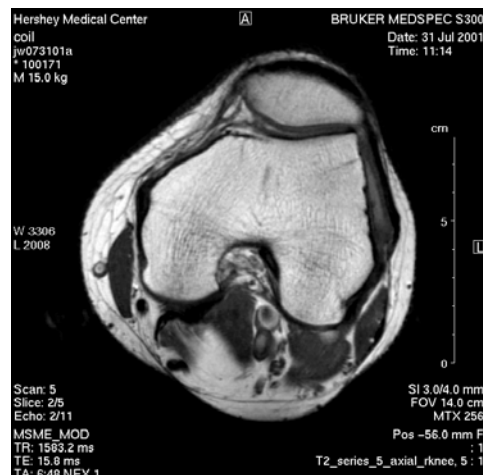


Knee, Other Extremities, or Primate Head High-Field RF Imaging Coils

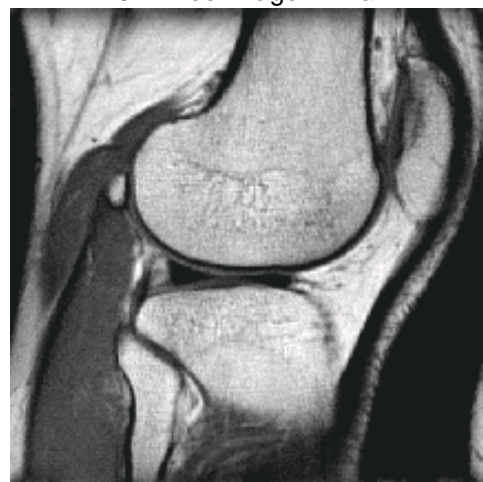
Doty rf Litz and Litzcage Modules

- Highest homogeneity
- Highest S/N
- Quick, simple tuning for all sample sizes
- Double-resonance, multi-nuclear tuning available

Knee imaging at high fields with conventional coils has often been problematic because of the enormous difference in loading between a small and a large patient. The unique tuning/balancing methods utilized in all Doty coils make tune-up predictable, simple, and quick.

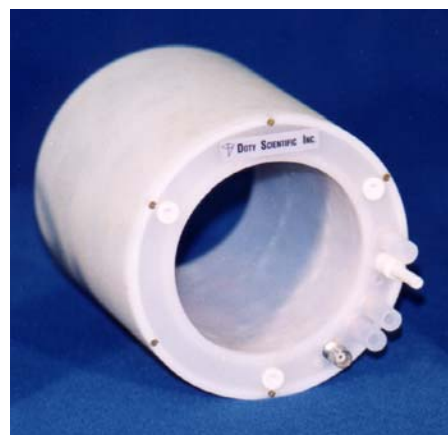


3T Knee Image - Axial



3 T Knee Image - Sagittal

Images: Courtesy of Dr. Qing X. Yang
Hershey Medical Center, Penn State Univ.



RF Litz coil module

For additional information about the Doty
Litz coil design:

F. David Doty, George Entzminger Jr,
and Cory D. Hauck, "Error-Tolerant RF
Litz Coils for NMR/MRI", *J. Magn.
Reson.*, 1999, 140:17-31.

18 x 18 cm FOV CP Litzcage Knee Coils			
¹ H MHz	τ ₉₀ , μs	Square pulse, Power, W	
		Light load	Heavy load
64	120	180	1000
80	100	350	1500
125	100	500	1500
170	125	500	1500
200	150	500	1500

Light load – 35 mM Saline, Heavy Load –100 mM Saline, at 75% of ID

Our linear Litz coils are recommended for double-resonance applications, and their exceptional sensitivity and homogeneity are demonstrated in the images shown at the right. Typical efficiency of a double-resonance Litz coil is illustrated in the table below.

18 x 18 cm FOV H/P Litz Knee Coils					
Tuning	¹ H MHz	Light Load τ ₉₀ (μs) @ 500 W		Heavy Load τ ₉₀ (μs) @ 1 kW	
		¹ H	³¹ P	¹ H	³¹ P
¹ H/X	64	100	170	110	130
¹ H/X	80	120	180	130	150
¹ H/X	125	150	230	200	200

Light load – 35 mM Saline, Heavy Load –100 mM Saline, at 75% of ID

Other Typical RF Litz Volume Coils							
Clear I.D. mm	O.D. mm	Tuning	¹ H MHz	Moderate Load τ ₉₀ 's (μs) @ 500 W		Heavy Load τ ₉₀ 's (μs) @ 1 kW	
				¹ H	³¹ P	¹ H	³¹ P
100	150	¹ H	128	36	-	82	-
100	150	¹ H/X	200	58	80	110	160
130	200	¹ H/X	170	85	110	160	200
135	200	¹ H	128	70	-	130	-
150	220	¹ H	128	90	-	200	-
150	230	¹ H/X	128	100	140	210	200
150	220	¹ H	170	120	-	270	-
200	300	¹ H/X	128	160	320	300	340

Length of homogeneous region - 80% of the coil ID.
Moderate load –50 mM saline, 70 % of the coil ID
Heavy load –100 mM saline, 75% of the coil ID