

## Payload Description (2)



- The instrument measures differential displacement between 2 test masses (TMs) of different composition. TMs are heavy (10 kg) concentric, co-axial, hollow cylinders.
- The TMs are coupled by attaching them at their top and bottom to two ends of a coupling arm, using soft springs. The coupling arm is made of two concentric tubes attached at their midpoints to a single shaft ("PGB shaft").
  - The masses are mechanically coupled via the balance arm such that they are free to move in the transverse (XY) plane.
  - When the physical system is mechanically well balanced, it is insensitive to common-mode accelerations.
- Laser metrology mounted to outer shell of PGB cylinder



















## Concept

•Total six (6X) gauges, symmetrically distributed at two ends of the proof masses

Provide 4 DOF measurement between inner and outer cylindersPartial redundancy

 WE 32, 2000

 Ub 42, 2000

 Ub 43, 2000

 Ub 44, 2000





## Concept

- •Spatial split, between inner and outer cylinders.
- •Outer cylinder has slot/holes
- •Reflective patches on both inner and outer cylinders
- •Heritage: SIM, PDAS, etc.

