Amazon Leo (Redmond): FCC Constellation License Conditions, Krypton Reserves & 5-Year Disposal

Pillar: Constellation Scale | **Basis:** FCC License Conditions & Operator Disclosures | **Primary Source:** Amazon Leo / FCC Space Bureau | **As Of:** As of Nov 2026 (FCC 5-Yr Rule in Force)

Amazon Leo (formerly Project Kuiper), engineered and operated out of Redmond, WA, integrates krypton Hall-effect thrusters and dedicated end-of-life propellant margins to meet FCC Part 25 orbital debris conditions and 5-year post-mission disposal.

Documented Instrument & Engineering Record

• Redmond constellation hub: Amazon Leo (rebranded from Project Kuiper) develops its broadband constellation hardware and mission operations in Redmond, WA.

• Propulsive deorbit necessity: Constellations operating around ~590–630 km cannot rely solely on rapid natural atmospheric decay during solar minima—making onboard krypton Hall-effect propulsion essential for guaranteed <= 5-year disposal.

• Propellant reserve discipline: Under 47 CFR § 25.283(e), end of mission for a maneuverable satellite is triggered when it can no longer perform collision-avoidance maneuvers, requiring operators to lock in deorbit propellant margins before commercial service ends.

• FCC license conditions: Amazon Leo's Part 25 authorization carries ongoing orbital debris reporting, failure-rate tracking, and post-mission disposal verification obligations.

Amazon Leo FCC Orbital Debris Compliance Matrix

Requirement	Technical Mechanism	Regulatory Instrument
5-Year LEO Deorbit	Active krypton Hall-effect descent	47 CFR § 25.283(e)
Collision Avoidance	Automated maneuver + 18th SDS data	FCC Part 25 ODMP
Passivation	Propellant depletion + battery disconnect	FCC § 25.283 / ODMSP
Reentry Casualty	Demisable materials (< 1:10,000 Ec)	FCC ODMP / NASA-STD-8719.14C

Mission Designer, Compliance Lead & Founder Takeaways

• Dedicated EOL propellant reserves directly reduce on-orbit commercial revenue life—making thruster Isp and mass-budget optimization a core sustainability-finance tradeoff.

• Redmond suppliers providing propulsion, power, or structural components to Amazon Leo inherit strict traceability for ODMP and demisability compliance.

• Loss of propulsion before EOM triggers contingency reporting and elevates the value of backup deorbit servicing.

Cross-Cluster Links & Primary Sources

• **Amazon Leo (Redmond) Census Profile:** https://bcesg.org/amazon-leo-washington-space-cluster-profile/

• **End-of-Life Propellant Margin Budgeting:** https://bcesg.org/wa-space-orbital-propellant-margin-budgeting/

• **FCC 5-Year Disposal Rule Mechanics:** https://bcesg.org/wa-space-orbital-fcc-5-year-rule-mechanics/

• **Amazon Leo Official Page:** https://www.aboutamazon.com/what-we-do/devices-services/amazon-leo

• **eCFR: 47 CFR § 25.283:** https://www.ecfr.gov/current/title-47/chapter-I/subchapter-B/part-25/subpart-D/section-25.283

Provenance Note: Grounded in FCC 47 CFR § 25.283(e) and Amazon Leo public disclosures as of 2026-11-16.