

- **UF RH Design is mature**

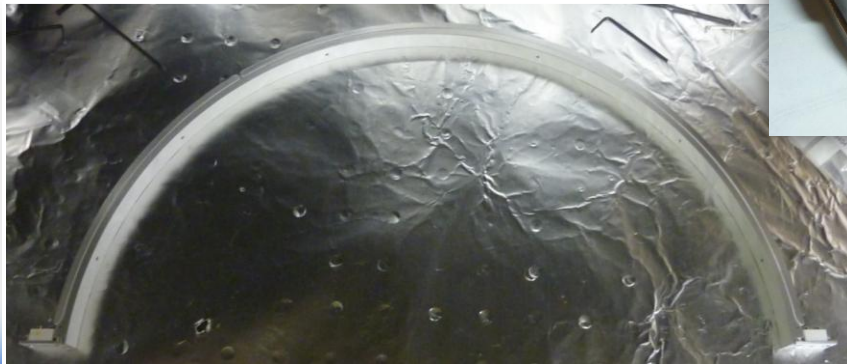
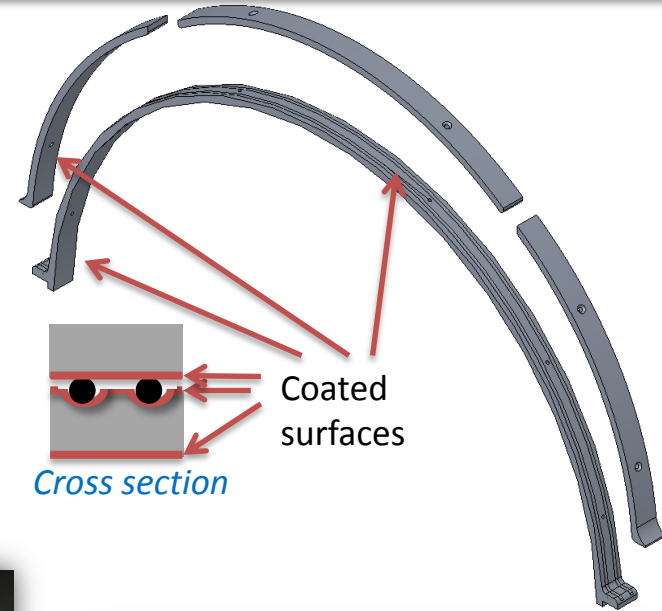
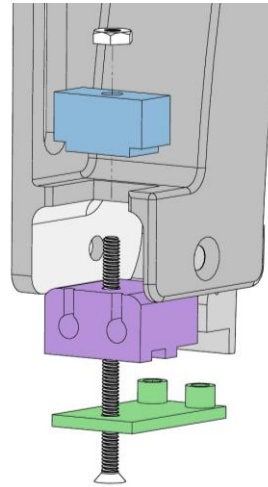
- Aluminum structure
- Alumina coating for emissivity and electrical isolation
- Clamp retainer compatible with current shields

