Model T27
Specification Number SP1032

Mellinax dome high frequency unit with extended frequency response and wide dispersion.

**Net weight:** 0.65 kg (1.43 lb)

**Nominal impedance:** 8Ω

**Nominal frequency range:** 1,000–40,000 Hz (see note 5)

**Power handling:**
Continuous sine wave 8 V RMS (see note 1)
Programme 100 W (see note 2)

**Magnet:**
Flux density 1.2 T (12,000 gauss)
Total flux 2.15 x 10^-7 Wb (21,500 Maxwells)

**Sensitivity:** Output, for 1 W pink noise input, at 1 metre on axis 80 dB SPL

**Voice coil:**
Diameter 20 mm (¾ in)
Inductance 50μH
Max continuous service temperature (30 min) 130°C
Max intermittent temperature (5 sec) 220°C
Thermal time constant 3.5 seconds
Thermal resistivity (temp rise per applied Watt) 19.6°C/W
Nominal DC Resistance, $R_{DC}$ 6.25Ω (tolerance ±10%)
Typical production spread 6.1±0.24Ω (see note 3)
Minimum impedance (in nominal frequency range) 7.1Ω at 2,300 Hz

**Diaphragm:**
Effective area, $S_d$ 4.52 cm² (0.7 sq in)
Effective moving mass, $M_d$ 0.37 gm

**Free air resonance frequency, $f_o$:**
Nominal 1,200 Hz (tolerance ±200 Hz)
Typical production spread 1,200±120 Hz (see note 3)

**Total mechanical resistance of suspension, $R_{mech}$:** 0.7 mech 0

**Suspension compliance, $C_{uns}$:** 5 x 10^-6 m/N
(5 x 10^-4 cm/dyne)

**Force factor, $Bl$:** 3.0 N/A

**Damping:**
Mechanical $Q_m$ 4.0
Electrical $Q_e$ 1.8
Total $Q_t$ 1.1 (see note 4)

**Notes**
1. **Continuous Power Rating ($P_c$).**
   
   \[ P_c = \frac{V^2}{R} \]
   
   $V$ is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion. (See Note 5)

2. The **programme rating of a unit** is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure.
   The **programme rating of any system** is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.

3. "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

   \[ Q_u = \frac{2\pi f_o M_0}{R_{mech}} \]
   \[ Q_e = \frac{2\pi f_o M_0}{(Bl)^2/R_{DC}} \]
   \[ Q_t = \frac{1}{Q_u} + \frac{1}{Q_e} \]

4. Minimum crossover frequency 3,000 Hz, filter cut-off slope at least 18 dB per octave.
**T33·A**

**Specification Number SP1074**

Dome high frequency unit with extended frequency response and wide dispersion.

**Net weight:** 0.55 kg

**Nominal impedance:** 8 ohms

**Nominal frequency range:** 3,000-20,000 Hz (see note 3)

**Power handling:**
- Continuous sine wave 9 V RMS (see note 1)
- Programme 100 W (see note 2)

**Magnet:**
- Flux density 1.2 T (12,000 gauss)
- Total flux 2.9 x 10⁻⁶ Wb (29,000 Maxwells)

**Voice Coil:**
- Diameter 25.4 mm

**Max continuous service temperature (30 min) 120°C**

**Max intermittent temperature (5 sec) 200°C**

**Thermal time constant 3.5 seconds**

**Nominal DC Resistance, R_{DC}** (tolerance 5.6-6.4 ohms)

**Minimum impedance (in normal frequency range) 7.1 ohms at 3,000 Hz**

**Diaphragm:**
- Effective area, S₀ 6.29 cm²
- Effective moving mass, M₀ 0.36 g

**Free air resonance frequency, f₀:**
- Nominal 950 Hz ± 200 Hz

**Total mechanical resistance of suspension, R_{US}:**
- 0.5 mech ohms

**Suspension compliance, C_{us}:** 7.8 x 10⁻⁶ m²N⁻¹

**Force factor, Bl:** 3.5 NA⁻¹

**Damping:**
- Mechanical Qₘ 4.39
- Electrical Qₑ 1.04
- Total Qₜ 0.84 (see note 4)

**Notes**

1. **Continuous Power Rating (Pₚ):**
   \[ P_c = \frac{V^2}{R} \]
   
   V is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustical loading.

