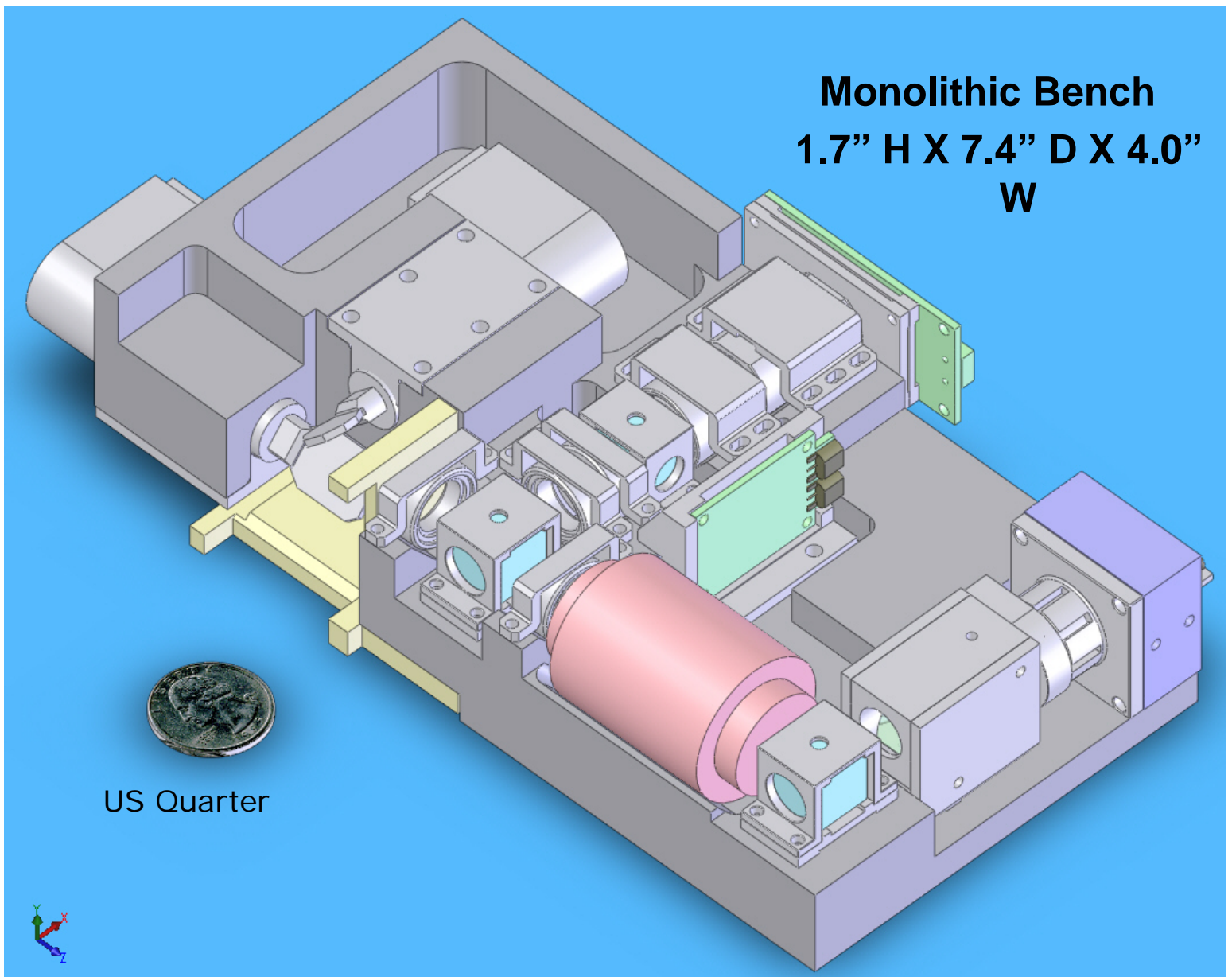
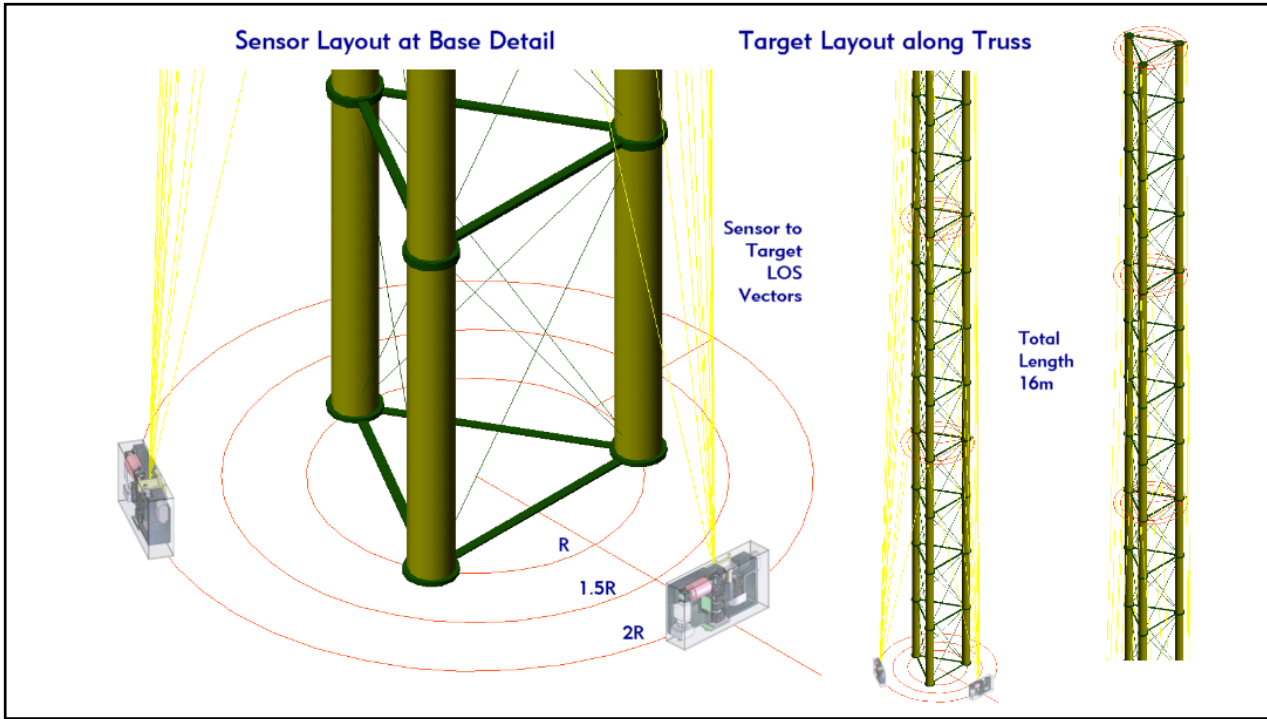


