DIRECT v3

Jupiter-130 Heavy - LEO Crew Launch Vehicle Configuration

Vehicle Concept Characteristics - LV 41.5000.08100

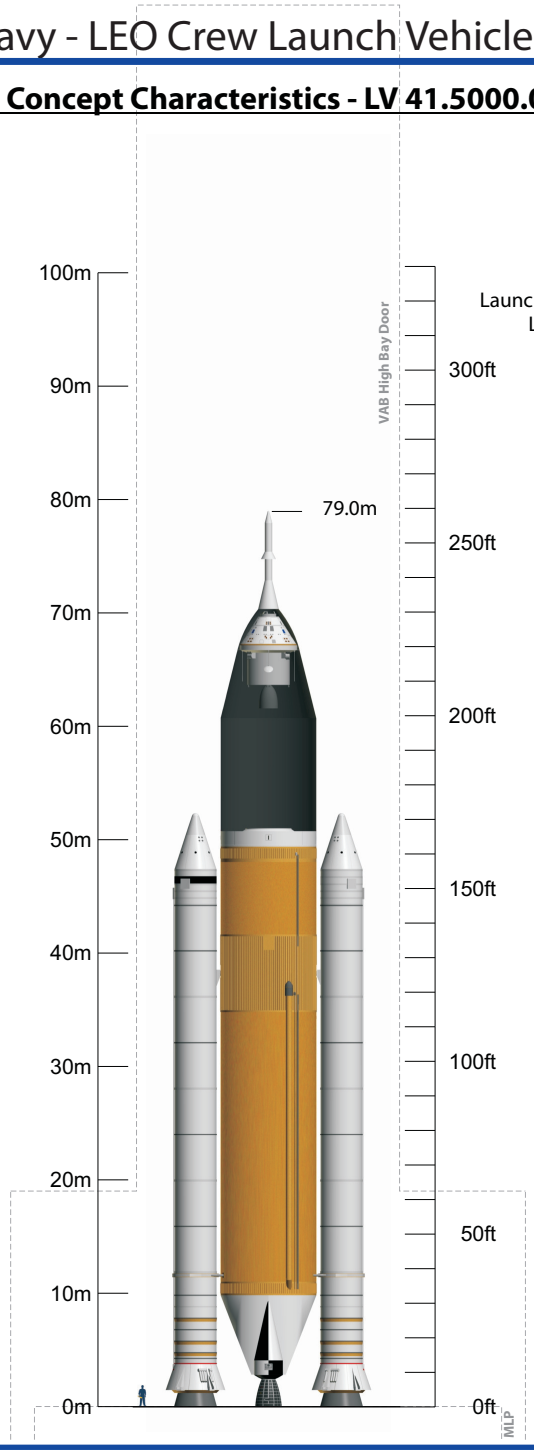
Launch Site	**KSC LC-39 (Latitude: 28.6084°)**
GLOW	**5,489,389lb (2,489,945kg)**
Payload Fairing	27.6 x 32.8ft (8.4 x 10.0m)
Payload Envelope	25.0 x 32.8ft (7.6 x 10.0m)
Payload Fairing Jettison Mass	12,365lb (5,609kg)
Payload Fairing Jettison	After Orbital Insertion
Launch Abort System Jettison Mass	16,083lb (7,295kg)
Launch Abort System Jettison	256.5s @ 56.9nmi

BOOSTERS (each)

Design Heritage	Shuttle-derived 5-segment RSRMV
Propellants	PBAN
Usable Propellant	1,380,873lb (626,353kg)
Stage pmf	0.8656
Dry Mass	228,620lb (103,700kg)
Burnout Mass	232,608lb (105,509kg)
# Boosters / Type	2 / 5-segment RSRMV
Booster Thrust (@ 0.7s) SL	3,510,791lbf (1,592,468kgf / 15,616,776N)
Vac	3,510,791lbf (1,592,468kgf / 15,616,776N)
Booster Isp (@ 0.7s) SL	237.0s
Vac	267.4s
Booster Burn Time	126.6s

CORE STAGE

Design Heritage	Shuttle Super Light Weight Tank ET
Propellants	LOX / LH2
Gross Propellant	1,621,191lb (735,360kg)
Usable Ascent Propellant	1,604,979lb (728,006kg)
Unusable Residuals	16,047lb (7,279kg)
In-Flight Losses	325lb (147kg)
Propellant Offload	0.00%
Stage pmf	0.9107
Dry Mass	140,489lb (63,725kg)
Burnout Mass	156,536lb (71,004kg)
# Engines / Type	3 / SSME-Block-II
Engine Thrust (@ 104.5%) SL	392,326lbf (177,956kgf / 1,745,155N)
Vac	490,847lbf (222,644kgf / 2,183,396N)
Engine Isp (@ 104.5%) SL	361.4s
Vac	452.2s
Mission Power Level	104.5%
Core Burn Time	512.1s

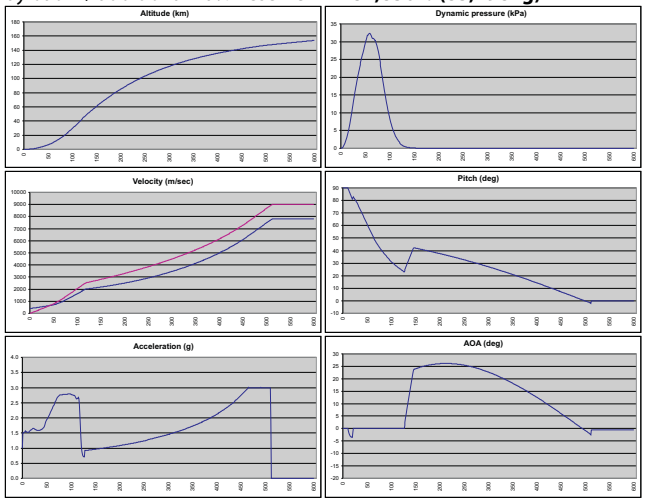


DYNAMICS — Blackzone Safe Trajectory

Thrust : Weight @ Liftoff	1.513 : 1
Max Dynamic Pressure	674.6psf (32,301Pa)
Max g's During Ascent	3.00g
Insertion Altitude	79.9nmi (147.9km)

ASCENT PERFORMANCE

Delivery Orbit	30.0 x 100.0nmi, 29.0°
Payload w/ regular NASA GR&A's	208,700lb (94,665kg)
Payload w/ additional 10% Reserve	**187,830lb (85,198kg)**



Work In Progress
8th June 2009

* ASE is part of the Payload, not additional