2. The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure. The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on the normal programme over an extended period of time.

3. "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

   \[ Q_M = \frac{2\pi f_o M_B}{R_{US}} \]
   \[ Q_E = \frac{2\pi f_o M_B}{(Bl)^2/R_{DC}} \]

   \[ Q_T = \frac{1}{Q_M} + \frac{1}{Q_E} + \frac{1}{Q_I} \]

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Model T52
Specification Number SP1049

Melinex dome high frequency unit with extended frequency response and wide dispersion.

**Net weight:** 0.73 kg (1.6 lb)

**Nominal impedance:** 8 Ω

**Nominal frequency range:** 800-20,000 Hz (see note 5)

**Power handling:**
Continuous sine wave 10 V RMS (see note 1)
Programme 100 W (see note 2)

**Magnet:**
Flux density 1.0 T (10,000 gauss)
Total flux 5.0 x 10⁻⁴ Wb (50,000 Maxwells)

**Sensitivity:** Output, for 1 W pink noise input, at 1 metre on axis 84 dB SPL

**Voice coil:**
Diameter 39mm (1.5 in)
Inductance 85 μH
Max continuous service temperature (30 min) 130°C
Max intermittent temperature (5 sec) 220°C
Thermal time constant 3.5 seconds
Thermal resistivity (temp rise per applied Watt) 4.0°C/W
Nominal DC Resistance, RDC 6.60 (tolerance ± 5%)
Typical production spread 6.7 ± 0.2Ω (see note 3)
Minimum impedance (in nominal frequency range) 7.8Ω at 2,350 Hz

**Diaphragm:**
Effective area, S0 16.6 cm² (2.6 sq in)
Effective moving mass, M0 0.92 gm

**Free air resonance frequency, f0:**
Nominal 850 Hz (tolerance ± 70 Hz)
Typical production spread 620 ± 20 Hz (see note 3)

**Total mechanical resistance of suspension, RWS:**
1.2 mech Ω

**Suspension compliance, CWS:** 8.2 x 10⁻⁵ mN
(8.2 x 10⁻⁴ cm/dyne)

**Force factor, Bl:** 4.5 N/A

**Damping:**
Mechanical Qm 2.8
Electrical Qe 1.59
Total Qt 1.01 (see note 4)

**Notes**

1. Continuous Power Rating (Pc).

\[ Pc = \frac{V^2}{R} \]

V is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion. (See Note 5)

2. The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure.

The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.

3. “Typical production spread” is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

4. \[ Qm = \frac{2\pi f_0 M_D}{R_{MS}} \]

\[ Qe = \frac{2\pi f_0 M_D}{(Bl)^2R_{DC}} \]

\[ Q_t = Q_m + Q_e \]

5. Minimum crossover frequency 3,000 Hz, filter cut-off slope at least 18 dB per octave.
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B110-A

Specification Number SP1003

Compact, long throw bass/mid range unit, suitable for use in either a compact full range system, or as a specialised mid range unit in a multi-way system.

- **Net weight:** 1.13 kg (2.5 lb)
- **Nominal impedance:** 8Ω
- **Nominal frequency range:** 55-3,500 Hz

**Typical enclosure volumes:**
- Totally enclosed box 5-10 litres (0.2-0.4 cu ft)
- MF enclosure 4 litres (0.15 cu ft)

**Power handling:**
- Continuous sine wave 15 V RMS (see note 1)
- Programme full range 30 W (see note 2)
- Programme mid range only 80 W (see note 2)

