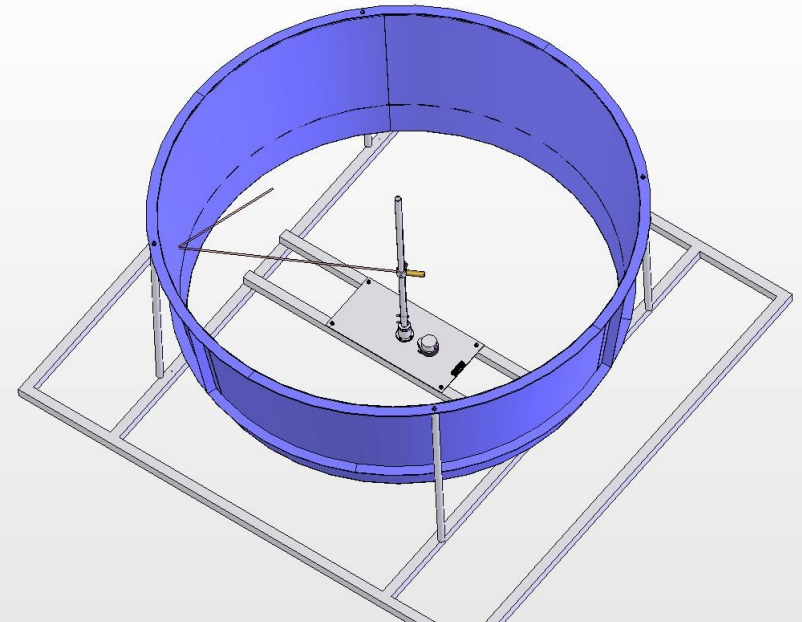
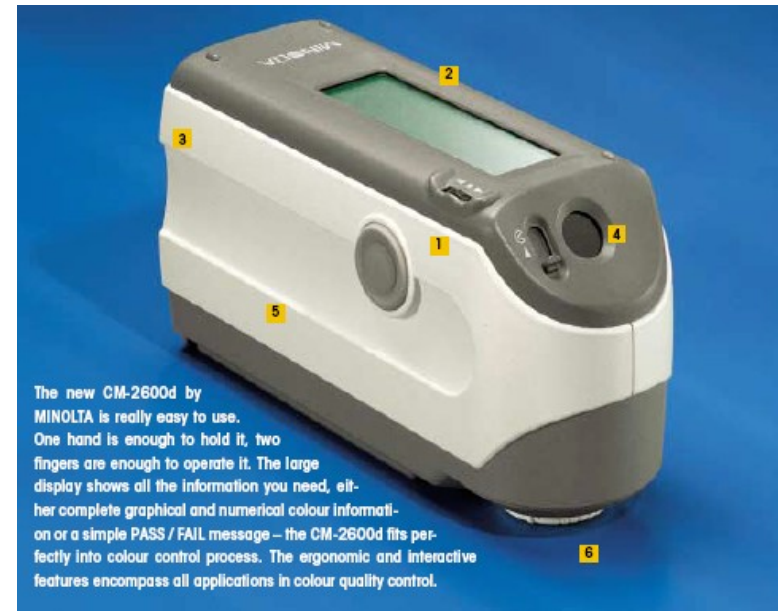
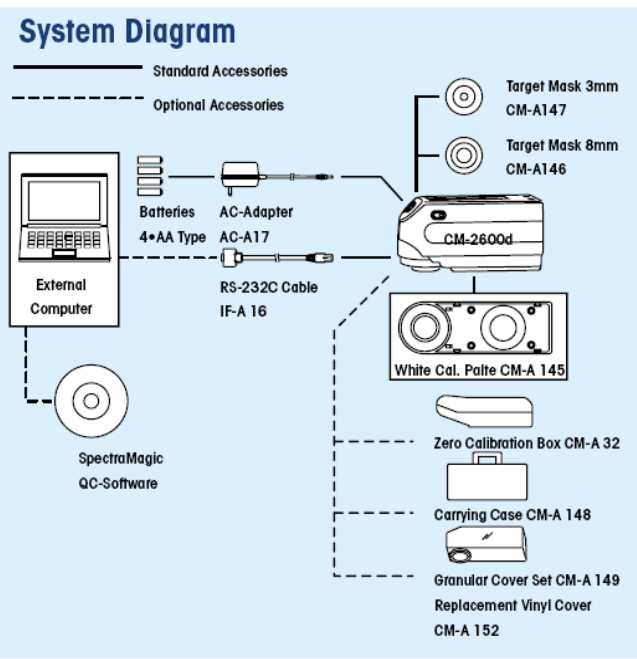


