Launch Mission Execution Forecast

Mission: Falcon 9 mPOWER-D
Issued: 20 Jul 2025 / 0915L (1315Z)
Valid: 21 Jul 2025 / 1700 – 1930L (2100 – 2330Z)

Forecast Discussion: High pressure aloft, which is helping to reduce precipitation chances this weekend, will move west towards the Gulf by Monday. The exit of the ridge will allow seasonal moisture to return to the area and may help develop afternoon/evening showers and thunderstorms near the area during the primary launch window. Some storms may be strong enough to produce wind gusts of 40-50 mph.

Additional breakdown of the ridge and an approaching surface front on Tuesday will create above-normal moisture across the area and generate scattered to widespread showers and thunderstorms during the back up launch opportunity. The Anvil Cloud Rules, Cumulus Cloud Rule, and Surface Electric Field Rule are the main concerns during the primary launch opportunity, with the Cumulus Cloud Rule, Anvil Cloud Rules, and Lightning Rule the main concerns during the back-up launch opportunity.

Launch Day

Probability of Violating Weather Constraints[1]

50%

Primary Concerns: Anvil Cloud Rules, Cumulus Cloud Rule, Surface Electric Field Rule

Weather Conditions		Clouds				Additional Risk Criteria[2]	
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Iso Showers & T-Storms / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	87°F / 70%	Cumulus	Scattered	3,000	12,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	150° 12 - 17 mph	Cirrus	Scattered	28,000	31,000	**Solar Activity**:	Low

24-Hour Delay

Probability of Violating Weather Constraints

75%

Primary Concerns: Cumulus Cloud Rule, Anvil Cloud Rules, Lightning Rule

Weather Conditions		Clouds				Additional Risk Criteria	
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Showers & T-Storms / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	86°F / 74%	Cumulus	Broken	2,500	18,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	160° 13 - 18 mph	Cirrus	Broken	25,000	30,000	**Solar Activity**:	Low

Notes

1. *The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time during the launch window.*
2. *Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.*

See Launch FAQ https://45thweathersquadron.nebula.spaceforce.mil/pages/launchForecastSupport.html ***for more information***

Next Forecast Will Be Issued	As Required