IPX Series

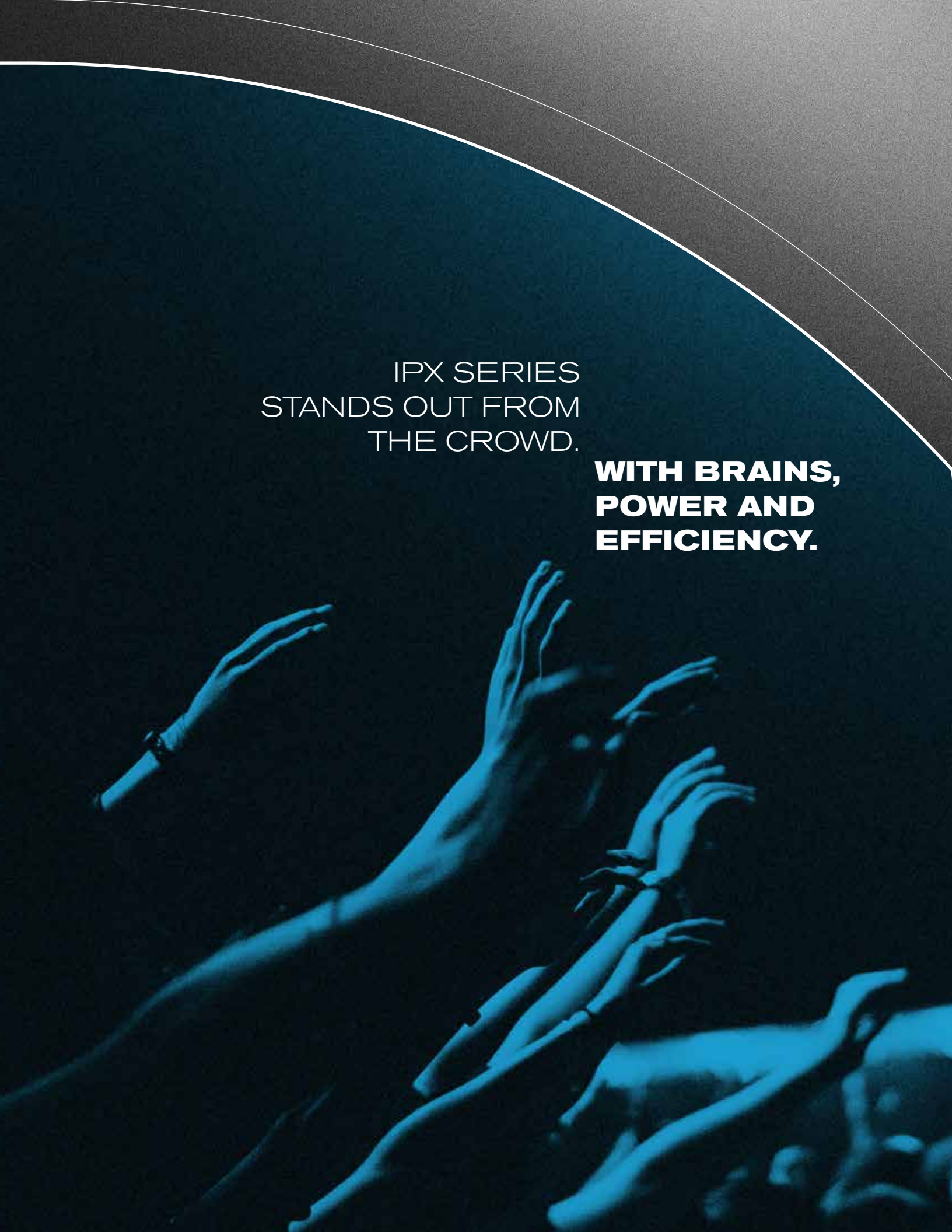
MULTI-CHANNEL POWER AMPLIFIERS

FIXED INSTALL APPLICATIONS

DYNACORD

IPX SERIES
STANDS OUT FROM
THE CROWD.

