

Grating assembly mass properties									
EIS-opt-des	note-moi_grt								
CMB, NRL									
01-Jul-99									
Based on Bob Moye's design dated 6/13/99									
Note that grating will have to increase in diam by 10mm									
No lightweighting assumed									
All dimensions cm & gm									
item	#	Matl	dens	thk/len cm	W cm	Ht cm	dia cm	vol cm^3	Mass g
Grating	1	Fused Silica	2.202	2.1			9	133.5962	294.1789
Grating Cell									
blank	1	al	2.7	1.27			9.525	90.49479	244.3359
Rear Hub	1	al	2.7	0.238			2.535	1.201221	3.243296
cutout	-3	al	2.7	0.795			1.5875	1.573564	-12.7459
pocket	-1	al	2.7	0.475			9.10082	30.89901	-83.4273
front hub	1	al	2.7	0.1575			3.81	1.795645	4.84824
pad	3	al	2.7	0.08	0.95	2		0.152	0.4104
									156.6647
Baffle Assy									
baffle	1	al	2.7	0.15			10.48	12.93909	34.93554
cutout	-1	al	2.7	0.15			9	9.542588	-25.765
legs	3	al	2.7	3.269	0.635	0.488		1.012998	8.205282
									17.37584
Grating Brkt									
back low	1	al	2.7	0.635	5.418	10.48		36.05571	97.35041
back high	1	al	2.7	0.635			9.84	24.14481	65.19099
Gussets	2	al	2.7	0.635	0.47752	3.35	5.41782	0.507902	2.742672
cutout	-3	al	2.7	0.635			2.54	3.217592	-26.0625
pocket	-1	al	2.7	0.236			2.54	1.19583	-3.22874
slots	-3	al	2.7	0.635	0.413	1.065		0.279302	-2.26234
slot rad's	-3	al	2.7	0.635			0.413	0.085068	-0.68905
feet	3	al	2.7	0.932	1.61	1.5875		2.382076	19.29481
pivot	1	al	2.7	0.217	1.27	1.27		0.349999	0.944998
									153.2812
Slider Plate									
plate	1	al	2.7	0.7137	13.462	10.16		97.61555	263.562
step	2	al	2.7	0.0757	1.2357	10.16		0.950392	5.132115
rail	2	al	2.7	0.59944	0.635	10.16		3.867347	20.88367
Linear Brg	2	ss	7.8	0.59944	0.5512	10.16		3.356979	52.36887
Mtg Brkt	1	al	2.7	0.4775	2.4	3.86		4.42356	11.94361
Ball Nut	1	Var	5	2.4			1.8	6.107256	30.53628
									384.4265
								Sum of moving parts	1005.927
								Motion is roughly along S/C Z axis	
Stationary parts of grating assembly									
Baseplate									
base	1	al	2.7	1.27	13.462	10.16		173.7029	468.9978
step	-2	al	2.7	0.59944	1.8346	10.16		11.17328	-60.3357
step	-1	al	2.7	0.00762	1.2357	10.16		0.095667	-0.2583
linear slide	2	ss	7.8	0.59944	0.5518	10.16		3.360633	52.42588
									460.8296
bracket									
base	1	al	2.7	1.7475	3.937	7.617		52.40426	141.4915
notch	-1	al	2.7	0.477	1.5944	0.8		0.608423	-1.64274
Block	1	al	2.7	3.4874	2.54	5.847		51.7927	139.8403
bore	-1	al	2.7	3.7475			2.54	18.98886	-51.2699
bore	-1	al	2.7	1.40208			2.2	5.329765	-14.3904
									214.0288
Commercial Parts									
Ball Screw	1	ss	7.8	7.987			0.6	2.258271	17.61451
Actuator	1	Var	5	3.75			2.54	19.00153	95.00765
Motor & GH	1	Var	5	5.334			2.54	27.02778	135.1389
									247.7611
								Total of Stationary parts	922.6194
								Total for grating assy	1928.547