MIRROR REFLECTIVITY MAPPING

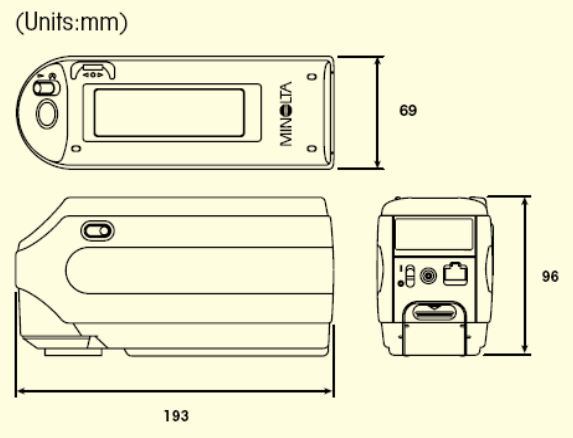
- We intend to perform a z - ϕ map using a spectrophotometer (Minolta CM-2600d)
- This tool was used by CGS for mirror acceptance: a coarse map already available.
- The CM-2600d provides spectral reflectivity components (specular & non-specular) at fixed observation angle
- A semiautomatic setup has been designed to provide (\sim mm) accurate positioning for the measurement.
- A rotating mast holds a laser pointer which flashes the target position on the mirror.
- Once the measurement is done, the mast rotates to the next ϕ position.
- When the ϕ scan is completed the pointer is manually fixed to a different height along the mast for a new scan at different z



Specifications	
Illuminating/viewing system:	d/8 (diffused illumination, 8-degree viewing angle), equipped with simultaneous measurement of SCI (specular component included)/SCE (specular component excluded). (Conforms to DIN 5033 Teil 7, JIS Z 8722 Condition C, ISO 7724/1, CIE No.15, ASTM E1164.)
Size of Integrating sphere:	B 52 mm
Detector:	Silicon photodiode array (dual 40 elements)
Spectral separation device:	Diffraction grating
Wavelength range:	360 nm to 740 nm
Wavelength pitch:	10 nm
Half bandwidth:	Approx. 10 nm
Reflectance range:	0 to 175%, Display resolution: 0.01%
Light source:	3 pulsed xenon lamps (2 xenon lamps for CM-2500 d)
Measurement time:	Approx. 1.5 seconds (approx. 2 seconds for fluorescent measurement)
Minimum measurement interval:	3 seconds for SCI/SCE (4 seconds for fluorescent measurement) (Simultaneous evaluation of SCI/SCE is possible by a single measurement)
Measurement/Illumination area:	MAV: B 8mm/B 11 mm SAV: B 3 mm/B 6 mm (Selectable between MAV and SAV) (Only MAV is available for CM-2500d)
Repeatability:	(Standard deviation): Spectral Reflectance: within 0.1% (360 to 380nm within 0.2%) Chromaticity Value : Delta E*ab within 0.04 (When a white calibration plate is measured 30 times at 10-second intervals after white calibration)
Inter Instrument agreement:	Delta E*ab within 0.2 (MAV/SCI) (Based on 12 BCRA Series II color tiles compared to values measured with master body)
UV adjustment:	Instantaneous adjustment (no mechanical adjustment required) *With UV400nm cut filter (no UV adjustment function for CM-2500d)
Measurement mode:	Single/averaging (auto mode: 3, 5, 8 flashes/manual mode)
Interface:	RS-232C
Observation:	2/10 degrees
Observation light source:	A, C, D50, D65, F2, F6, F7, F8, F10, F11, F12 (simultaneous evaluation is possible using two light sources)
Outputs:	Spectral value/graph, colorimetric value, color difference value/graph, PASS / FAIL result
Color space/colorimetric data:	L*a*b, L*C*h, CMC (1:1), (2:1), CIE94, Hunter Lab, DIN99 Yxy, Munsell, XYZ, MI, WI (ASTM E313), WI/Tint CIE (Ganz/Griesser), YI (ASTM E313/ASTM D1925), ISO Brightness (ISO 2470), Density status A/T
Data memory:	700 (SCI/SCE as a set)
Tolerance judgment:	Tolerance for color difference (both box and elliptical tolerances can be set)
Power sources:	AA-size battery (x4), AC adapter
Battery performance:	Approx. 1000 times at 10-second intervals (when alkaline batteries used)
Size (WxHxD):	69 x 96 x 193 mm
Weight:	Approx. 670g (without batteries)
Operating environment:	5 to 40 °C; less than 80% RH (no condensation); installation category: 2; Pollution degree: 2
Storage environment:	0 to 45 °C; less than 80% RH (no condensation)
Standard accessories:	White calibration plate, Target mask B 8 mm, Target mask B 3 mm (not supplied for CM-2500d), RS-232C cable, AC adapter, AA-size battery (x4)
Optional accessories:	Hard case, Dust cover set, Dust cover, SpectraMagic QC software, Zero calibration box CM-A32



