

## Comparison of M41 Coils, Physics Reconstruction and Engineering Properties

Plasma/Coil ID	Li383 Baseline	1215K1	1215K9	1215K9 HF.226	1215K9 HH.283
A				"healed"	"healed"
<b> (%)	4.36 4.19	4.37 4.09	4.37 4.14	4.37 4.16	4.37 4.16
I, Kink (x10 <sup>4</sup> )	0.1	Stable	Stable	Stable	3.4
Ballooning, Unstable s Interval, z=0	0.85-0.88	Stable	Stable	0.74-0.90	0.74-0.90
z=60	0.92-0.96	0.92-0.94	0.92-0.94	Stable	Stable
e <sub>eff</sub> (%), s = 0.3	0.08	0.23	0.24	0.27	0.28
s = 0.5	0.26	0.47	0.48	0.50	0.51
s = 0.8	0.80	1.19	1.21	1.34	1.30
f <sub>NB</sub> (%), R=1.7 m, E=40 keV, B=2 T, H, Co, R <sub>tan</sub> =R <sub>mag</sub>	14.4	17.9	17.8		
D <sub>min</sub> , Coil-Coil (cm)		16.0	16.0	13.3	14.0
D <sub>min</sub> , Coil-Plasma (cm)		19.1	19.1	18.6	18.5
Min. Bend Radius (cm)		10.9	10.9	8.5	7.3
D <sub>min</sub> , NBI Access (cm)		37.5	37.5	37.3	36.4
Modular 1, Current (MA)	-0.551	-0.551	-0.551	-0.551	
Modular 2, Current (MA)	-0.655	-0.655	-0.655	-0.655	
Modular 3, Current (MA)	-0.694	-0.694	-0.694	-0.694	
PF 3, Current (MA)	1.812	1.456	1.456	1.456	
PF 4, Current (MA)	0.020	0.024	0.024	0.024	
PF 5, Current (MA)	0.036	0.044	0.044	0.044	
TF (18 coils), Current (MA)	-0.028	-0.028	-0.028	-0.028	
		PF1 3 kA PF2 -1 kA	PF1 3 kA PF2 -1 kA	PF1 3 kA PF2 -1 kA	

## Comparison of M43 Coils, Physics Reconstruction and Engineering Properties

Plasma/Coil ID	Li383 Baseline	1228K02	1228K08	1231K10G	1231K10M	1231K10J
A					multifil	
<b> (%)	4.36 4.19	4.37 4.02	4.38 4.01	4.37 4.08	4.37 4.08	4.37 4.08
l, Kink (x10 <sup>4</sup> )	0.1	Stable	Stable	Stable	0.04	Stable
Ballooning, Unstable s Interval, z=0	0.85-0.88	Stable	0.85-0.88	Stable	Stable	Stable
z=60	0.92-0.96	0.90-0.92	0.90-0.94	Stable	Stable	Stable
e <sub>eff</sub> (%), s = 0.3	0.08	0.20	0.20	0.21	0.22	0.21
s = 0.5	0.26	0.40	0.39	0.42	0.42	0.42
s = 0.8	0.80	1.11	1.07	1.11	1.14	1.08
f <sub>NB</sub> (%), R=1.7 m, E=40 keV, B=2 T, H, Co, R <sub>tan</sub> =R <sub>mag</sub>	14.4	15.6	16.1	15.5		15.5
D <sub>min</sub> , Coil-Coil (cm)		16.0	16.1	16.0		16.0
D <sub>min</sub> , Coil-Plasma (cm)		18.7	18.7	18.7		18.7
Min. Bend Radius (cm)		10.8	11.0	10.2		10.5
D <sub>min</sub> , NBI Access (cm)		37.9	37.6	37.4		37.4
Modular 1, Current (MA)		-0.555	-0.553	-0.551	-0.551	-0.551
Modular 2, Current (MA)		-0.661	-0.694	-0.655	-0.655	-0.655
Modular 3, Current (MA)		-0.697	-0.707	-0.694	-0.694	-0.694
PF 3, Current (MA)	2.380	1.218/1.639	1.434/0.356		1.434/0.356	1.434/0.356
PF 4, Current (MA)	0.020	0.124	0.106		0.106	0.107
PF 5, Current (MA)	0.036	-0.007	-0.002		-0.002	-0.002
TF (18 coils), Current (MA)	-0.028	-0.027	-0.028		-0.028	-0.028

## Comparison of M42 Coils, Physics Reconstruction and Engineering Properties

Plasma/Coil ID	Li383 Baseline	1221.z12a	1211.z13b	1225Z13	1225Z13M	1225Z13 HF.138	1225Z13 HA.293
A <b></b> (%)	4.36 4.19	4.33 4.08	4.36 4.07	4.36 4.07	multifil	"healed"	"healed"
l, Kink (x10 <sup>4</sup> ) Ballooning, Unstable s Interval, z=0 z=60	0.1 0.85-0.88 0.92-0.96	stable Stable Stable	Stable Stable Stable	Stable Stable Stable	Stable	Stable	3.0
e <sub>eff</sub> (%), s = 0.3 s = 0.5 s = 0.8	0.08 0.26 0.80	0.21 0.46 1.23	0.18 0.41 1.14	0.20 0.43 1.14	0.21 0.44 1.18	0.20 0.43 1.12	0.20 0.42 1.12
f <sub>NB</sub> (%), R=1.7 m, E=40 keV, B=2 T, H, Co, R <sub>tan</sub> =R <sub>mag</sub>	14.4	16.1	16.1	15.6			
D <sub>min</sub> , Coil-Coil (cm) D <sub>min</sub> , Coil-Plasma (cm) Min. Bend Radius (cm) D <sub>min</sub> , NBI Access (cm)		16.1	16.1	15.9 18.5		15.7 18.5	15.2 18.0
Modular 1, Current (MA) Modular 2, Current (MA) Modular 3, Current (MA)		-0.549	-0.549	-0.549	-0.549	-0.549	-0.549
PF 3, Current (MA)	1.583/1.762	1.583/1.762	1.583/1.762		1.583/1.762	1.583/1.762	1.583/1.762
PF 4, Current (MA)	0.080	0.080	0.080		0.080	0.080	0.080
PF 5, Current (MA)	-0.001	-0.001	-0.001		-0.001	-0.001	-0.001
TF (18 coils), Current (MA)	-0.030	-0.030	-0.030		-0.030	-0.030	-0.030