**Magnet:**
- Flux density 1.0 T (11,000 gauss)
- Total flux 5.8 x 10⁻⁶ Wb (58,000 Maxwells)

**Sensitivity:** Pink noise input for 96 dB SPL at 1 metre on axis 12.5 V RMS

**Voice coil:**
- Diameter 26 mm (1 in)
- Inducance 0.45 mH

**Diaphragm:**
- Effective area, $S_o$ 92 cm² (14 sq in)
- Effective moving mass, $M_o$ 10.5 gm (0.37 oz)
- Max linear excursion, $X_o$ 6 mm peak-peak (½ in)
- Max damage limited excursion 12 mm peak-peak (⅓ in)

**Free air resonance frequency, $f_o$:**
- Nominal 35 Hz (tolerance ±5 Hz)
- Typical production spread 38.0 - 2.0 Hz (see note 3)

**Total mechanical resistance of suspension, $R_{ms}$:**
- 0.34 mech Ω

**Suspension compliance, $C_{ms}$:**
- 2.0 x 10⁻⁶ m/N
- (2.0 x 10⁻⁶ cm/dyne)

**Equivalent volume of compliance, $V_{eq}$:**
- 23.6 litres
- (1,440 cu in)

**Force factor, $B_l$:**
- 7.1 N/A

**Damping:**
- Mechanical $Q_m$ 6.7
- Electrical $Q_e$ 0.33
- Total $Q$ 0.31 (see note 4)

**Notes**
1. **Continuous Power Rating (Pc).**
   \[ P_c = \frac{V^2}{R} \]
   $V$ is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustic loading.

2. The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure. The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.

3. "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

4. **Q factor:**
   \[ Q = \frac{2\pi f_o M_o}{R_{ms}} \]
   \[ Q_e = \frac{2\pi f_o M_o}{(B_l)^2 R_{dcl}} \]
   \[ Q_m = \frac{Q_l}{Q_m} \]

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**B110•B**

**Specification Number SP1057**

Compact, long throw bass/mid range unit, suitable for use in either a compact full range system, or as a specialised mid range unit in a multi-way system.

**Net weight:** 1.13 kg (2.5 lb)
**Nominal impedance:** 8Ω
**Nominal frequency range:** 55-3,500 Hz

**Typical enclosure volumes:**
- Totally enclosed box 5-10 litres (0.2-0.4 cu ft)
- MF enclosure 4 litres (0.15 cu ft)

**Power handling:**
- Continuous sine wave 28 V RMS (see note 1)
- Programme full range 50 W (see note 2)
- Programme mid range only 150 W (see note 2)

**Magnet:**
- Flux density 1.0 T (11,000 gauss)
- Total flux $5.8 \times 10^{-4}$ Wb (58,000 Maxwells)

**Sensitivity:** Pink noise input for 96 dB SPL at 1 metre on axis 11.2 V RMS

**Voice coil:**
- Diameter 26 mm (1 in)
- Inductance 0.45 mH
- Max continuous service temperature (30 min) 250°C
- Max intermittent temperature (5 sec) 340°C
- Thermal time constant 11 seconds
- Thermal resistivity (temp rise per applied Watt) 6.2 °C/W

**Nominal DC Resistance, $P_{DC}$:** 7.1 Ω (tolerance ±10%)

**Typical production spread:** 6.7 ± 0.20 (see note 3)

**Minimum impedance (in nominal frequency range):**
- 7.8Ω at 260 Hz

**Diaphragm:**
- Effective area, $S_e$ 92 cm² (14 sq in)
- Effective moving mass, $M_o$ 9.8 gm
- Max linear excursion, $X_e$ 6 mm peak-peak (1 in)
- Max damage limited excursion 12 mm peak-peak (1 in)

**Free air resonance frequency, $f_r$:**
- Nominal 37 Hz (tolerance ±5 Hz)
- Typical production spread 38.0-2.0 Hz (see note 3)

**Total mechanical resistance of suspension, $R_{MS}$:**
- 1.0 mω

**Suspension compliance, $C_{MS}$:** $1.8 \times 10^{-3}$ mN
- (1.8 x 10⁻³ cm dynes)

**Equivalent volume of compliance, $V_{eq}$:** 23.6 litres
- (1.440 cu in)

**Force factor, BF:** 7.1 N/A

**Damping:**
- Mechanical $Q_u$ 2.44
- Electrical $Q_e$ 0.38
- Total $Q$, 0.33 (see note 4)

**Notes**

1. **Continuous Power Rating (Pc).**
   \[
   P_{C} = \frac{V^2}{R}
   \]
   $V$ is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustic loading.