**WITH BRAINS,
POWER AND
EFFICIENCY.**



IPX Series

THE PINNACLE OF AMPLIFIER ENGINEERING

IPX series multi-channel power amplifiers mark the new, unprecedented standard for sound system amplification in mid to large-sized permanent installations. Our new high-performance amplifiers offer seemingly unlimited power and pristine audio quality. IPX series multi-channel power amplifiers are featuring OMNEO IP networking architecture and groundbreaking audio performance. They embody several proprietary amplifier technologies developed by Dynacord engineering, one of the most experienced R&D teams in the audio industry.

IPX series can cover a wide range of demanding fixed installation venues, from concert halls, art centres, theatres, and houses of worship to distributed sound systems in stadiums and entertainment centres. The new Eco Rail technology developed by Dynacord helps to reduce overall power consumption up to 50%, both protecting the environment and significantly lowering the total cost of ownership, while maintaining high-quality audio and operational safety at all times. As installers increasingly utilize existing networks in building infrastructure, relying on IP technology often results in faster system integrations and lower implementation costs – including reduced cabling – for substantial cost savings. The integrated OMNEO interface with a primary and secondary port allows the flawless use of 8 channels from a Dante audio network, while remote and supervision parameters run on OCA protocol (AES70), open for third-party integration. Redundancy options include glitch-free and RSTP to suit individual requirements and existing infrastructure.

OMNEO onboard

Dante™

OCA AES70 OPEN CONTROL ARCHITECTURE

models

HIGH POWER DENSITY

IPX series amplifiers represent the perfect mix of seemingly unlimited power with cutting edge intelligent FIR-drive DSP to give you the power and the ultimate performance for any demanding sound system requirements in permanent installations. Engineered and made in Germany, the IPX series power amplifiers comprise three 4-channel models and one 8-channel model, offering a power density of 5 kW, 10 kW and even 20 kW from a single amplifier with all channels driven.

MOST SOPHISTICATED DIGITAL SIGNAL PROCESSING AVAILABLE

The IPX series offers advanced 96 kHz high-resolution digital signal processing for the highest performance, internal analog-to-digital conversion with ultra-low latency, and a superior signal-to-noise ratio. The three DSP blocks are split into user-, array- and speaker processing controls, each featuring a wide range of EQ-, delay and level options to match a wide range of applications. Complete remote control and supervision is available via the powerful IRIS-Net software and allows the IPX series to be seamlessly integrated into both existing and new installations

ADVANCED POWER MANAGEMENT FOR REDUCED COSTS AND FLAWLESS PERFORMANCE – EVEN UNDER CHALLENGING CONDITIONS

The new Eco Rail technology developed by Dynacord helps to reduce overall power consumption up to 50%, both protecting the environment and significantly lowering the total cost of ownership, while maintaining high-quality audio and operational safety at all times. The fully DSP-controlled amplifier and power supply constantly monitors up to 280 parameters simultaneously to assure that even under challenging operating conditions such as mains power fluctuations, the IPX series continues to perform at highest possible level, rather than switching into a protect mode and stop operation.

HIGH INSTALLATION FLEXIBILITY

IPX series offers high flexibility for a variety of installation scenarios. This is ensured by several power drive options utilizing Dynacord's patented VLD technology as well as the newly developed parallel and parallel-bridged operation modes. VLD technology allows the available output power of e.g. 1,250 watts per channel to be used at either 4 or 8 Ohms, or via 70 V or 100 V lines in direct drive mode.

IPX5:4

4 x 1,250 W @ 4 Ω
(maximum output power per channel*)

IPX10:4

4 x 2,500 W @ 4 Ω
(maximum output power per channel*)

IPX10:8

8 x 1,250 W @ 4 Ω
(maximum output power per channel*)

IPX20:4

4 x 5,000 W @ 4 Ω
(maximum output power per channel*)

* Measured with all channels driven

technology

For over 70 years, Dynacord has designed and engineered professional audio systems – products that offer unparalleled performance and premium quality, the perfect balance of power and precision. Our industrial design combines finely tuned form with feature-rich functionality across every detail – clean lines and clean sound – and our dedication to durability is demonstrated in the industry's most rigorous product testing programs.

