequency Range (-10 dB)	90 Hz - 20 kHz	90 Hz - 20 kHz	95 Hz - 20 kHz	100 Hz - 19 kHz
Sensitivity (1 W/1 m)	88 dB	91 dB	87 dB	90 dB
Max. SPL (@1m)	101 dB	108 dB	99 dB	105 dB
Power Handling (Continuous/Program/ Peak)	30 W	75 W	15 W	30 W
Nominal Impedance	8 Ω	8 Ω	8 Ω	8 Ω
Transformer Taps (Transformer Version Only)	70 V: 20, 10, 5, 2.5 W 100 V: 20, 10, 5, 2.5 W	70 V: 50, 25, 12.5, 6.2, 5 W 100 V: 50, 25, 12.5, 6.2, 5 W	70 V: 15, 7.5, 3.75, 1.9 W 100 V: 15, 7.5, 3.75, 1.9 W	70 V: 30, 15, 7.5, 3.75 W 100 V: 30, 15, 7.5, 3.75 W
Coverage (Conical)				
Coverage (H x V)	174 x 127° (@1K)	186 x 84° (@1K)	184 x 170° (@1K)	166 x 140° (@1K)
HF Transducer	1 inch (25.4 mm)	1 inch (25.4 mm)	1/2 inch (13 mm)	1/2 inch (13 mm)
LF Transducer	5.25 inch (134.5 mm)	5.25 inch (134.5 mm)	4 inch (134.5 mm)	5 inch (127 mm)
Environmental	Indoor, Outdoor (IP 65)	Indoor, Outdoor (IP 65)	Indoor, Outdoor (IP 65)	Indoor, Outdoor (IP 65)
Certification	CPD, EN54-24	CPD, EN54-24	CE	CE
Color	White (RAL 9010), Charcoal Black (RAL 7021)	White (RAL 9010), Charcoal Black (RAL 7021)	White (RAL 9010), Charcoal Black (RAL 7021)	White (RAL 9010), Charcoal Black (RAL 7021)
Cutout Dimensions (diameter)				
Diameter				
Depth	180 mm (7.08 ")	180 mm (7.08 ")	117 mm (4.60 ")	140 mm (5.51 ")
Width	160 mm (6.29 ")	160 mm (6.29 ")	136 mm (5.35 ")	160 mm (6.30 ")
Height	274 mm (10.78 ")	405 mm (15.94 ")	205 mm (8.07 ")	250 mm (9.84 ")
Weight	3.88 kg (8.55 lb)	5.58 kg (12.30 lb)	1.9 kg (4.18 lb)	2.4 kg (5.29 lb)

LB20-PC40-4 / LB20-PC15-4	LB20-PC75-5 / LB20-PC30-5	LB20-PC60EW-5	LB20-PC90-8 / LB20-PC60-8	LB20-SW400	LP6-S
					6
4" Two-Way Surface- Mount Loudspeaker	5" Two-Way Surface- Mount Loudspeaker	5" Two-Way IP65 Surface-Mount Loudspeaker	8" Two-Way Surface- Mount Loudspeaker	Dual 10" Surface- Mount Subwoofer	2" Full-Range Pendant Loudspeaker
75 Hz - 20 kHz	60 Hz - 20 kHz	55 Hz - 20 kHz	50 Hz - 20 kHz	33 Hz - 500 Hz	150 Hz - 20 kHz
87 dB	90 dB	89 dB	90 dB	94 dB	84 dB
109 dB	115 dB	114 dB	116 dB	126 dB	102 dB
40/80/160 W	75/150/300 W	75/150/300 W	90/180/360 W	400/800/1600 W	15/30/60 W
8 Ω	8 Ω	8 Ω	8 Ω	Stereo 8 $\Omega/$ Mono 4 Ω	16 Ω
70 V: 15, 7.5, 3.7 W 100 V: 15, 7.5 W	70 V: 30, 15, 7.5, 3.75 W and 8 Ω 100 V: 30, 15, 7.5 W and 8 Ω	70 V: 60, 30, 15, 7.5 W and 8 Ω 100 V: 60, 30, 15 W and 8 Ω	70 V: 60, 30, 15, 7.5 W and 8 Ω 100 V: 60, 30, 15 W and 8 Ω	Optional Accessory	N/A
110 x 110°	90 x 90°	90 x 90°	90 x 90°	Omnidirectional	100 x 100°
0.75 inch (20 mm)	0.75 inch (20 mm)	0.75 inch (20 mm)	1 inch (25 mm)	N/A	N/A
4 inch (102 mm)	5.25 inch (133 mm)	5.25 inch (133 mm)	8 inch (203 mm)	Two 10 inch (254 mm)	2" (50 mm)
Indoor, Outdoor (IP54)	Indoor, Outdoor (IP54)	Indoor, Outdoor (IP65)	Indoor, Outdoor (IP54)	Indoor, Outdoor (IP54 (IP65 with included accessory))	Indoor
CE	CE	EN54-24, UL1480A, CE	CE	CE	UL1480A, CE
White (RAL 9003) Black (RAL 9004)	White (RAL 9003) Black (RAL 9004)	White (RAL 9003) Black (RAL 9004)	White (RAL 9003) Black (RAL 9004)	White (RAL 9003) Black (RAL 9004)	White (RAL 9003)
					113 mm (4.45")
118 mm (4.7")	151 mm (6.0")	148 mm (5.8")	223 mm (8.8")	491 mm (19.3")	
140 mm (5.5")	180 mm (7.1")	180 mm (7.1")	250 mm (9.8")	651 mm (25.6")	
193 mm (7.6")	255 mm (10.0")	255 mm (10.0")	390 mm (15.4")	356 mm (14.00")	201 mm (7.92")
1.5 kg (3.3 lb)	2.7 kg (5.9 lb)	3.2 kg (7.1 lb)	5.1 kg (11.3 lb)	17.9 kg (39.5 lb)	0.73 kg (1.6 lb)