CM-2600d Dimensions



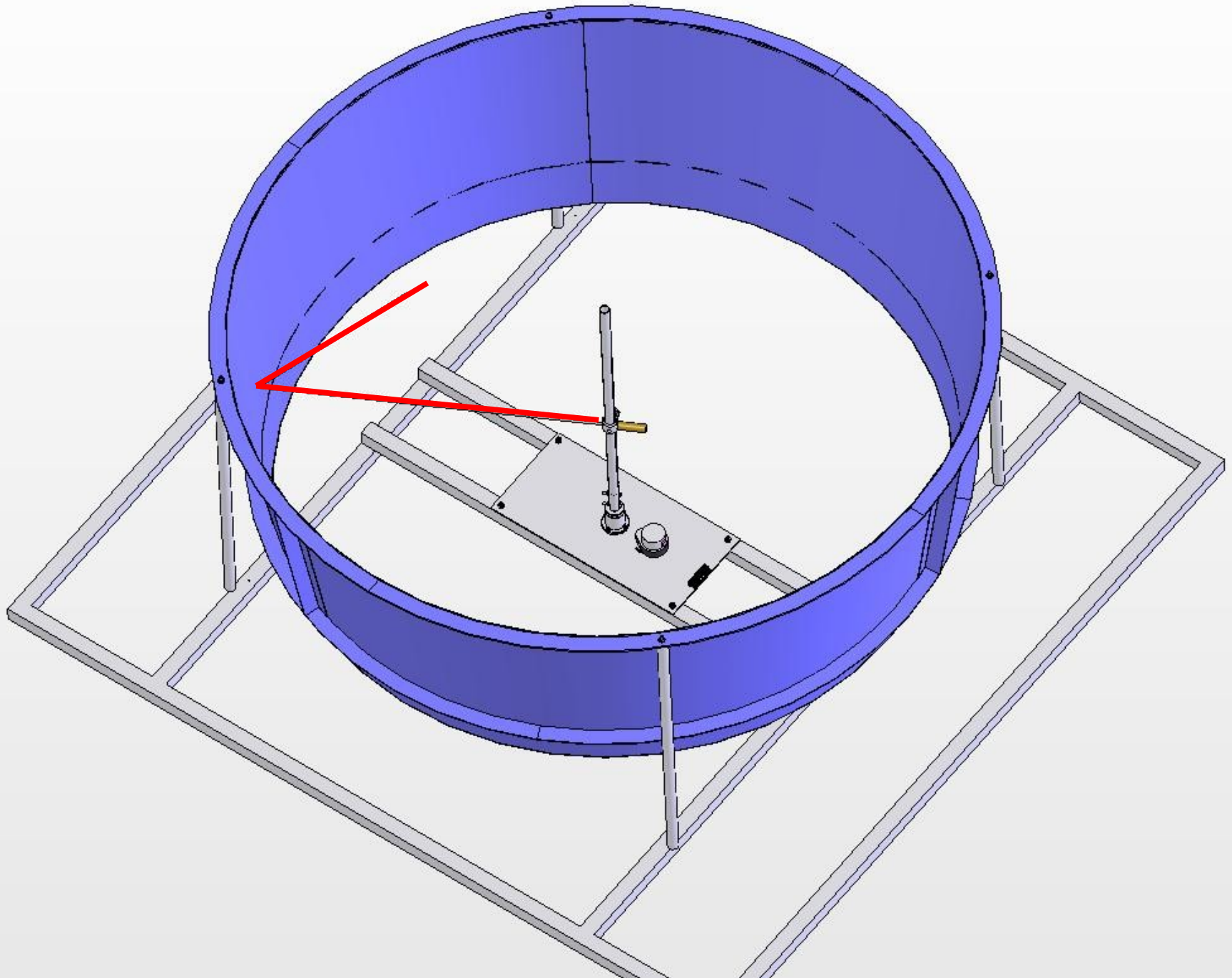
CM-2500d the lower cost option