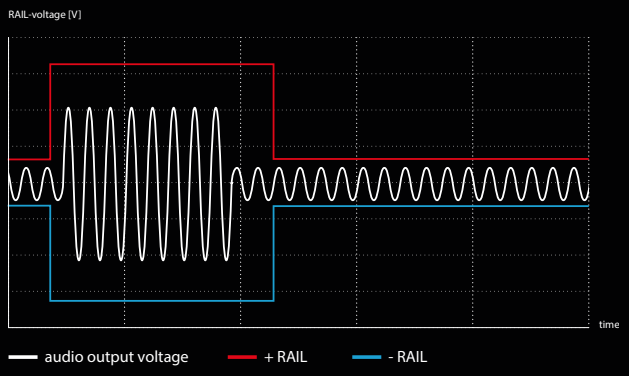
Our amplifier expertise and applied technologies will give our IPX series amplifiers ultimate protection from damage and ensure flawless operation - even under the most challenging conditions. In addition, our engineering technology also contributes to significantly reduce operation costs while maintaining the best audio quality. This is ensured and backed up by a series of new, sophisticated Dynacord technologies.

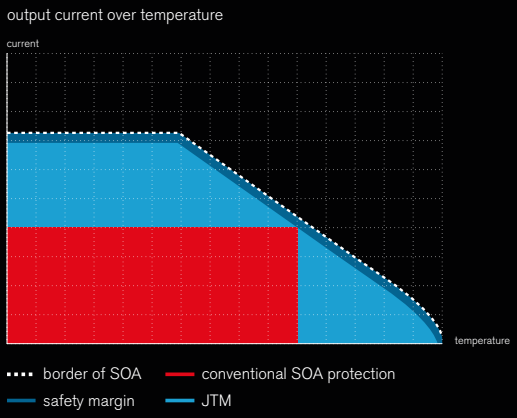
technology

ABOUT OMNEO

OMNEO is an architectural approach to connecting devices that need to exchange information such as audio content or device control. Built upon multiple technologies, including IP and open public standards, OMNEO supports the technologies of today – such as Audinate's Dante – while adopting the standards of tomorrow. OMNEO offers a professional-grade media networking solution that provides interoperability, unique features for easier installation, better performance, and greater scalability than any other IP offering on the market.

OMNEO



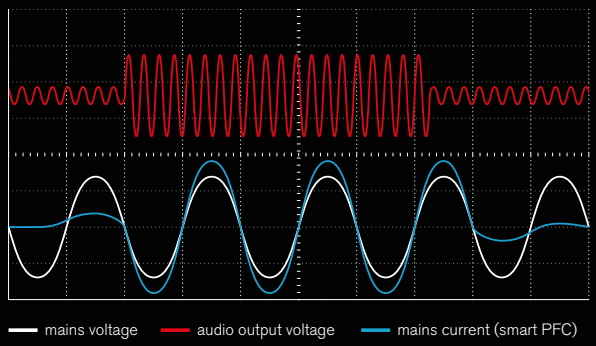


ECO RAIL TECHNOLOGY

- Reduces standby losses to a minimum
- All monitoring functions are maintained
- No transient currents or distortions during switching
- Fully automatized - no user interaction needed

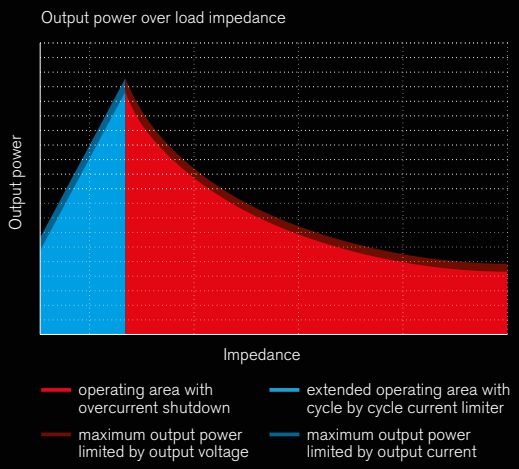
JTM - JUNCTION TEMPERATURE MODELLING

- Overheat component protection by constant temperature modelling
- Ensures maximum output power
- Provides highest operational reliability



SMART PFC - POWER FACTOR CORRECTION

- Maximizes output power and reduces idle power
- Complete digital monitoring and control
- Wide range input for maximum flexibility
- Highest reliability thanks to Dynacord's Protection Package

