



Launch Mission Execution Forecast



Mission: Falcon 9 SiriusXM 9

Issued: 4 Dec 2024 / 1245L (1745Z)

Valid: 5 Dec 2024 / 1110 – 1240L (1610 – 1740Z)

Forecast Discussion: The stretch of benign weather continues as a strong area of high pressure dominates the Southeastern US. Tomorrow, an approaching cold front will push the high further southeastwards, with its ridge axis centered directly over the Florida Peninsula. This will bring very favorable conditions for the primary launch day, with a negligible risk of any weather violations.

On Friday, the cold front will advance from north-to-south through East Central Florida during the morning. However, model guidance continues to show a mostly dry frontal passage due to a lack of moisture and instability. Low topped cumulus clouds are still expected along the front, but dry air aloft will limit their vertical development. Additionally, behind the front a scattered mid-level cloud deck and increasing northerly winds are expected, especially later in the window. Thus, the POV is elevated compared to Thursday, with the primary concerns being Liftoff Winds, the Cumulus Cloud Rule, and Thick Cloud Layers Rule.

Launch Day	Probability of Violating Weather Constraints ¹					
	<5%	Primary Concerns: None				
	Weather Conditions				Additional Risk Criteria ²	
	Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
	Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity: 69°F / 55%	Stratocumulus	Few	2,000	4,000	Booster Recovery Weather: Low	
Liftoff Winds (200'): 260° 10 - 15 mph	Cirrus	Few	37,000	39,000	Solar Activity: Low	

24-Hour Delay	Probability of Violating Weather Constraints					
	25%	Primary Concerns: Liftoff Winds, Cumulus Cloud Rule, Thick Cloud Layers Rule				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
	Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity: 65°F / 75%	Cumulus	Broken	2,000	9,000	Booster Recovery Weather: Low	
Liftoff Winds (200'): 340° 18 - 26 mph	Cirrostratus	Scattered	18,000	21,000	Solar Activity: Low	

Notes

- The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time during the launch window.
- 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 <https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf> for more information

Next Forecast Will Be Issued	As Required
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