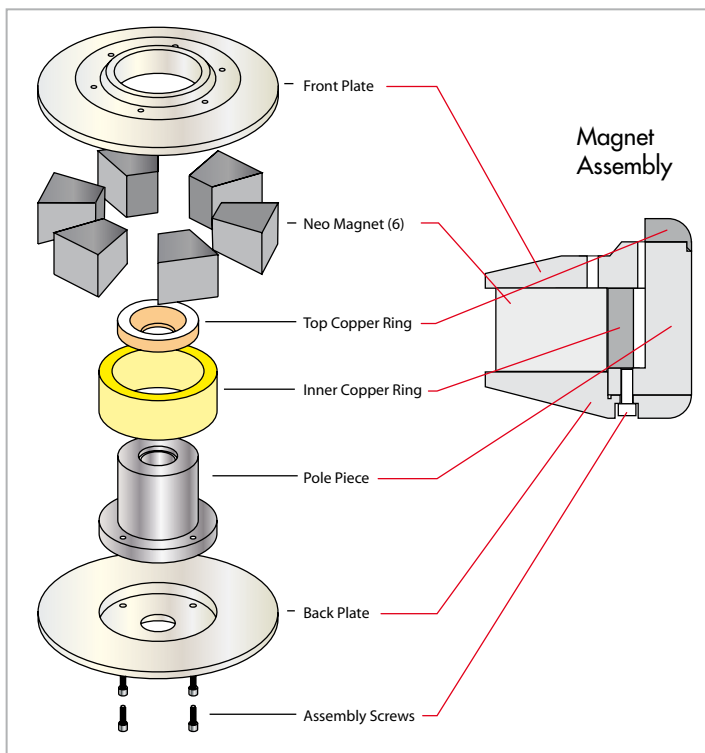


E15SPL-COMP WOOFER SPECIFICATION SHEET

EM-PHASER

WOOFER KEY FEATURES

- Proprietary Die Cast Aluminum Basket
- 216 oz. Multisegment ND40 Neodymium Magnet
- Glasfiber Composite Cone with Stitched Surround
- Broad High Excursion Polyether Surround
- Laminated Nomex™ Quad Spider
- 3 1/2" BASV Voice-Coil Former
- CCA Wire Double Voice-Coil
- Tinsel Leadwires Stitched to Spider
- Faraday & Kellog Copper Rings
- CNC Machined Front Pole Plate
- Extended T-Yoke with Center Vent Hole
- Push Terminals for Large Diameter Wire



■ CAST ALUMINUM BASKET

EMPASER's proprietary cast aluminum basket line is overbuilt to offer a truly solid and anti-resonant platform for the powerful magnet motor assembly. The deep draw basket design enables huge cone travel to both sides, due to increased distance between lower spider platform and basket bottom.

■ MULTISEGMENT ND40 NEODYMIUM MAGNET

A six segment Neodymium magnet array with a total weight of 216 oz. forms the drive motor of the E15NEO-COMP. The open structure of the magnet motor allows perfect cooling by increased airflow.

■ GLASFIBER COMPOSITE CONE

The E15NEO-COMP woofer deploys a composite glasfiber cone of highest stiffness and lowest weight, for extremely low cone flex at high SPL levels. The surround is stitched to the cone preventing any unnecessary strain on the joint, that bonds the surround to the cone.

■ NOMEX™ QUAD SPIDER

The E15NEO-COMP woofer deploys a 2 x 2 quad Nomex™ spider of large diameter for unlimited cone excursion. The quad spider provides perfect alignment of cone assembly with progressive deflection characteristics, to protect the surround from failure when the cone assembly is driven to its mech. max.

■ CCAW VOICE COIL

A 4-layer wound double voice coil made of CCA-wire with large winding height provides high thermal power handling and the desired cone excursion necessary to win contests. CCAW voice coils are lightweight and thus ideally suited being used on SPL competition woofers. Less weight of cone/voice coil assembly directly translates into higher efficiency.

■ 3 1/2" BASV VOICE COIL FORMER

The voice coil former is made of laminated black anodized aluminum, with additional mechanical reinforcement of the neck area above the coil windings.

■ FARADAY COPPER RINGS

The copper rings added on top and around the center pole piece act as Faraday & Kellog inductance break, stabilizing the magnetic field and effectively counteracting the rising voice-coil impedance at higher frequencies, while at the same time lowering total harmonic distortion.

TECHNICAL SPECIFICATIONS

Usable Frequency Response*	20 – 150 Hz
Continuous Power Handling*	2500 Wrms*
Peak Power Handling*	5 kW*
Nominal Impedance	2 x 2 Ohms
Voice Coil Diameter	3 1/2" / 88.6 mm
Voice Coil Winding Height	45 mm
Magnetic Gap Height	25 mm
Total Weight Magnet Assembly	216 oz.

*Exact performance data depending upon actual enclosure!