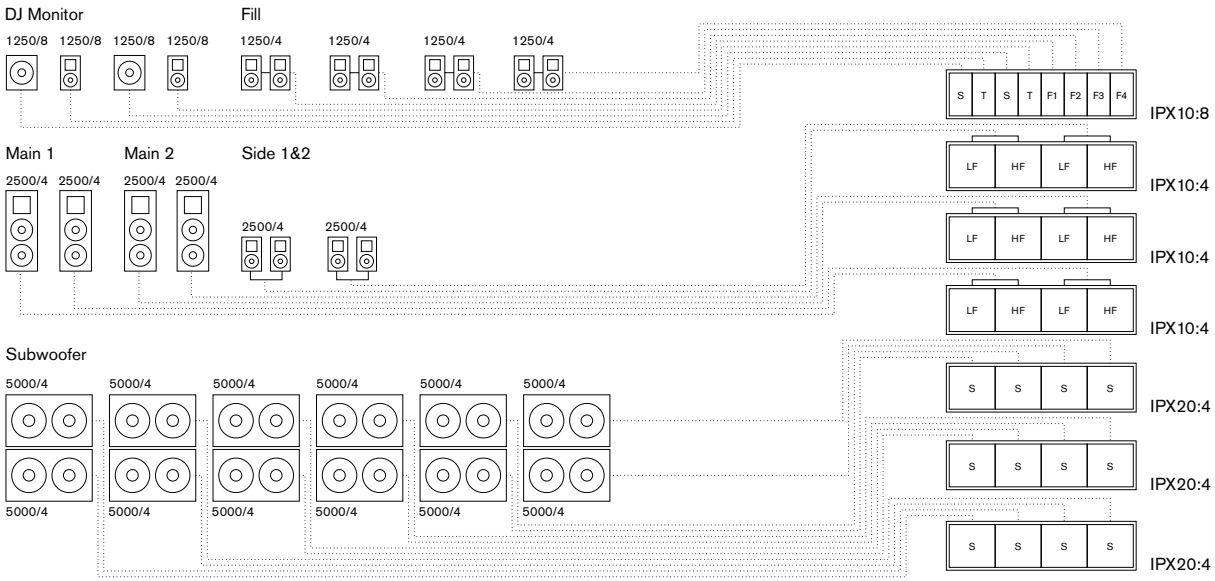


CYCLE BY CYCLE CURRENT LIMITER

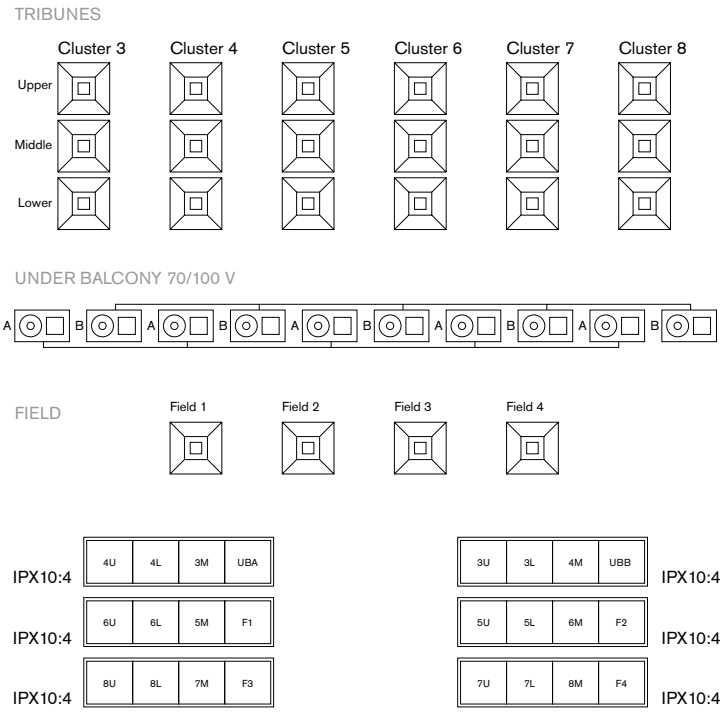
- Continue to make sound
- Maximizes reliability under all load conditions
- Able to drive low impedance

