

## BLACK STRUTS

## A REVOLUTION IN PRECISION AND MASS REDUCTION





## STRUT PERFORMANCE

|                                | w. Clevis interfaces     | w. Threaded interface    | Analysis/Test |
|--------------------------------|--------------------------|--------------------------|---------------|
| Mass[g]                        | 171.15                   | 180.62                   | Test          |
| Size [mm]                      | Ø35/Ø12; L300            | Ø35/M3/4"x1/8"; L300     | Test          |
| Tensile strength [N]           | 32911.0                  | 43861.5                  | Test          |
| Tensile strength/Mass[KN/Kg]   | 188                      | 240                      | Test          |
| Tension Spring constant [N/mm] | 36699                    | 49570                    | Analysis      |
| St Eigen frequency (Free) [Hz] | 1798                     | 2095                     | Analysis      |
| CME[1/%]                       | 9.32 x 10 <sup>-5</sup>  | 6.11 x 10-5              | Test          |
| Total CME length increase [mm] | 0.0047                   | 0.0023                   | Test          |
| CTE 0°C to 50°C 1/K]           | -0.47 x 10 <sup>-6</sup> | -0.51 x 10 <sup>-6</sup> | Test          |
| CTE 0°C to -175°C [1/K]        | 0.05 x 10 <sup>-6</sup>  | -0.19 x 10 <sup>-6</sup> | Test          |

- Satellite and Instrument Strut Elements
- 100% CFRP, No broken fibers, No metal
- 60% mass savings against Invar CTE=0 struts
- No cost gain compared to other strut

solutions

**SCSDK** offers design, engineering, manufacturing, verification & integration support for all types of space vessel composite structures. We are a High-Tech firm focusing on disruptive approach to space business.

- Coefficient of Moisture Expansion = 0
- Coefficient of Thermal Expansion = 0
- In-house Filament Winding manufacturing

