Introduction

This document is intended for all users of L-Acoustics products. It gathers reference information about connecting enclosures to amplified controllers.

- Refer to Impedance load and output power (p.1) to identify the nominal impedance of an enclosure and calculate the **total impedance**, and identify the amplified controller **maximum output power**.
- Refer to Enclosure drive capacity per amplified controller (p.2) to identify **the type and quantity of enclosures** that can be driven by each amplified controller.
- Refer to Enclosure maximum SPL per amplified controller (p.4) to identify the **maximum SPL** delivered by an enclosure, depending on the preset and the amplified controller.
- Loudspeaker connection (p.5) contains **generic cabling schemes** with L-Acoustics speaker cables, categorized by type of enclosure.
- To prepare cables for a **fixed installation project**, refer to Recommendation for speaker cables (p.9).

For more information about enclosure presets and delay settings, refer to the **Preset Guide**.

Impedance load and output power

Most enclosures have a nominal impedance of 8 Ω. The exceptions are:

- 16 Ω:
  - K2 (HF section), Kiva II, V-DOSC (HF section), 5XT, X4i
- 4 Ω:
  - SB28, KS28, Syva Low, K1-SB, SB6i

total impedance

Nominal	number of enclosures/sections in parallel				
	2	**3**	**4**	**5**	**6**
16 Ω	8 Ω	5.3 Ω	4 Ω	3.2 Ω	2.7 Ω
8 Ω	4 Ω	2.7 Ω	—	—	—

4 Ω enclosures cannot be connected in parallel.*
Refer to Enclosure drive capacity per amplified controller (p.2) for the maximum number of enclosures/sections per output and in total on each amplified controller.

* with the exception of Syva Low and SB6i

amplified controllers maximum output power

Type		16 Ω load	8 Ω load	4 Ω load	2.7 Ω load
LA12X		4 × 700 W	4 × 1400 W	4 × 2600 W	4 × 3300 W
LA7.16(i)		16 × 580 W	16 × 920 W	16 × 1000 W	—
LA4X		4 × 500 W	4 × 1000 W		—
LA2Xi	**SE**	4 × 190 W	4 × 360 W	4 × 640 W	—
	BTL	2 × 710 W	2 × 1260 W	—	
	PBTL	—	—	1 × 2550 W	
LA1.16i	**SE**	16 × 40 W	16 × 80 W	16 × 120 W	—
	BTL	8 × 160 W	8 × 230 W	—	

CEA-2006/490A 1 kHz test method, all channels driven.

Enclosure drive capacity per amplified controller

Risks of output mute, global attenuation, or loss of audio quality.

Do not exceed the maximum number of connected enclosures per channel and in total.

Driving more enclosures than indicated can trigger the amplified controller protection systems.

For L-SMART compatible amplified controllers (LA1.16i and LA7.16(i)), values are given for nominal use, assuming that all channels are driven at full power. When sending the same signal to all outputs, never exceed the maximum numbers, regardless of the Power Budget values, otherwise the Fuse Protect algorithm may be triggered. For LA7.16(i), when powered by a 100 V power supply, reduce the number of enclosures in order not to exceed 75% of the power gauge.

For LA1.16i, the maximum number of connected enclosures in total may differ depending on the preset. Refer to Soundvision and LA Network Manager for Power Budget monitoring.

	LA1.16i		**LA2Xi**			**LA4X**	**LA7.16(i)**	**LA12X**
	per output* / total		**per output* / total**			**per output* / total**	**per output* / total**	**per output* / total**
	SE	**BTL**	**SE**	**BTL**	**PBTL**			
X4i	3 / 48	2 / 12	4 / 16	—		4 / 16	4 / 64	6 / 24
5XT	3 / 48	2 / 14	4 / 16	—		4 / 16	3 / 48	6 / 24
X6i	2 / 20	1 / 8	2 / 8	1 / 2	—	2 / 8	1 / 16	3 / 12
X8	2 / 32	1 / 8	2 / 8	1 / 2	—	2 / 8	1 / 16	3 / 12
X8i	2 / 30	1 / 8	2 / 8	1 / 2	—	2 / 8	1 / 16	3 / 12
X12	—	1 / 4	1 / 4	1 / 2	—	1 / 4	1 / 14	3 / 12
X15 HiQ	—		1 / 2	—		1 / 2	1 / 8	3 / 6
Soka	2 / 26	1 / 4	1 / 4	1 / 2	—	2 / 8	1 / 16	3 / 12
Syva	—		1 / 4	1 / 2	—	1 / 4	1 / 10	3 / 12
A10(i) Wide/Focus	—	1 / 4	2 / 8	1 / 2	—	2 / 8	1 / 16	3 / 12
A15(i) Wide/Focus	—		1 / 4	1 / 2	—	1 / 4	1 / 10	3 / 12
K1	—		—			—	—	2 / 2
K1-SB	—		—			—	—	1 / 4