THIELE – SMALL PARAMETERS

Free-Air Resonance	(Fs)	28.0 Hz
DC Resistance	(Re)	2 x 1.74 Ohms
Electrical Damping	(Qes)	0.13
Mechanical Damping	(Qms)	2.24
Total Damping	(Qts)	0.12
Equivalent Volume of Compliance	(Vas)	78.8 l
Moving Mass incl. Air Load	(Mms)	352.4 g
Electrically Limited Cone Excursion	(Xmax)	20.0 mm (p-p)
Effective Cone Surface	(Sd)	780 cm ²
Volume Displacement of Cone	(Vd)	1560 cm ³
Voice Coil Inductance @ 1kHz	(Le)	2.00 mH (series)
Efficiency (2.00V)	(RefSPL)	93.5 dB/1W/1m

MOUNTING DIMENSIONS

Mounting Cutout Diameter	358 mm
Rear Mounting Clearance	249 mm

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EMPHASER

ENCLOSURE SUGGESTIONS

EMPHASER Laboratories recommend to use the E15NEO-COMP woofer in combination with ported or bandpass enclosures, to obtain highest possible bass output for competition.

Aiming at the peak frequency in a given vehicle to hit a new high-score at the SPL lane, is a truly difficult task, because the obtainable result will always depend on a set of different factors.

Experience how to tune a cabinet, where in the car to put it and what box principle or tuning frequency to be targeted best, will make this a hit or miss story. To master this equation, the ability to measure some of the important parameters is duly required. The stated enclosure suggestions below are only a starting point, that will need further testing and tuning in the vehicle to obtain best results.

Note 1:

The enclosure tuning info below is based on a cabinet construction, that must deploy a slot port with one cabinet wall being the adjacent wall of the port.

Note 2:

For the given ported and bandpass enclosures, the displacement of port must be added to the net volume. This depends on slot port construction and wall thickness of wood.

Note 3:

The port openings must remain unobstructed on both sides. Use the smallest dimension of the slot port as minimum distance between the end of the port to the closest wall inside the cabinet.

ENCLOSURE CONSTRUCTION / CABINET DAMPING / BREAK-IN INFO

→ Always use at least 22mm MDF or birch plywood to build the bass enclosure. Make sure all joints are well sealed, since a woofer can only reach optimum performance when mounted to an airtight cabinet!

→ Each enclosure should be damped according to its function principle: The inner walls of the ported enclosure should be lined out with egg crate PU-foam. The sealed chamber of the bandpass enclosure has to be lined with PU-foam, while the ported chamber remains free of any damping material.

→ Loudspeakers using spiders made of Nomex™ need extra time to break-in! Out of the box, the suspension system of the E15NEO-COMP woofer is extremely stiff. To achieve optimum low bass response, this woofer model will need at least two weeks of daily playing at higher playback levels. After that period of time, the suspension system has reached its equilibrium and will remain stable for the entire life-span of this product. The broken-in driver will play audibly smoother with a stronger bass reproduction as well as greater bass extension!

WARRANTY

EMPHASER Inc. Wyoming, Michigan U.S.A. warrants this E15NEO-COMP woofer to be free of defects in materials and workmanship for **two years** from the original date of purchase at retail, contingent upon installation being performed or approved by an authorized EMPHASER dealer. EMPHASER Inc. will at its own discretion repair or replace any mechanically defective E15NEO-COMP woofer at no charge, during the warranty period. This warranty is limited to the **original purchaser**.

Should your EMPHASER woofer require warranty service, please return it to the retailer from whom it was purchased.

Please do not send any product to EMPHASER Inc., Wyoming, Michigan U.S.A. Should you have difficulty in finding an authorized EMPHASER dealer or service center, details are available from the national distributor in the country of purchase.

Abuse of this loudspeaker is **not covered under warranty**.

The warranty **does NOT cover**:

- Woofers that have been used to participate in SPL contests
- Any freight damage
- Woofers damaged due to amplifier clipping or distortion
- Exposure of woofer to water, oil, solvents or excessive heat
- Repair attempts by unauthorized individuals
- Install damage (screwdriver holes)

PORTED ENCLOSURE			
Peak Frequency @	Enclosure Net Volume	Port Opening Area	Port Length
50hz	70 l	315 cm ²	33 cm
60hz	65 l	380 cm ²	33 cm
70hz	58 l	490 cm ²	33 cm
80hz	53 l	570 cm ²	33 cm

BANDPASS ENCLOSURE				
Peak Frequency @	Sealed Volume	Ported Volume	Port Opening Area	Port Length
50hz	15 l	92 l	380 cm ²	33 cm
60hz	15 l	72 l	380 cm ²	26 cm
70hz	18 l	70 l	490 cm ²	24 cm
80hz	18 l	65 l	490 cm ²	18 cm

Warning: The enclosure tuning suggestions are intended for SPL use only – i.e. you risk permanent damage of your woofer if music is fed, instead of test tones with a center frequency of 50 Hz or higher.