application

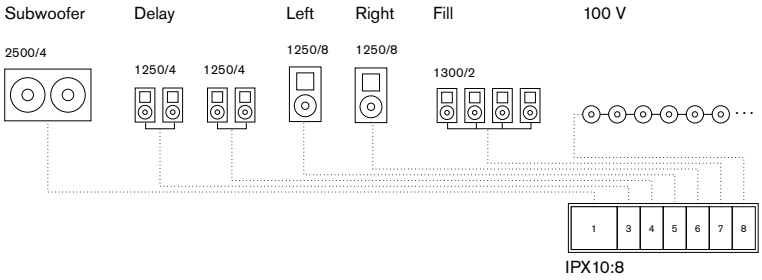
CLUB



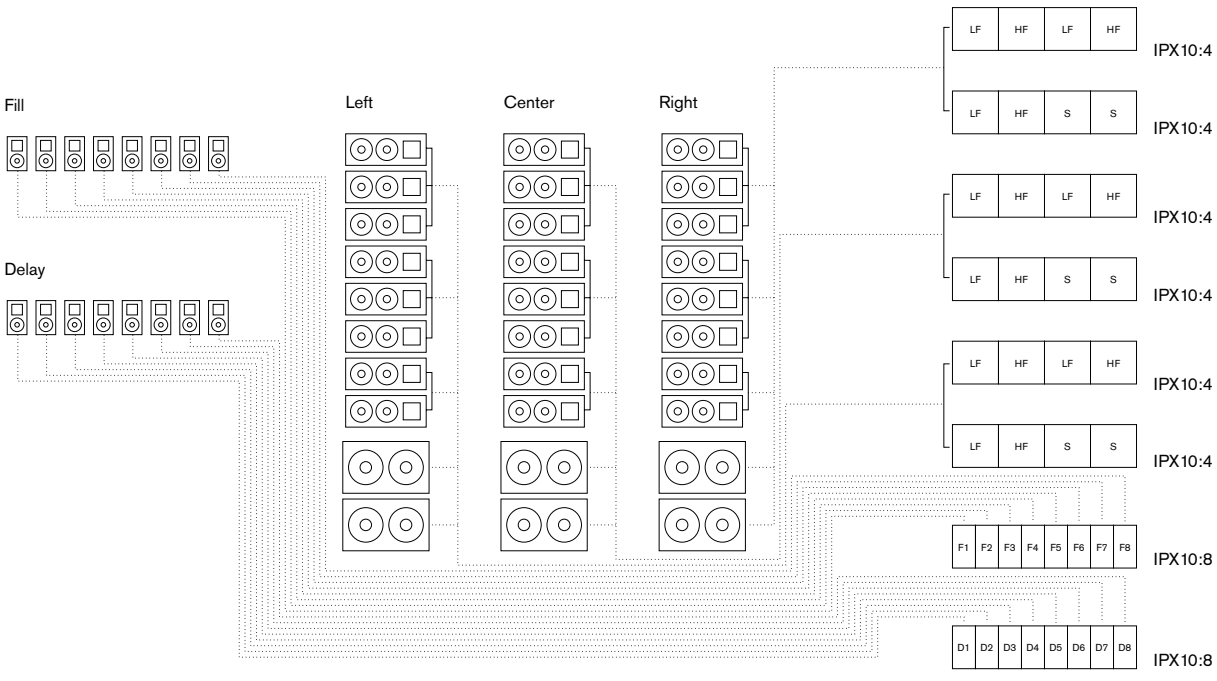
STADIUM



CITY HALL



PERFORMING ARTS CENTER



TECHNICAL SPECIFICATIONS

Amplifier model	IPX5:4				IPX10:4				IPX10:8				IPX20:4			
OUTPUT POWER																
Low-Z mode: Load Impedance	2 Ω	2.7 Ω	4 Ω	8 Ω	2 Ω	2.7 Ω	4 Ω	8 Ω	2 Ω	2.7 Ω	4 Ω	8 Ω	2 Ω	2.7 Ω	4 Ω	8 Ω
Maximum Output Power [1]																
Normal Mode, all channels driven	1300 W	1500 W	1250 W	1250 W	2600 W	3000 W	2500 W	1250 W	1300 W	1500 W	1250 W	1250 W	5200 W	6000 W	5000 W	2500W
Bridged	-	-	2600 W	2500 W	-	-	5200 W	5000 W	-	-	2600 W	2500 W	n.a.			
Parallel	2500 W	3000 W	2500 W	1250 W	5000 W	4000 W	2500 W	1250 W	2500 W	3000 W	2500 W	1250 W	10000 W	8000 W	5000 W	-
Parallel-Bridged	2500 W	6000 W	5000 W	5000 W	10400 W	12000 W	10000 W	5000 W	5200 W	6000 W	5000 W	5000 W	n.a.			
Direct Drive mode: Nominal Voltage	70 V	100 V	140 V [2]	200 V [2]	70 V	100 V	140 V [2]	200 V [2]	70 V	100 V	140 V [2]	200 V [2]	70 V	100 V	140 V	
Maximum Output Power [1]	1250 W	1250 W	2500 W	2500 W	2500 W	2500 W	5000 W	5000 W	1250 W	1250 W	2500 W	2500 W	3550 W	5000 W	5000 W	
Number of amplifier channels	4				4				8				4			
Maximum Output Voltage normal mode, per channel	150 V peak												210 V peak			
Maximum Output Current normal mode, per channel	41 A peak				53 A peak				41 A peak				84 A peak			
AMPLIFIER																
Voltage Gain																
Low-Z mode, ref. 1 kHz	32.0 dB, adjustable 20.0 - 44.0 dB															
Direct Drive mode	33.2 / 36.2 / 39.2 / 42.2 dB for 70 / 100 / 140 / 200 V															
Input Sensitivity																
Low-Z mode, ref. to Max. Output Voltage	10.7 dBu (2.66 V), adjustable -1.3 - 22.7 dBu												13.7 dBu (3.73 V), adjustable 1.7 - 25.7 dBu			
Direct Drive mode	6 dBu (1.55 V), fixed															
THD 3dB below max., AES17, 1kHz	< 0.05 %															
IMD-SMPTE 60 Hz, 7 kHz	< 0.05 %												< 0.15 %			
DIM100 3.15 kHz, 15 kHz	< 0.15 %															
Crosstalk ref. 1 kHz, 12 dB below Max., 8 Ω	< -80 dB															
