BUSINESS MODEL

FLARE-Sat provides real time wildfire detection and verification using a constellation of SWIR equipped satellites in low Earth orbit. The company offers subscription-based data services, custom analytics, and API access for governments, insurance firms, and environmental organizations. Revenue comes from regional and global monitoring packages that vary by resolution, coverage, and response time. High-resolution SWIR imagery is downlinked and processed on the ground using advanced machine learning to verify fires, reduce false alarms, and deliver actionable alerts within minutes for wildfire response and environmental management.verification.

LAUNCH COST ESTIMATION

When stowed, the payload footprint is 65 × 30 inches (1651 × 762 mm). Because of the large lenses, this does not fit within standard rideshare sizing. Given the number of satellites in the constellation, dedicated launches are preferred. A dedicated SpaceX Falcon 9 with a palletized or stacked dispenser is the most practical choice. The SpaceX Falcon User's Guide provides information on multi-payload configurations suitable for constellation missions.

Vehicle Price:
SpaceX lists the Falcon 9 at approximately $67 million and the Falcon Heavy at approximately $97 million.

MULTI-PAYLOAD CAPABILITY

According to the SpaceX Falcon User's Guide, the Falcon 9 can support 7 to 10 metric tons of total payload mass depending on the dispenser configuration. Final capacity depends on adapter design, integration layout, and vibration or acoustic requirements.

HOW MANY COULD FIT

Each satellite has a footprint of 1.26 m² (based on 65 × 30 inches). The Falcon 9 fairing provides a usable base area of 21.2 m² with a 5.2 meter diameter. Accounting for packing inefficiency and clearances, approximately 10 to 12 satellites per layer is realistic. Stacking 2 to 5 layers, depending on mass and dispenser design, results in roughly 20 to 60 satellites per launch before reaching integration or dynamic limits.

COST PER SATELLITE

Dedicated Falcon 9:
Total cost of approximately **$67 million**, which equals **$3.4 to $1.1 million per satellite** for 20 to 60 spacecraft per launch.

Rideshare Option (if reconfigured):
Approximately **$0.33 to $0.65 million** per 50 to 100 kilogram satellite, based on current SpaceX Transporter pricing.

BENCHMARK EXAMPLES

- **SpaceX Transporter-1:** 143 small satellites launched to LEO in one mission.
- **Planet "Flock" (PSLV-C37):** 88 Earth-imaging satellites launched on a single mission.
- **OneWeb Campaign (Soyuz and ISRO):** Typically 36 satellites deployed per launch.

BOTTOM LINE FOR PLANNING

Geometry:
Standard rideshare ports are too small for this payload, so a **dedicated Falcon 9** or a **custom multi-payload dispenser** is recommended.

Counts:
Expect **20 to 60 spacecraft per Falcon 9 launch** depending on stowed thickness, mass, and dispenser design.

Costs:
Dedicated Falcon 9 total cost is approximately **$67 million**, or **$1.1 to $3.4 million per satellite** depending on configuration.

REFERENCES

SpaceX Rideshare Program and Pricing
https://www.spacex.com/rideshare

SpaceX Falcon User's Guide (Payload Accommodation and Multi-Payload Configurations)
https://www.spacex.com/media/falcon-users-guide-2021-09.pdf

SpaceX Launch Services Pricing
https://www.spacex.com/launches/#commercial

EELV Secondary Payload Adapter (ESPA) Dimensions — Northrop Grumman

https://www.northropgrumman.com/space/evolved-expendable-launch-vehicle-secondary-payload-adapter-espa

ESPA Grande Specification Overview — Northrop Grumman
https://www.northropgrumman.com/space/espa-grande

SpaceX Transporter-1 Mission Overview
https://www.spacex.com/updates/transporter-1-mission/

ISRO PSLV-C37 Mission (Planet's Doves)
https://www.isro.gov.in/launcher/pslv-c37-cartosat-2-series-satellite.html

OneWeb Constellation Launch Campaign
https://oneweb.net/launches