

Automotive Horn Product Specification

1. General Parameters

- **Voltage:** 12V/24V (DC)
 - **Current:** $\leq 6A$ (rated)
 - **Sound Pressure Level (SPL):**
 - **Standard Range:** 105–118 dB(A) (measured at 2 meters)
 - **High-Performance Models:** Up to 130–139 dB(A) (e.g., dual-tone horns)
 - **Frequency Range:**
 - **Low-Frequency Tone:** 310 ± 30 Hz
 - **High-Frequency Tone:** 420 ± 30 Hz
 - **Dual-Tone Models:** 530/680 Hz or 340/500 Hz (adjustable for distinct auditory signals)
 - **Power Handling:**
 - **RMS Power:** 40–50W (standard)
 - **Peak Power:** 210–300W (music/instantaneous)
 - **Impedance:** 4Ω (typical for electronic horns)
 - **Durability:** 50,000–500,000 actuations (lifespan varies by type: mechanical/electronic)
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2. Design & Construction

- **Types:**
 - **Electric Horns:**
 - Subtypes: Spiral (with resonator) or Dish-type (compact, no resonator)
 - Advantages: Low noise, energy-efficient, lightweight, easy maintenance .
 - **Air Horns:**
 - Requires compressed air system (common in trucks/buses) .
 - **Materials:**
 - **Diaphragm:** Polypropylene (lightweight, heat-resistant) or PEI (for high-frequency tweeters) .
 - **Frame:** Aluminum (heat dissipation) or ABS plastic (weatherproof) .
 - **Magnets:** Ferrite or Neodymium (enhanced electromagnetic efficiency) .
 - **Dimensions:**
 - **Compact Models:** 117×74×111 mm (for easy installation)
 - **Larger Models:** Up to 640 mm (truck-specific) .
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3. Functional Features

- **Dual-Tone Technology:** Combines high/low frequencies for clear, far-reaching sound .
 - **Weather Resistance:** IP-rated waterproofing (suitable for motorcycles, marine use) .
 - **Relay Compatibility:** Built-in relays to handle high current (prevents switch burnout) .
 - **Mounting:** Universal brackets or vehicle-specific kits (e.g., 16.5 cm/6.5-inch standard) .
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4. Compliance & Certifications

- **Standards:**
 - **GB 15742-2001:** Performance requirements and testing methods for automotive horns .
 - **QC/T 30-2004:** Technical specifications for electric horns .
 - **Safety:** CE, RoHS (electromagnetic compatibility and material safety) .
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5. Example Models

1. **Standard Electric Horn (12V):**
 - Frequency: 310/420 Hz $\pm 5\%$
 - SPL: 110 dB(A)
 - Current: 4.5A .
2. **High-Power Dual-Tone Horn (24V):**
 - Frequency: 530/680 Hz $\pm 5\%$
 - SPL: 139 dB(A) (measured at 10 cm)
 - Materials: Metal diaphragm + ABS housing .
3. **Premium Coaxial Horn (e.g., Philips CSP6911):**

- o Power: 50W RMS / 300W peak
- o Frequency Response: 28–32 kHz
- o Tweeter: PEI dome with neodymium magnet .