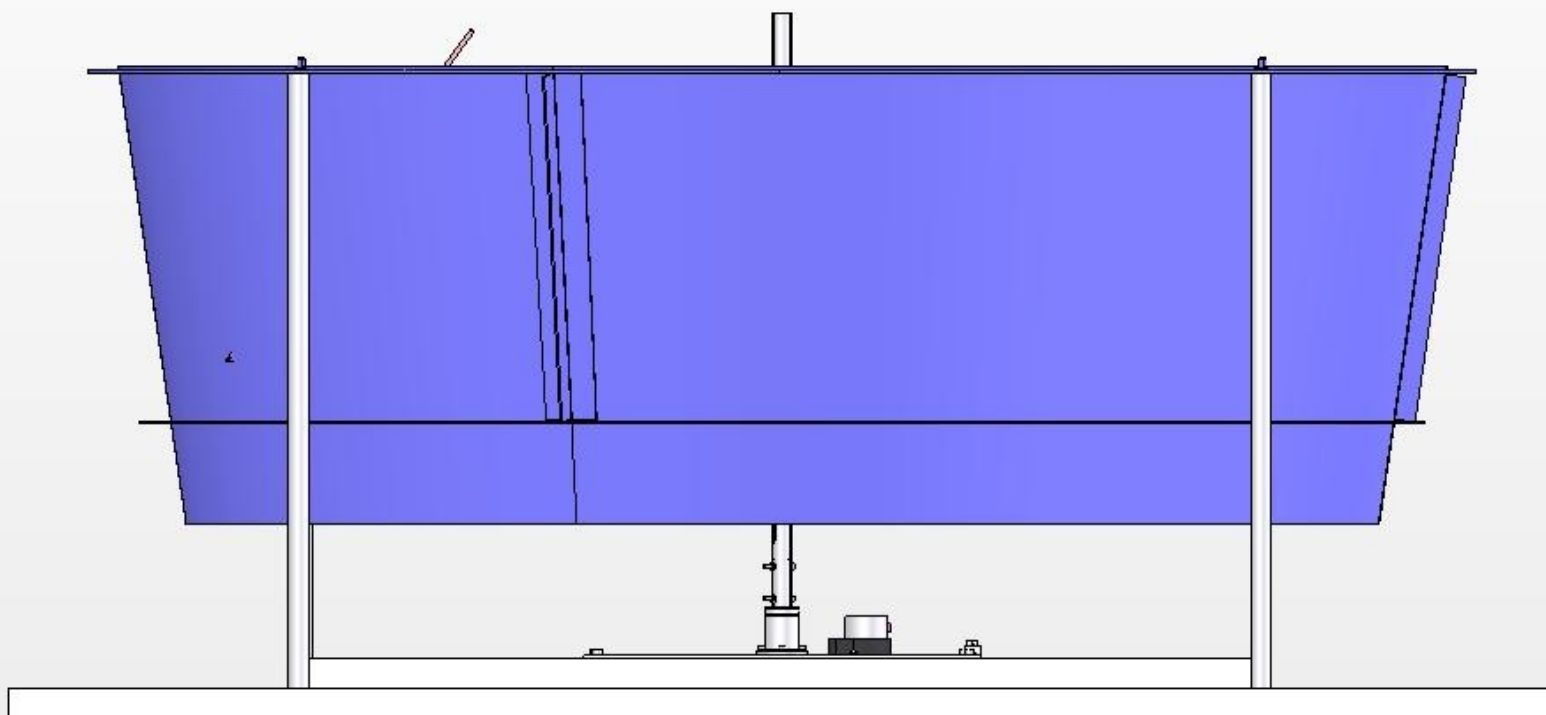
Same simplicity, same performance but with the following restrictions:

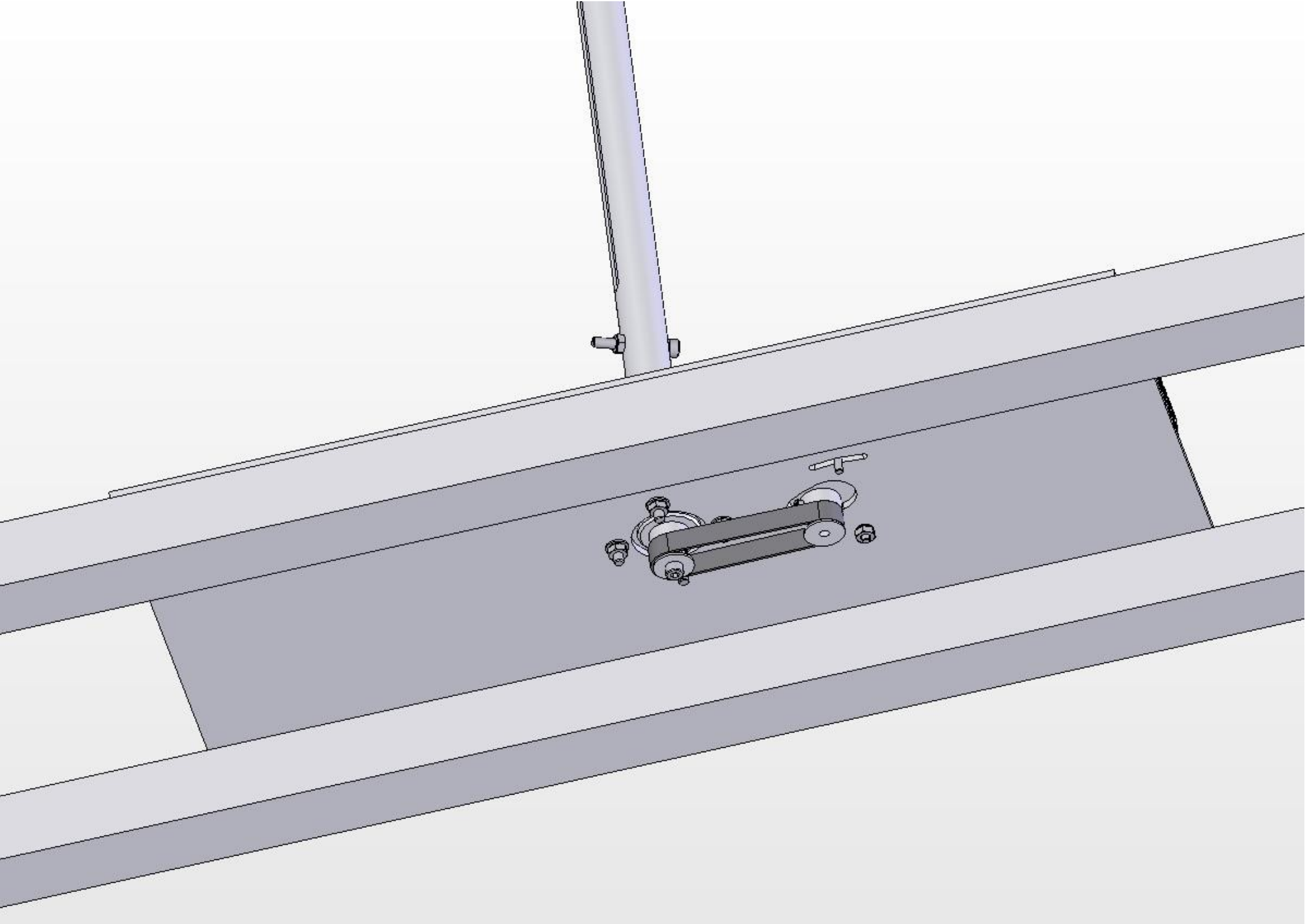
- No UV control
- Only B 8 mm aperture



Specifications and drawings subject to change without prior notice.







- Possible Mapping:
 - ϕ -scan: 36 x 10 deg step (10.5 – 11.7 cm on the mirror)
 - z-scan: 22 x 2 cm step
 - ~800 measurements (~1 week)
- Schedule:
 - since the measurements will be carried out in the clean room, we must match the RICH assembly schedule.
 - 2nd fortnight in June seems a sensible period to perform the measurements.
 - 1 week setup validation
 - 1 week for measurements
- S/W Implementation:
 - DB: Associated table (TBD)
 - SIM/REC S/W: mapping inclusion & interpolation procedure (TBD)