2. The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure.
   The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactory operated on normal programme over an extended period of time.

3. "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

4. $Q_u = \frac{2\pi f_b M_o}{R_{MS}}$
   $Q_e = \frac{2\pi f_b M_o}{(Bf)^2 R_{DC}}$

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B139B
Specification Number SP1044

Low frequency unit with foil-stressed expanded plastic diaphragm and highly compliant surround, suitable for totally enclosed box, reflex, transmission line, horn and other specialised low frequency applications.

Net weight: 3.05 kg (0.66 lb)
Nominal impedance: 8Ω
Nominal frequency range: 20-1000 Hz
Typical enclosure volumes:
Totally enclosed box 30-40 litres (1-2 cu ft)
Reflex 60-140 litres (2-5 cu ft)
Power handling:
Continuous sine wave 20 V RMS (see note 1)
Programme 100 W (see note 2)
Magnet:
Flux density 0.85 T (8,500 gauss)
Total flux 1.11 x 10^-7 Wb (111,000 Maxwells)
Sensitivity: Pink noise input for 96 dB SPL at 1 metre on axis 11 V RMS
Voice coil:
Diameter 55 mm (2 in)
Inductance 0.56 mH
Max continuous service temperature (30 min) 180°C
Max intermittent temperature (5 sec) 250°C
Thermal time constant 16 seconds
Thermal resistivity (temp rise per applied Watt) 4.5°C/W
Nominal DC Resistance, R_{DC} 6.6Ω (tolerance ± 10%)
Typical production spread 6.2 ± 0.140 (see note 3)
Minimum impedance (in nominal frequency range) 6.7Ω at 160 Hz
Diaphragm:
Effective area, S_{E} 354 cm² (55 sq in)
Effective moving mass, M_{D} 43.5 gm (1.53 oz)
Max linear excursion, X_{D} 6 mm peak-peak (¾ in)
Max damage limited excursion 12 mm peak-peak (¾ in)
Free air resonance frequency, f_{T}:
Nominal 25.0 Hz (tolerance ± 5 Hz)
Typical production spread 25.0 ± 2.4 Hz (see note 3)
Total mechanical resistance of suspension, R_{MS}:
1.24 mech Ω
Suspension compliance, C_{MS}:
9.3 x 10^-4 m/N (9.3 x 10^-7 cm/dyne)
Equivalent volume of compliance, V_{AS}:
164 litres (9,990 cu in)
Force factor, B_{L}:
12.3 N/A
Damping:
Mechanical Q_{M} 5.5
Electrical Q_{e} 0.4
Total Q, 0.37 (see note 4)

Notes
1 Continuous Power Rating (P_{C}).
   \[ P_{C} = \frac{V^2}{R} \]
   V is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustic loading.
2 The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure. The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.
3 "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.
4 \[ Q_{M} = \frac{2 \pi f_{0} M_{D}}{R_{MS}} \]
   \[ Q_{e} = \frac{2 \pi f_{0} M_{D}}{(B_{L})^2/R_{DC}} \]
   \[ Q_{T} = \frac{1}{Q_{M}} + \frac{1}{Q_{e}} \]

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B200•A
Specification Number SP1014

Low/mid range unit with rubber modified polystyrene diaphragm, highly compliant suspension, and long throw voice coil assembly.
Suitable for use with totally enclosed boxes.

