



MR-conditional carbon biopotential lead

BIOPAC LEAD108B / LEAD108C

MRI-Conditional Carbon-Composition

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 BIOPAC 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
- 3 Optional carbon-polymer conductive screen (LEAD108C)
- 4 Biocompatible USP Class VI medical TPU jacket

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

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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.