

StarCycler Momenta

StarCycle - Phase One Structure

Item	Mass		Weight		Location	RPM	Radius	Max ω		AG	AG/Fc	Momentum ^{lb/2}	kW
	Slugs lb2	kg m2	lbs.	kg				ft	mph*				
Core	1550	2295	49,587	22492	Center	5.2	15	5.5	8.1	0.13	6,446	12,500	17
Mechanicals	781	1157	25,000	11340	Floor 1	5.2	30	11	16.1	0.27	6,750	12,604	17
Cross Spokes	1074	1590	34,352	15582	Floor 4	5.2	75	28	41.1	0.7	24,047	44,086	60
Perimeter trusses	207	306	6,616	3001	Floor 4	5.2	75	28	41.1	0.7	4,631	8,491	12
Xtra Shielding	0	0		0	Floor 4	5.2	75	28	41.1	0.7	0	0	0
Perimeter Skin	2209	3272	70,686	32063	Floor 4	5.2	75	28	41.1	0.7	49,480	90,714	123
End Skin	0	0	0	0	Gradient*	5.2	-	17	24.9	0.27	0	0	0
Spokes	675	1000	21,613	9803	Gradient*	5.2	-	18	26.4	0.27	5,835	17,831	24
Center Spokes	422	625	13,508	6127	Gradient*	5.2	-	18	26.4	0.27	3,647	11,144	15
Total	6918	10246	221,363								100,837	197,370	267

Transient Mass

														<i>Delta</i>
Passengers 4 th Floor	2188	3240	70,000	31751	Floor 4	5.2	75	28	41.1	0.7	49,000	89,834	122	-
Passengers 3 rd Floor	2188	3240	70,000	31751	Floor 3	5.2	60	22	32.3	0.55	38,500	70,583	96	26.1
Passengers Core	2188	3240	70,000	31751	Floor 0	5.2	0	0	0.0	0	0	0	0	122
Non Stationary Mass	781	1157	25,000	11340	Gradient	5.2	-	28	41.1	0.7	17,500	32,083	43	-

Stabilization System

														<i>Delta</i>
Single Bogie Max	16	23	500	227	Floor 4	5.2	75	28	41.1	0.7	350	642	0.9	-
Single Bogie Min	16	23	500	227	Center	5.2	15	5.5	8.1	0.13	65	126	0.2	0.7
momoX Max x48	750	1111	24,000	10886	Floor 4	5.2	75	28	41.1	0.7	16,800	30,800	41.7	-
momoX Min x48	750	1111	24,000	10886	Center	5.2	15	5.5	8.1	0.13	3,120	6,050	8.2	33.5
Gmac Max x16	500	741	16,000	7257	Floor 4	5.2	105	39	57.2	1	16,000	28,600	38.8	-
Gmac Min x16	500	741	16,000	7257	Center	5.2	75	28	41.1	0.7	11,200	20,533	27.8	10.9

Source: Worksheet - Specifications