

# 10 cm Breitbandlautsprecher / 4" Fullrange Speakers

## FR 10 Art. No. 2020 – 4 Ω Art. No. 2021 – 8 Ω

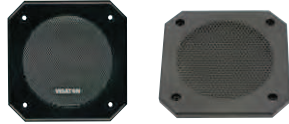


**10 cm (4") Breitbandlautsprecher** mit guten Tieftoneigenschaften, ausgeglichenem Frequenzgang und hohem Wirkungsgrad. Besonders geeignet als Einbaulautsprecher für die Musikwiedergabe sowie zur Bestückung von ELA-Zeilen. **Zubehör:** Schutzgitter (Art. No. 4642, 4640, 4670, 4744)

**Anwendungsmöglichkeiten:** ELA-Zeilen, Deckenlautsprecher in Schienenfahrzeugen und Bussen, Car-HiFi Einbaulautsprecher, Elektronische Musikinstrumente

**10 cm (4") fullrange speaker** with good bass reproduction, balanced frequency response and high efficiency. Especially suitable as built-in speaker for music reproduction and as driver for 100 V network column speakers. **Accessories:** Protective grille (Art. No. 4642, 4640, 4670, 4744)

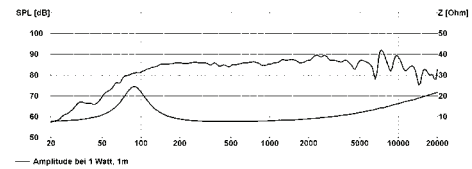
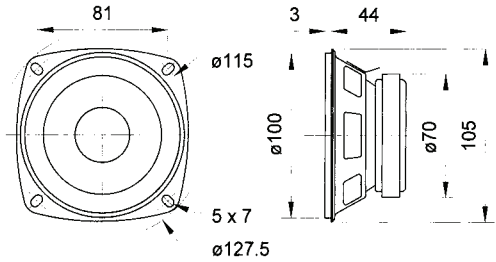
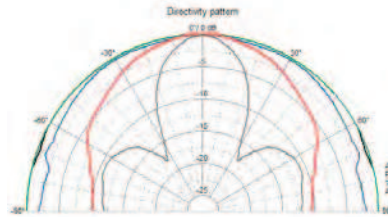
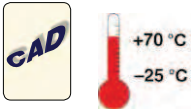
**Typical applications:** Network column speakers, Ceiling-mounted speakers in railway carriages and busses, Built-in car hi-fi speakers, Electronic musical instruments



Art. No. 4642 \*) Art. No. 4744 \*)



Art. No. 4640 \*) Art. No. 4670 \*)



## FR 10 HMP Art. No. 4880 – 4 Ω

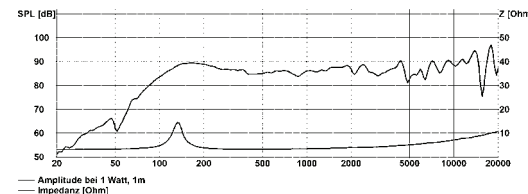
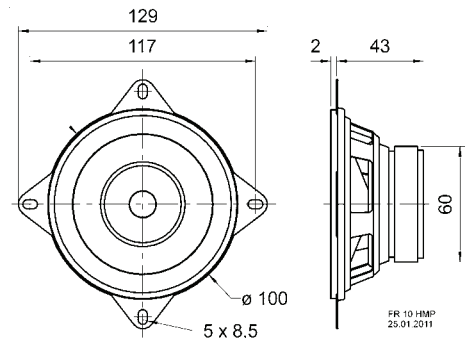
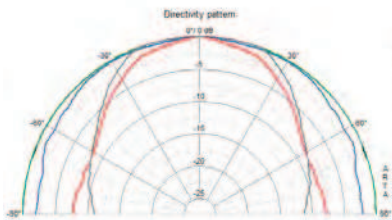


**10 cm (4") Breitbandlautsprecher** mit Polypropylenmembran, Hochtonkegel und Euro-Normkorb. Einfache Montage in Fahrzeugen mit Einbauorten für 10-cm-Lautsprecher.

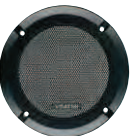
**Zubehör:** Schutzgitter (Art.-No. 4642, 4640, 4744)

**10 cm (4") full-range speaker** with polypropylene diaphragm, dual cone and European standard basket. Simple fitting in vehicles with cut-outs for 10 cm speakers.

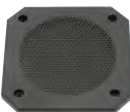
**Accessories:** Protective grille (Art.-No. 4642, 4640, 4744)



Art. No. 4642 \*)



Art. No. 4640 \*)



Art. No. 4744 \*)

|                              |                             | FR 10           | FR 10 HMP       |
|------------------------------|-----------------------------|-----------------|-----------------|
| Nenn-/Musikbelastbarkeit     | Rated/maximum power         | 30 W / 50 W     | 20 W/30 W       |
| Impedanz                     | Impedance                   | 4 Ω/8 Ω         | 4 Ω             |
| Übertragungsbereich (-10 dB) | Frequency response (-10 dB) | 80-20000 Hz     | 90 - 20000 Hz   |
| Mittlerer Schalldruckpegel   | Mean sound pressure level   | 86 dB (1 W/1 m) | 86 dB (1 W/1 m) |
| Grenzauslenkung $x_{mech}$   | Excursion limit $x_{mech}$  | ± 4 mm          | 4 mm            |
| Resonanzfrequenz             | Resonance frequency         | 92 Hz/88 Hz     | 120 Hz          |
| Obere Polplattenhöhe         | Height of front pole-plate  | 3 mm            | 2 mm            |
| Schwingspulendurchmesser     | Voice coil diameter         | 20 mm Ø         | 14 mm Ø         |
| Wickelhöhe                   | Height of winding           | 6 mm            | 5 mm            |
| Schallwandöffnung            | Cutout diameter             | 100 mm Ø        | 94 mm Ø         |
| Gewicht netto                | Net weight                  | 0,38 kg         | 0,268 kg        |

Weitere Daten Seiten 184-185 / for further data see pages 184-185  
 \*) Details und Zeichnungen siehe Seite 175-179 / Details and drawings see page 175-179