MR-conditional carbon biopotential lead

# LEAD108B / LEAD108C

## MRI-Conditional Carbon Biopotential Lead Assembly



1.5 T, 3.0 T & 7.0 T MRI-conditional radiotransparent carbon-composition ECG/EEG/EMG lead

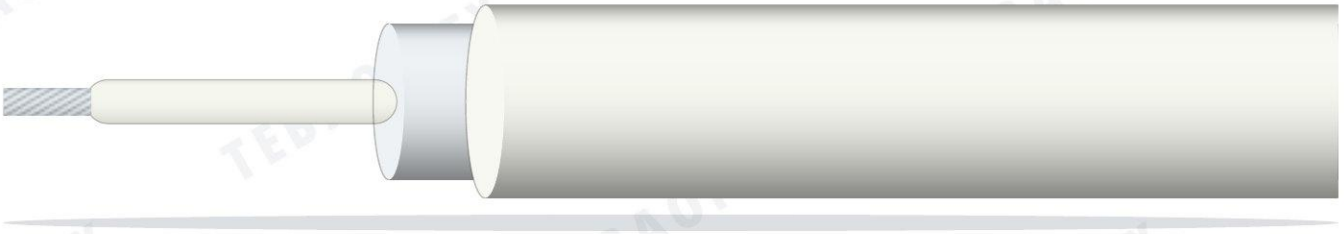
**ASTM F2503 MR-Conditional** | **1.5T / 3T / 7T MRI** | **1.5 mm DIN 42802**

## Application

MR-conditional non-ferromagnetic carbon-composition biopotential lead compatible with MRI Biopotential LEAD108B / LEAD108C for simultaneous fMRI + ECG, EEG, EMG and EOG recording without RF loop heating or susceptibility artefacts.

**Typical uses:** Simultaneous fMRI + EEG / ECG Research, Clinical MRI Patient Gating & Vital Monitoring, Translational Pre-Clinical 7T / 9.4T MRI, Cardiac MRI Triggering & Gating, Polysomnography & MEG Biopotential Recording

## Construction





Cross-section, not to scale

1. Multi-filament carbon-composition core
2. Medical-grade TPE / fluoroelastomer primary insulation

## Technical data

Typical values

| | | | |
|---|---|---|---|
| **Distributed DC resistance** | 100 Ω/m ± 20 % (standard) or 300 Ω/m ± 20 % (high-damping) | **Total lead resistance** | 100 Ω to 600 Ω (negligible vs ≥ 10 MΩ amplifier input) |
| **Dielectric strength** | 1,500 V AC rms for 1 min (IEC 60601-1) | **RF heating (ASTM F2182)** | ΔT < 1.5 °C at 4 W/kg whole-body SAR (1.5 T & 3.0 T) |
| **Image artefact (ASTM F2119)** | Zero metallic blooming / < 1 mm spin-echo & GRE void | **Clinical operating range** | +10 °C to +45 °C |
| **Storage & cleaning temperature** | −20 °C to +60 °C | **Cable outer diameter** | 2.3 mm (single unshielded) · 3.4 mm (carbon-screened / twisted) |
| **Electrode termination** | All-carbon/polymer 3.9 mm snap or radiolucent micro-clip | **Amplifier termination** | 1.5 mm female touch-proof safety socket (DIN 42802) |
| **Flex life (ANSI/AAMI EC53)** | ≥ 25,000 swing cycles at strain relief | **Tensile pull strength** | ≥ 35 N termination pull-off force |
| **Biocompatibility** | ISO 10993-5 (cytotoxicity) & ISO 10993-10 (sensitization) | **Disinfectant resistance** | 70 % IPA, Quaternary Ammonium, hospital surface wipes & 3 % H2O2 |
| **Latex & phthalate status** | 100 % natural-rubber-latex-free & DEHP-free | **Standards** | ASTM F2503 · ASTM F2182 · ASTM F2119 · IEC 60601-2-33 |
| **Standard packing** | Clean medical pouch in colour-coded sets of 3, 5 or 10 leads | | |

## Sizes

12 standard constructions

**Tick the sizes you need** and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

| Order designation | Lead Architecture & Shielding | Electrode End | Length m | Unit R Ω/m | Total R Ω | Cable OD mm | MR Field Rating |
|---|---|---|---|---|---|---|---|
| **LEAD108B Series — Unshielded Carbon-Composition Single Leads** 6 sizes | | | | | | | |
| ☐ MRC-LEAD108B-SNAP-060 | Unshielded 3K Carbon Core | Carbon Snap (3.9 mm) | 0.60 | 110 | 66 | 2.3 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108B-SNAP-100 | Unshielded 3K Carbon Core | Carbon Snap (3.9 mm) | 1.00 | 110 | 110 | 2.3 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108B-SNAP-150 | Unshielded 3K Carbon Core (LEAD108B std) | Carbon Snap (3.9 mm) | 1.50 | 110 | 165 | 2.3 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108B-SNAP-200 | Unshielded 3K Carbon Core | Carbon Snap (3.9 mm) | 2.00 | 110 | 220 | 2.3 | 1.5T / 3T |
| ☐ MRC-LEAD108B-CLIP-150 | Unshielded 3K Carbon Core | Radiolucent Pinch Clip | 1.50 | 110 | 165 | 2.3 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108B-HR-150 | High-Damping 300 Ω/m Carbon Core | Carbon Snap (3.9 mm) | 1.50 | 300 | 450 | 2.3 | 3T / 7T / 9.4T |
| **LEAD108C & Twisted Series — Carbon-Screened & Differential Pair Leads** 6 sizes | | | | | | | |
| ☐ MRC-LEAD108C-SCR-100 | Carbon-Polymer Screened Coax | Carbon Snap (3.9 mm) | 1.00 | 120 | 120 | 3.2 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108C-SCR-150 | Carbon-Polymer Screened Coax (LEAD108C std) | Carbon Snap (3.9 mm) | 1.50 | 120 | 180 | 3.2 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108C-SCR-200 | Carbon-Polymer Screened Coax | Carbon Snap (3.9 mm) | 2.00 | 120 | 240 | 3.2 | 1.5T / 3T |
| ☐ MRC-LEAD108-TP2-150 | 2-Lead Twisted Carbon Pair (Bipolar) | 2 × Carbon Snaps | 1.50 | 110 | 165 | 4.4 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108-TP3-150 | 3-Lead Twisted Carbon Triad (+ / − / GND) | 3 × Carbon Snaps (R/W/B) | 1.50 | 110 | 165 | 5.0 | 1.5T / 3T / 7T |
| ☐ MRC-LEAD108-TP3-300 | 3-Lead Twisted Carbon Triad (+ / − / GND) | 3 × Carbon Snaps (R/W/B) | 3.00 | 110 | 330 | 5.0 | 1.5T / 3T |

– To minimise gradient-switching loop pickup and RF heating inside the MRI bore, always route leads straight down the centre of the bore without coiling and use twisted-pair configurations where possible.

## Standards and approvals

- ✓ ASTM F2503 / ASTM F2182 MR-Conditional Verified
- ✓ ANSI/AAMI EC53 & ISO 10993 Biocompatible

## Certifications

**Management systems:** ISO 9001, ISO 14001, ISO 45001

### Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
**+86 185 9591 3361**

Email
**info@tebaoflex.com**

Web
**tebaoflex.com/cables/mri-conditional-carbon-composition-biopotential-lead-assembly**

Typical values for this cable type, based on ASTM F2503 /ASTM F2182 / IEC 60601-2-33 / ANSI/AAMI EC53. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.