Laser Metrology System (LMS)

Laser Scanning Technology for Autonomously Measuring Large Systems in Space

The **Laser Metrology Sensor (LMS)** measures lateral motions ($25\mu\text{Rad}$), distance ($50\ \mu\text{m}$), and passive corner cube targets. It supports precision measurement of deployed structural deformations. This single space instrument measures 3-D position of 200 passive targets per sec. to sub-mm accuracy.





Specifications

Optical sources:
Scanner field of regard:

Target acquisition max. range:
Target tracking max. rate:
Target acquisition rate:
Target measurement max. data rate:
Angle resolution:
Angle repeatability:
Range resolution:

Range accuracy:

Dimensions - sensor:

Dimensions - controller:

Weight - sensor:

Weight - controller:

Power requirements:

Requirement

1 laser
Elliptical
 $\pm 20^\circ$ by $\pm 10^\circ$

25 m
100 pts/s
8 pts/s
100 pts/s
5 μ Rad
 $\pm 25 \mu$ Rad
8 μ m

0.5 m - 25 m
 $\pm 25 \mu$ m
0.5 m - 25 m

168 mm x 130 mm x 74 mm
(6.6" x 5.1" x 2.9")

140 mm x 100 mm x 80 mm
(5.5" x 3.9" x 3.1")

1.8 kg (4.0 lb)²

1.1 kg (3.3 lb)²

52 W peak
17 W avg

Goal

1 laser
Circular
 $\pm 45^\circ$ by $\pm 45^\circ$

150 m
5,000 pts/s¹
250 pts/s
500 pts/s
1 μ Rad
 $\pm 5 \mu$ Rad
8 μ m

0.5 m - 150 m
 $\pm 10 \mu$ m
0.5 m - 150 m

168 mm x 130 mm x 74 mm
(6.6" x 5.1" x 2.9")

140 mm x 100 mm x 80 mm
(5.5" x 3.9" x 3.1")

1.8 kg (4.0 lb)²

1.1 kg (3.3 lb)²

52 W peak
17 W avg

1: Based on 5,000 sample rate on galvos and 0.12 mS range finder integration time

2: Includes 25% mass contingency



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