

650-R2

Concert Series
Subwoofer



Features

High power

Extremely low distortion

Long-term reliability

Rugged

Applications

Road use or installations

Sound reinforcement

Concert, film, and theater

Live music clubs and discos

Bass instrument amplification

— 12
— 9
— 6
— 3
— 0
Inches

The 650-R2 Subwoofer extends the power bandwidth of Meyer Sound reinforcement systems to 30 Hz. Accurate and rugged, this powerful subwoofer consists of two 18-inch cone drivers capable of long excursion with extremely low distortion, set in a heavily braced 14 cubic foot vented enclosure of multiple-ply hardwood.

Fitted with handles and a pair of high-density rubber casters, the roadworthy cabinet is dimensioned in submultiples of 90", the U.S. internal truck width standard.

The 650-R2 requires a professional quality two-channel power amplifier capable of delivering 200 to 300 watts continuously into 8 ohms or 400 to 600 watts into a 4 ohm load (drivers connected in parallel), with a signal voltage gain of 20 dB (minimum) to 30 dB (maximum).



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M E Y E R S O U N D

650-R2 Specifications

Acoustical – 650-R2/B-2EX System

Frequency Response ¹	30-100 Hz \pm 4 dB
Maximum SPL ²	
Continuous	130 dB
Peak	135 dB
Acoustical Crossover Frequency	100 Hz

650-R2 Loudspeaker

Transducers	(2) MS-18 18-inch cone drivers, 8 ohms per driver
Enclosure	14 cu. ft. vented, multi-ply Finnish birch
Finish	Black textured, carpet or weather protected (optional)
Protective Grill	Perforated steel screen, charcoal-grey foam covering
Connector	EP-4 male, EP-5 male (Europe only)
Wheels	Two 3" diameter rubber tread rigid self-lube casters
Physical Dimensions	30" W x 45" H x 22½" D
Weight	176 lbs. (79.8 kg)

B-2EX Control Electronics Unit

Input Type	Balanced (active), 47k ohms
Output Type	Active push-pull, will drive 600 ohms
Maximum Input/Output Level	
Balanced	+26 dBu
Unbalanced	+20 dBu
Hum and Noise ³	-90 dBV
Dynamic Range	>110 dB
Sense Inputs	10K ohm true differential, opto-isolated
Driver Protection Circuitry	RMS limiter, switchable excursion limiter
Indicators	
Limit	Red LED
Excursion	Red LED
Sense	Green LED
Power	Green LED
Controls	
Front Panel	Input level control, AC on/off switch
Preset Panel	Safe switch, Crossover Bypass switch
Connectors	
Balanced Inputs/Output	3-pin XLR (A-3)
Sense Inputs	Banana jacks
Power	120/240V AC, 50/60 Hz (rear-panel switchable)
Physical Dimensions	19" W x 1¾" H x 7¾" D
Weight	8 lbs. (3.25 kg)

Note 1:
Measured 1 meter on-axis,
half-space conditions,
pink noise input, in third-
octave bands.

Note 2:
Loudspeaker driven by power
amplifier rated at 400W into
4 ohms, weighted noise
signal source.

Note 3:
"A" - weighted, unbalanced.

The B-2EX Control Electronics Unit



The 650-R2 operates as a system with the B-2EX Control Electronics Unit (one per channel). Optimized for use with Meyer Sound subwoofers, and pre-aligned at the factory, the B-2EX contains frequency response and phase response alignment circuitry, and Meyer Sound's exclusive SpeakerSense™ driver protection circuitry, incorporating RMS signal limiting and switchable excursion limiting.

A single-channel device operating at line level, the B-2EX is intended to be the final component in the signal chain before the power amplifier. It is connected in parallel with the input to the system being supplemented by the 650-R2, and incorporates a summing input for deriving a mono subwoofer signal from a stereo program.

The factory-calibrated SpeakerSense circuitry protects the 650-R2 loudspeaker components from damage due to overheating under high power conditions. This unique circuit continuously monitors the power applied to the 650-R2 drivers, and limits the B-2EX output when the safe operating limits of the drivers are exceeded. Until the onset of overload, the SpeakerSense circuitry has no effect on the signal.

Included in the SpeakerSense circuit is a Safe switch, which moves the limit point down by 6 dB and engages the excursion limiter. This has the effect of increasing the safety margin of the system, and is intended to be used when extended periods of overload are anticipated. In addition to these features, the B-2EX incorporates a Crossover switch which engages/disengages the lowpass rolloff of the subwoofer output. This feature may be used whenever it is desirable to operate the 650-R2 full-range as, for example, in instrument amplification.

The setup controls are located behind a cover plate on the B-2EX front panel, providing a means for securing the system installer's presets.

Meyer Sound Laboratories has devoted itself to designing, manufacturing, and refining components that deliver superb sonic reproduction. Every part of every component is designed and built to exacting specifications and undergoes rigorous, comprehensive testing in the laboratories.

Research remains an integral, driving force behind all production. Meyer strives for sound quality that is predictable and neutral over an extended lifetime and across an extended range.

The low frequency speaker system shall consist of two 18" low frequency cone loudspeakers front-mounted in a heavily braced hardwood-plywood bass-reflex direct-radiating enclosure, and a separate Control Electronics Unit.

The Control Electronics Unit shall contain a power supply capable of operating from a 120/240V AC, 50/60 Hz line, a master level control, an active crossover at 95 Hz, a switchable excursion limiter, an RMS limiter for speaker protection, and two active balanced summing inputs. The Control Electronics Unit shall meet the following criteria: total harmonic distortion less than 0.1%; "A" weighted noise level 110 dB below rated output of +26dBu.

The speaker system, its companion Control Electronics Unit, and a power amplifier rated at 400 watts into 4 ohms shall meet the following criteria: pressure

sensitivity, 101 dB SPL measured with 1 watt of pink noise, one meter on axis; frequency response, 30 Hz to 100 Hz plus or minus 4 dB measured with 1/3 octave pink noise, one meter on axis; output of 130 dB SPL one meter on axis with peaks of 135 dB SPL when driven with weighted noise. Total harmonic distortion shall be less than 3% at 130 dB SPL one meter on axis at 60 Hz.

Speaker enclosure dimensions are 45" H x 30" W x 22 1/2" D, weight 176 lbs (79.8 kg).

Control Electronics Unit dimensions are 19" W x 1 3/4" H x 7 3/4" D, weight 8 lbs (3.6 kg).

The speaker system shall be the Meyer Sound 650-R2.

The Control Electronics Unit shall be the Meyer Sound B-2EX.



**Sound
engineering
for the art
and science
of sound.**