The Delta IV Heavy is the world’s most capable rocket delivering our nation’s most critical national security and science missions for the National Reconnaissance Office, the U.S. Air Force and NASA.

Spacecraft are encapsulated inside the 5.5-m (16.8-ft) payload fairing (P/F), consisting of a composite bisection (two-piece shell) or optional trisection (three-piece shell) fairing.

The Delta Cryogenic Second Stage (DCSS) is 5.1 m (16.7 ft) in diameter and 13.0 m (42.8 ft) long. The propellant tanks are constructed of isogrid aluminum barrels, spun-formed aluminum domes, machined aluminum tank skirts and a composite intertank truss. The DCSS is a liquid hydrogen/liquid oxygen-fueled vehicle. It uses a single RL10 engine that produces 110,773 lb (497,560 N) of thrust. An equipment shelf attached to the aft dome of the DCSS liquid oxygen tank provides the structural mountings for vehicle electronics. The structural and electronic interfaces with the satellite are provided via the payload attach fitting (PAF).

The Delta IV common booster core (CBC) is 5.1 m (16.7 ft) in diameter and 40.8 m (133.8 ft) long. It is constructed of isogrid aluminum barrels, spun-formed aluminum domes, machined aluminum tank skirts and a composite centerbody. Delta IV booster propulsion is provided by the RS-68A engine system. The RS-68A burns cryogenic liquid hydrogen and liquid oxygen and delivers 3,977 kN (892,200 lbf) of thrust at sea level. The booster’s tanks are insulated with a combination of spray-on and bonded insulation and helium-purged insulation blankets. The Delta IV vehicle is controlled by an avionics system, which provides guidance, flight control and vehicle sequencing functions during booster and second stage phases of flight. The Delta IV Heavy configuration employs three CBCs to provide the necessary energy for heavy lift missions.

Performance

- GTO: 13,810 kg (30,440 lb)
- LEO: 28,370 kg (62,540 lb)

**VTO = Transfer Orbit (Earth-Moon) = 26,430 kg (58,220 x 100 m/s) at 97 km altitude)**
**GTO = Low Earth Orbit = 405 km (200 miles) circular at 25°**

1. Payload Fairing
2. Avionics Module
3. Spacecraft
4. Payload Attach Fitting
5. DCSS Fuel (LH2) Tank
6. DCSS Upper Tank Assembly
7. High Pressure helium Shroud
8. DCSS Oxidizer (LOX) Tank
9. Nine Core
10. DCSS Equipment Shell
11. Heritage Adapter
12. DCSS Engine (RL10)
13. Stage Assembly
14. Booster divider (LH2) Tank
15. Antispherical shroud
16. Centertube
17. Booster fuel (LOX) Tank
18. Booster Divater (LOX) Feedline
19. Port Common Booster Core
20. Center Common Booster Core
21. Starboard Common Booster Core
22. Isogrid Structure
23. Booster fuel (LOX) Feedline
24. Thermal Shroud
25. Booster Engine (RL10A/A)

The Delta IV Heavy stands approximately 70.7 m (232 ft) tall. Delta IV Heavy rockets are built at ULA’s 1.6-million-square-foot, state-of-the-art production facility in Decatur, Alabama.

Delta IV Heavy rockets launch from Space Launch Complex-37 at Cape Canaveral Air Force Station in Florida and Space Launch Complex-6 at Vandenberg Air Force Base in California.