- **Residual astigmatism in transmission:**

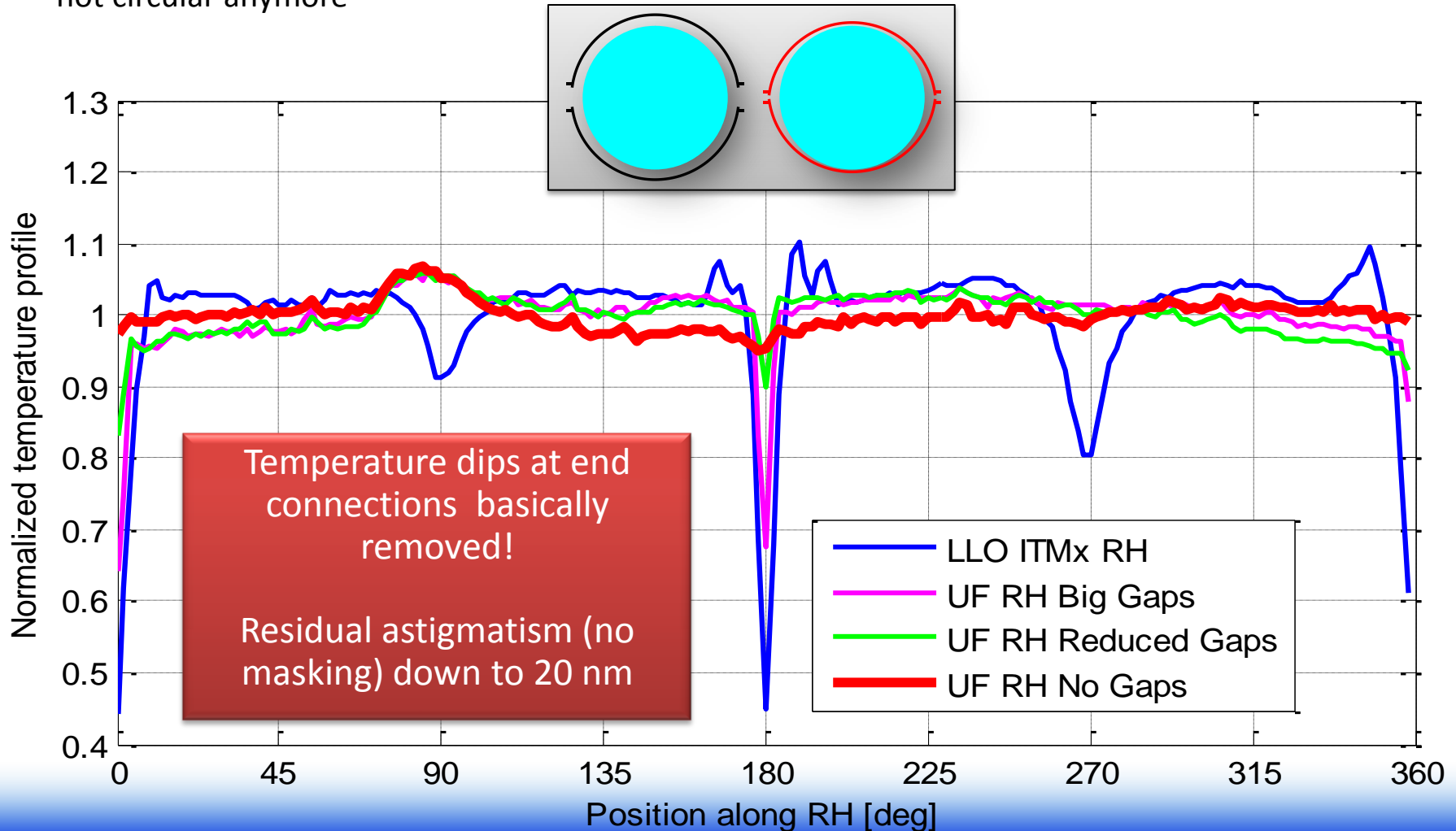
- Baseline RH: ~15 nm (optimized, best units)
- UF RH: 30 nm (single prototype, no masking)
15 nm (single prototype, “blind” masking)

- **Open questions/issues:**

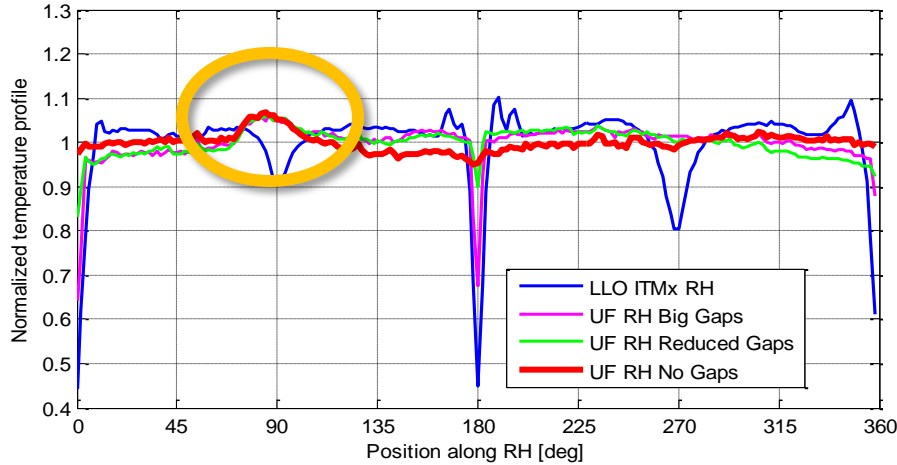
- Open gap due to mistake in design. How do performance look like when closed?
- Unexpected “bump” in emission profile: emissivity or actual temperature?
- Final RGA scan