Frequency Response ref. 1 kHz, analog in to speaker out	20 Hz to 20 kHz (±0.5 dB)												20 Hz to 20 kHz (±1 dB)			
Damping Factor 20 Hz to 200 Hz, 8 Ω	> 400															
Output Stage Topology	Class D, fixed frequency															
Signal to Noise Ratio Amplifier																
A-weighted, analog input	112 dB												115 dB			
A-weighted, digital input	115 dB												118 dB			
Output Noise																
A-weighted, analog input	< -70 dBu															
A-weighted, digital input	< -73 dBu															
DIGITAL SIGNAL PROCESSING																
Sampling rate	48 kHz / 96 kHz, OMNEO/Dante synchronized															
Signal Delay / Latency analog in to Speaker Out, 48 kHz / 96 kHz	0.70 ms / 0.53 ms															
Dante Network Latency	typ. 1.00 ms															
Signal Processing	32/40 bit, floating point															
User EQ	12 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Lo-ShelvQ, Hi-ShelvQ, Hi-Pass, Lo-Pass and Notch; 2 filters with additional asymmetric filter type															
User Delay	0 to 2000 ms per channel (units: µs, ms, s, cm, m, inches, feet)															
Array EQ	5 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Hi-Pass, Lo-ShelvQ, Hi-ShelvQ, Lo-Pass and All-Pass															
Array Delay	0 to 500 ms per channel (units: µs, ms, s, cm, m, inches, feet)															
Speaker EQ	10 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Hi-Pass, Lo-Pass and All-Pass															
Speaker X-Over	Hi-Pass and Lo-Pass per channel, 6/12/18/24/30/36/42/48 dB Bessel/Butterworth, 12/24/48 dB Linkwitz-Riley; Alignment Delay, 0 to 20 ms per channel															
Speaker FIR	up to 1025 taps, Linear Phase Filter, Linear Phase Brickwall X-Over															
Speaker Limiters	Peak Anticipation Limiter and RMS/TEMP Limiter per channel															
Other Functions	Source Selection and Mix, Level, Mute, Polarity, Sine and Noise Generator, Pilot Tone Generator and Detection, Level Meters, Impedance Measurement and Load Monitoring															

