

# Lifetime Planacon MCP-PMT testing: ALD vs reduced lead glass

Anode charge: Coulombs/cm<sup>2</sup>,  $Coulombs = (I \text{ output current}) * Time \text{ (seconds)} \rightarrow \text{years}$

Quantum Efficiency (converting light to electrons) degrades due to ion feedback

- No countermeasures – reduced lead glass, < 0.5 C/cm<sup>2</sup> lifetime
- film – thin layer of planar alumina film sandwiched between MCPs, ~1 C/cm<sup>2</sup>
- ALD: D2 >10C/cm<sup>2</sup>; R2D2 ongoing test, GOAL – 20 C!