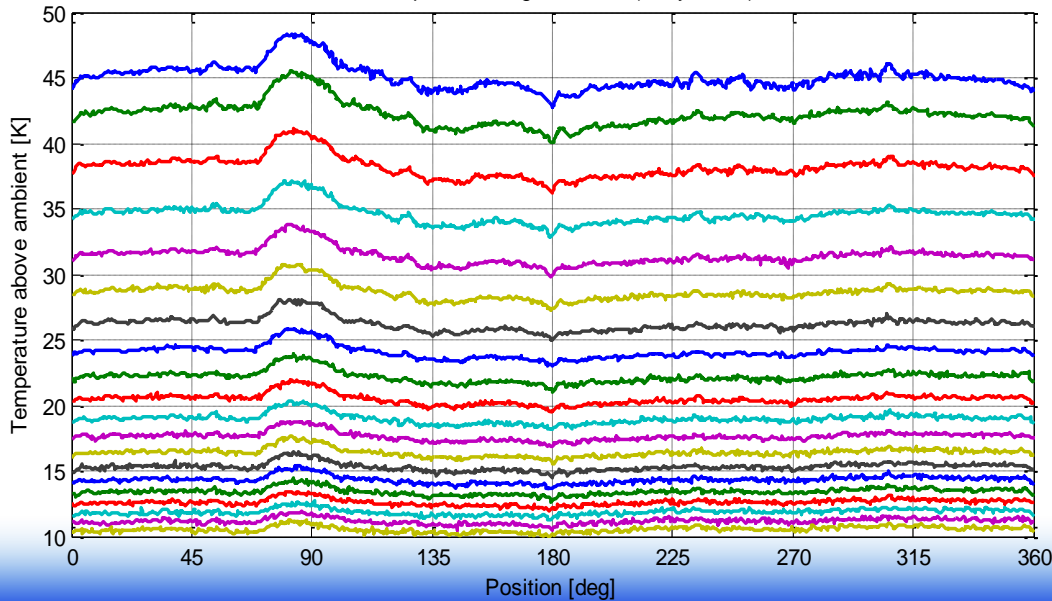
- Open gap between halves due to design error.
- Special retainers machined to close the gap (this time completely), at the expense of making the RH not circular anymore



- **Surface emissivity or actual temperature?**



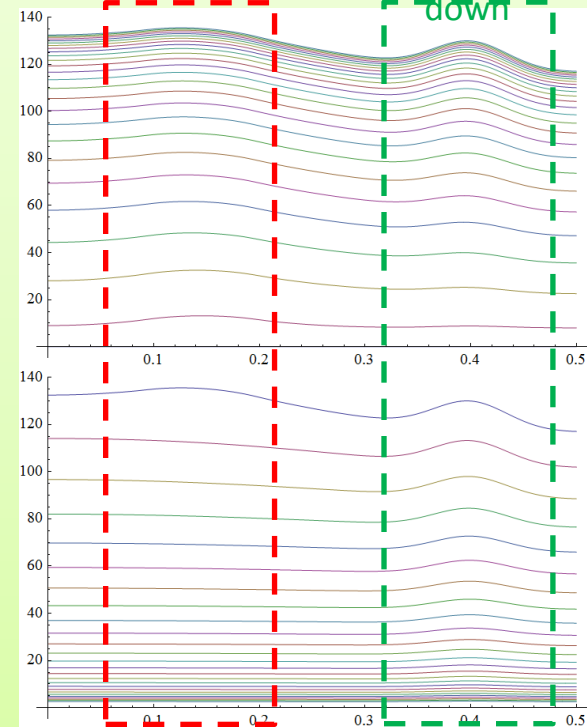
UFRH profile during cooldown (every 250 s)



Simulated emission profiles

Local increase in heating power: bump diffuses away quickly during cool-down

Local increase in emissivity: bump remains visible even during cool-down



Warm-up

Cool-down

- Temperature dip at end connections can be almost completely eliminated
 - Demonstrated on current prototype with a “trick”
 - Requires trivial redesign of RH structure
 - Even without optimization (masking), performance close to baseline RH
- Residual irregularities in temperature profile due to emissivity
 - Demonstrated by cool-down experiment
 - If vendor cannot do better, they can do easily compensated with masking
- RGA scan:
 - High sensitivity scan still pending