Amplifier model	IPX5:4	IPX10:4	IPX10:8	IPX20:4
DIGITAL SIGNAL PROCESSING				
Memory				
DSP Presets	5 Factory + 20 User			
Speaker-Pool Presets	30 Speaker Settings			
Source Supervision and Fallback	Pilot Tone supervision at Analog and OMNEO/Dante inputs, switchover to alternative Source Selection			
CONNECTIVITY				
Analog Audio Input / Thru				
Type	2 x 6-pin Euroblock, male		4 x 6-pin Euroblock, male	2 x 6-pin Euroblock, male
Maximum Input Level	+21 dBu			
Input Impedance, active balanced	20 kΩ			
Reference level equal to digital input	+21 dBu for 0 dBFS			
Network				
Type	2 x Neutrik etherCON			
General	1000base-T / 100base-TX, integrated switch			
Network Audio Inputs	8 channels, 48/96 kHz, OMNEO/Dante format			
Network Audio Outputs (Monitor)	2 channels, 48/96 kHz, OMNEO/Dante format			
Mains Input	1 x Neutrik powerCON-HC			
Speaker Output	1 x 8-pin Euroblock, 6mm, female		2 x 8-pin Euroblock, 6mm, female	1 x 8-pin Euroblock, 6mm, female
GPIO Control Port				
Type	1 x 8-pin Euroblock, male			
Ports and Operating Modes	3 x GPIO, switchable Analog In / Digital In / Digital Out			
Analog Input Range	0 V to +13 V, 40 kΩ input resistance			
Digital Input Limits	ON: < 1.5 V / OFF: > 2.0 V, internal Pull Up (10 kΩ)			
Digital Outputs	ON: Output switched to GND, max. 200 mA OFF: Open Collector (40 kΩ to GND)			
Reference Voltage Output	+10 V, max. 200 mA, supervised, short circuit protected			
READY/FAULT contact	galvanic isolated relay, max. 30 VDC / 500 mADC			
GENERAL				
User Interface				
Display	OLED 256 x 64			
Front panel indicators	4 x status LEDs (POWER, STANDBY, FAULT, OMNEO)			
Front panel operating elements	3 buttons (UP, ENTER, DOWN)			
Rear panel indicators	1 x status LED (STATUS)			
Rear panel operating elements	Mains Switch			
Power Requirements	100 V to 240 V, 50 Hz to 60 Hz AC			
Power Consumption				
Rated power consumption (see BTU table)	700 W	1200 W	1300 W	2250 W
1/8 Maximum Output Power at 4 Ω	900 W	1765 W	1780 W	2850 W
Idle Mode (no input signal)	75 W	80 W	105 W	110 W
Standby Mode	< 15 W	< 16 W	< 18 W	< 19 W
Power Supply Topology	Switching Mode Power Supply with digital controlled Power Factor Correction			
Protections	Audio Limiters, High Temperature, DC, HF, Short Circuit, Back-EMF, Peak Current Limiters, Inrush Current Limiters, Turn-on Delay, Mains Circuit Breaker Protection, Mains Over-/Undervoltage Protection			
Cooling	Front-to-rear, temperature controled fans, supervised			
Ambient Temperature Limits	+5 °C to +40 °C (+40 °F to +105 °F)			
IEC Protection Class	Class I (grounded)			
Electromagnetical Environment	E1, E2, E3			
Color	Black			
Dimensions, (W x H x D), mm	483 x 88.1 x 514			
Weight	14.3 kg (31.5 lb)	15.0 kg (33.0 lb)	16.8 kg (37.1 lb)	18.3 kg (40.3 lb)
Shipping Weight	16.5 kg (36.4 lb)	17.2 kg (37.8 lb)	19.1 kg (42.1 lb)	20.5 kg (45.1 lb)
Ordering Code	F.01U.329.709	F.01U.329.712	F.01U.329.715	F.01U.329.718

Amplifier at rated conditions, Low-Z Normal operation mode, all channels driven, 4 Ω loads, Analog input, 32 dB Gain, 48 kHz sample rate, unless otherwise specified.
[1] Test signal for max. output power according IHF-A-202 (Dynamic-Headroom, burst 1 kHz / 20 ms on / 480 ms off / low level -20 dB)
[2] Available in Bridged ration mode only.

Subject to change without prior notice.

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