



GRADIENT DIVISION

HEAD GRADIENT COILS

With over 30 years of experience in MRI, and over 19,000 gradient coils shipped, Tesla Engineering Ltd. is fully committed to design, supply and field support for pre-clinical gradient coils for new and existing systems. We offer innovative solutions for all types of gradient coils from single project to high volume.



We have a whole range of state of the art designs of gradient coils for pre-clinical imaging through to ultra wide bore, for virtually all magnet and amplifier combinations. New designs are quickly available on request.

Some examples of clinical gradient coils are shown below :-

Gradient Description	Unit	HFC10	HFC4	MFC27	T645/550	T675/550
Internal diameter	mm	550	330	580	550	550
External diameter	mm	888	400	712	645	675
Suitable for magnet bore diameter	mm	>900	>410	>720	>650	>680
Suitable for magnet field strength	T	4.7	4	3	3	3
Diameter of spherical imaging volume	mm	400	220	400	200	200
Gradient linearity (peak-to-peak)	%	< 10	< 10	< 10	< 10	< 10
Gradient sensitivity (each axis)	mT/m/A	> 143 (X,Y) 162 (Z)	> 310 (X,Y) 360 (Z)	> 104	> 111	> 110
Peak current I_{max}	A	600	320	500	920	920
Peak voltage V_{max}	V	950	1400	800	2000	2000
Peak gradient strength @ I_{max} per axis	mT/m	90(X,Y) 102 (Z)	101(X,Y) 115 (Z)	52	>103	>101
Peak linear Slew Rate (0-98%) @ V_{max}	T/m/s	>209	>800	>126	>500	>500
Max DC current (3 axes simultaneously)	A	240	262	145	125	145
Steady state heat extraction	kW	18	8	11	10	8
Total number of shim channels (including gradient channels)	Number	< 14	< 5	< 6	< 6	< 6
Integrated Passive Shim Trays	Number	No	No	16	No	No
Integrated RF Screen		Optional	Optional	Optional	Optional	Optional



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