Net weight: 1.47 kg (3.24 lb)
Nominal impedance: 8Ω
Nominal frequency range: 25-3,500 Hz
Typical enclosure volumes: Totally enclosed baffle 20-30 litres (1-1 cu ft)
Power handling:
Continuous sine wave 15 V RMS (see note 1)
Programme 50 W (see note 2)
Magnet:
Flux density 1.1 T (11,000 gauss)
Total flux 5.8 x 10^-4 Wb (58,000 Maxwells)
Sensitivity: Pink noise input for 96 dB SPL at 1 metre on axis 10 V RMS
Voice coil:
Diameter 26 mm (1 in)
Inductance 0.42 mH
Max continuous service temperature (30 min) 180°C
Max intermittent temperature (5 sec) 250°C
Thermal time constant 4 seconds
Thermal resistivity (temp rise per applied Watt) 7°C/W
Nominal DC Resistance, RDC 7.1Ω (tolerance ±10%)
Typical production spread 6.7 ± 0.2Ω (see note 3)
Minimum impedance (in nominal frequency range) 7.4Ω at 160 Hz
Diaphragm:
Effective area, S0 232 cm² (36 sq in)
Effective moving mass, M0 24.0 gm (0.84 oz)
Max linear excursion, X0 6 mm peak-peak (1 in)
Max damage limited excursion 12 mm peak-peak (1 in)
Free air resonance frequency, f0:
Nominal 25 Hz (tolerance ±5 Hz)
Typical production spread 24.7 ± 1.0 Hz (see note 3)
Total mechanical resistance of suspension, Rms:
0.8 mohm Ω
Suspension compliance, Cms: 1.78 x 10^-2 m/N
(1.78 x 10^-4 cm/dyne)
Equivalent volume of compliance, Vms: 131.5 litres
(8,000 cu in)
Force factor, Bl: 7.1 N/A
Damping:
Mechanical QV 4.7
Electrical Qf 0.57
Total Qf 0.51 (see note 4)

Notes
1 Continuous Power Rating (Pc).
Pc = \frac{V^2}{R}
V is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustic loading.

2 The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended driving network and enclosure.

The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.

3 "Typical production spread" is derived from statistical analysis of a large number of units, and is calculated to include 95% of all units.

4 Qm = \frac{2n f s M_0}{R_{ms}} Qf = \frac{2n f s M_0}{(Bl)^2/R_{dc}} \frac{1}{Q_f} = \frac{1}{Q_m} + \frac{1}{Q_e}
Model B200
Specification Number SP1054

Low/mid range unit with visco-elastic damped
tonearm diaphragm and high temperature coil
assembly, suitable for use where low distortion and
high power handling are required.

Net weight: 2.72 kg (6 lb)
Nominal impedance: 8Ω
Nominal frequency range: 25-3,500 Hz
Typical enclosure volumes:
- Totally enclosed box 20-25 litres (7-1 cu ft)
- Reflex 40-50 litres (1-1½ cu ft)
Power handling:
Continuous sine wave 28 V RMS (see note 1)
Programme 100 W (see note 2)
Magnet:
- Flux density 1.35 T (13,500 gauss)
- Total flux 0.87 x 10^-4 Wb (87.700 Maxwells)
Sensitivity: Pink noise input for 96 dB SPL at
1 metre on axis 6.4 V RMS
Voice coil:
- Diameter 32.6 mm (1½ in)
- Inductance 0.45 mH
- Max continuous service temperature (30 min) 250°C
- Max intermittent temperature (5 sec) 340°C
- Thermal time constant 12.5 seconds
- Thermal resistivity (temp rise per applied Watt) 6°C/W
- Nominal DC Resistance, RDC 7.00 (tolerance ±5%)
- Typical production spread 6.9 ± 0.10 (see note 3)
- Minimum impedance (in nominal frequency range)
  7.1Ω at 190 Hz
Diaphragm:
- Effective area, Sd 232 cm² (36 sq in)
- Effective moving mass, Md 21.3 gm
- Max linear excursion, X 6 mm peak-peak (0.25 in)
- Max damage limited excursion 20 mm peak-peak (0.8 in)
Free air resonance frequency, f0:
- Nominal 25 Hz (tolerance ±5 Hz)
- Typical production spread 24 ± 2.2 Hz (see note 3)

Total mechanical resistance of suspension, Rmech:
0.7 mech Ω
Suspension compliance, Cmech:
2.2 x 10^-4 m/N
(2.2 x 10^4 cm/dyne)
Equivalent volume of compliance, Vmech:
130 litres
(7,930 cu in)
Force factor, Bi:
10.4 N/A
Damping:
Mechanical Qmech 3.27
Electrical Qe 0.25
Total Q 0.23 (see note 4)