Amplifiers

	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
Zones	1	1	2
Output Channel and Power	Single channel, 60 W, 120 W, 240 W (100 V/4 Ω)	Single channel 30 W, 60 W, 120 W (100 V/4 $\Omega)$	Single channel 120 W, 240 W (100 V / 8 Ω)
Frequency Response	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)	50 Hz - 20 kHz (+1/-3dB @-10 dB)
THD	<1 %	<1 %	<1 %
Dynamic Range	>93 dB	>93 dB	>93 dB
Audio Input/Output	4 × Microphone/Line 1 × Music	4 × Microphone/Line 3 × Music 1 × Emergency/Telephone	6 x Microphone/Line 3 × Music Call Station 1 × Emergency/Telephone
Control input/ Interface		1 x Wall Panel	1 x Wall Panel
Dimensions	100 × 430 × 270 mm (19 wide, 2RU high)	100 × 430 × 270 mm (19 wide, 2RU high)	100 × 430 × 270 mm (19 wide, 2RU high)
Weight	PLE-1ME060-EU 6.5 kg (14.33 lb) PLE-1ME120-EU 8.9 kg (19.62 lb) PLE-1ME240-EU 10.5 kg (23.15 lb)	PLE-1MA060-EU 5 kg (11.02 lb) PLE-1MA120-EU 8.5 kg (18.74 lb) PLE-1MA240-EU 10.5 kg (23.15 lb)	PLE-2MA120-EU 10.5 kg (23.15 lb) PLE-2MA240-EU 12.5 kg (27.56 lb)
Accessory Call Station	PLE-1CS Call Station	PLE-1CS Call Station	PLE-2CS Call Station
Accessory Control Panel		PLE-WP3S2Z-EU Wall Control Panel	PLE-WP3S2Z-EU Wall Control Panel

PLN-6AIO240 PLENA All-in-One	PLM-8M8 Audio Matrix Controller	Power Amplifier PLM-4P125 / PLM-4P220	PLE-SDT SD Player/Tuner BGM source
6	8	4	
Single channel 240 W (100 V/70 V/8 Ω)	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 Ω/4 Ω)	2
60 Hz - 18 kHz (+1/-3 dB @ -10 dB)	20 Hz - 20 kHz (+0/-3 dB)	65 Hz - 20 kHz (+0/-3 dB)	FM tuner: 50 Hz - 12 kHz SD/USB player: 50 Hz - 20 kHz
<1 %	<0.01 %	PLM-4P125 <0.1 % PLM-4P220 <0.03 %	FM Tuner: <1% SD/USB player : <0.1%
	>103 dB	PLM-4P125>101 db PLM-4P220>102 db	
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 × Microphone/Line 3 × Music Call station	4 × Microphone/Line	1 x SD card/USB input 1 x FM tuner
1 x Wall Panel	1 x Logic input 1 x Ethernet 1 x Wall Panel iOS device control	1 × Ethernet 1 x Logic input	
133 x 430 x 365 mm (19 wide, 3 U high)	45 × 440 × 358 mm (19 wide, 1RU high)	90 × 440 × 417 mm (19 wide, 2RU high)	44 × 444 × 250 mm (19 wide, 2RU high)
18 kg (39.69 lb)	6 kg (13.23 lb)	PLM-4P125 15 kg (33.07 lb) PLM-4P220 18 kg (39.69 lb)	3.6 kg (7.94 lb)
PLN-6CS Call Station	PLM-8CS Call Station, 8 zones		
PLN-4S6Z Wall panel with local input	PLM-WCP Wall Control Panel, 8 zones		

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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