



TELESCOPIC MAST MODEL 7301



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DESCRIPTION

The Astro Telescopic Mast (Patent No. 5,315,795) is light and volume efficient. It locks in place when deployed and can be provided with a retractability feature. This mast is easily sized to fit various stowed envelopes, stiffnesses and strengths, based on specific needs. The materials suitable for the mast include aluminum, steel, fiberglass, graphite/epoxy and carbon-carbon.

SPACE APPLICATIONS

- Deployable booms for spacecraft
- Separator for spacecraft payloads
- Solar array blanket support

SPECIFICATIONS

Mast Parameter	Typical Small Telescopic Mast	High Temperature Application	Design Applicable for Space Station Solar Arrays
Deployed Length	47 ft (14.3 m)	33 ft (10.1 m)	113 ft (34.4 m)
Stowed Diameter	10.0 in (254 mm)	16.0 in (406 mm)	18.5 in (470 mm)
Stowed Length	44.0 in (1,118 mm)	40.4 in (1,026 mm)	83.7 in (2,216 mm)
Total Weight of Mast and Deployer	28.2 lb (12.8 kg)	89 lb (40.4 kg)	217 lb (98.4 kg)
Mast Average Diameter	6.50 in (165 mm)	13.75 in (349 mm)	14.25 in (362 mm)
Stiffness EI, Installed	6.47E+07	3.4E+08	1.17E+09
Bending Strength	3,600 in-lb(n-m)	17,000 in-lb(n-m)	53,000 in-lb(n-m)
Torsion Strength	3,100 in-lb (350 n-m)	25,000 in-lb (2,826 n-m)	57,000 in-lb (6,442 n-m)
Axial Strength	1,400 lb(6,235 n)	4,300 lb (19,151 n)	11,000 lb (48,991 n)
Total Stowed Volume (Diameter)	3,300 in ³ (0.054 m ³)	8,300 in ³ (0.136 m ³)	21,000 in ³ (0.344 m ³)
No. of Telescopic Segments	15	10	18
Material	Graphite/Epoxy Composite	Aluminum and Steel	Graphite/Epoxy Composite



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