Notes
1 Continuous Power Rating (Pc).
   \[ P_c = \frac{V^2}{R} \]
   V is the RMS voltage which can be applied to the
   unit continuously without thermal overload of
   the voice coil. At low frequencies the continuous
   power rating of the speaker may be reduced
   because of limitations imposed on diaphragm
   excursion by the acoustic loading.
2 The programme rating of a unit is equal to the
   maximum programme rating of any system with
   which the unit may be safely used in conjunction
   with the recommended dividing network and
   enclosure.
   The programme rating of any system is the
   undistorted power output of an amplifier with
   which the system may be satisfactorily operated
   on normal programme over an extended period
   of time.
3 "Typical production spread" is derived from
   statistical analysis of a large number of units, and
   is calculated to include 95% of all units.
4 \[ Q_m = \frac{2\pi f_m M_d}{R_{ms}} \]
   \[ Q_e = \frac{2\pi f_e M_d}{(Bi)^2/R_{dc}} \]
   \[ Q = \frac{1}{Q_m} + \frac{1}{Q_e} \]
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**B300-B**

**Specification Number SP1071**

Low frequency unit with visco-elastic damped Bextreme diaphragm and high temperature coil assembly, suitable for use where low distortion and high power handling are required.

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**Net weight:** 3.75 kg (8 lb 4 oz)

**Nominal impedance:** 8 ohms

**Nominal frequency range:** 25-2,000 Hz

**Typical enclosure volumes:**
- Totally enclosed box 65-75 litres
- Reflex 80-130 litres

**Power handling:**
- Continuous sine wave 35 V RMS (see note 1)
- Programme 200 W (see note 2)

**Magnet:**
- Flux density 1.02 T (10,200 gauss)
- Total flux 1.08 mWb (108 k Maxweills)

**Voice coil:**
- Nominal diameter 52 mm
- Nominal DC resistance, $R_{dc}$ 6.9 ohms (tolerance ± 5%)
- Minimum impedance 7.8 ohms at 120 Hz (in nominal frequency range)
- Max continuous service temperature (30 min) 250°C
- Max intermittent temperature (5 sec) 340°C

**Diaphragm:**
- Effective area, $S_o$ 520 cm²
- Effective moving mass, $M_o$ 73 gm
- Max linear excursion, $X_o$ 12 mm peak-peak
- Max damage-limited excursion 25 mm peak-peak

**Free air resonant frequency, $f_o$:**
- Nominal 23 Hz (tolerance ± 5 Hz)

**Total mechanical resistance of suspension, $R_{ms}$:**
- 2.0 mech ohms

**Suspension compliance, $C_{ms}$:** $6.6 \times 10^{-4}$ m/N

**Equivalent volume of compliance, $V_{eq}$:** 130 litres

**Force factor, $Bl$:** 12 N/A

**Damping:**
- Mechanical $Q_m$ 5.3
- Electrical $Q_e$ 0.50
- Total $Q_t$ 0.46 (see note 3)

**Notes**

1. **Continuous Power Rating ($P_c$):**
   
   $$ P_c = \frac{V^2}{R} $$

   $V$ is the RMS voltage which can be applied to the unit continuously without thermal overload of the voice coil. At low frequencies the continuous power rating of the speaker may be reduced because of limitations imposed on diaphragm excursion by the acoustic loading.

2. The programme rating of a unit is equal to the maximum programme rating of any system with which the unit may be safely used in conjunction with the recommended dividing network and enclosure.

   The programme rating of any system is the undistorted power output of an amplifier with which the system may be satisfactorily operated on normal programme over an extended period of time.

3. 
   $$ Q_m = \frac{2\pi f_o M_o}{R_{ms}} $$
   $$ Q_e = \frac{2\pi f_o M_o}{(Bl)^2 R_{dc}} $$
   $$ Q_t = \frac{Q_m}{Q_e} $$

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