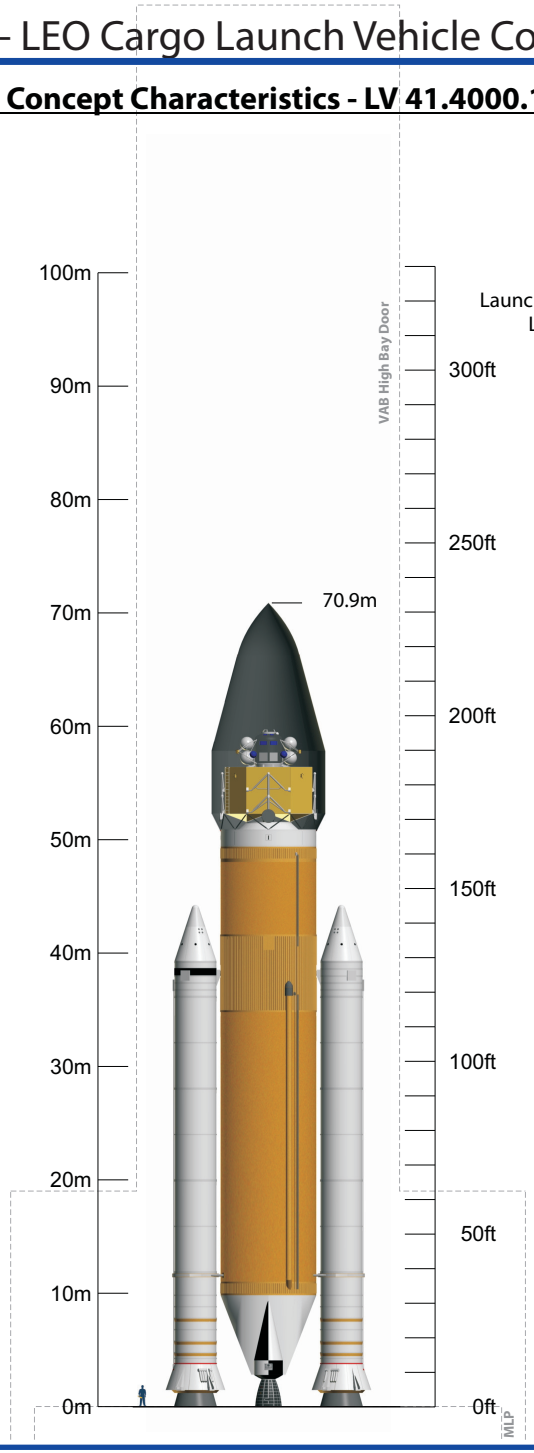
DIRECT v3

Jupiter-130 - LEO Cargo Launch Vehicle Configuration

Vehicle Concept Characteristics - LV 41.4000.10051



Launch Site	**KSC LC-39 (Latitude: 28.6084°)**
GLOW	**4,558,182lb (2,067,556kg)**
Payload Fairing	32.8 x 18.4ft (10.0 x 5.6m)
Payload Envelope	30.2 x 18.4ft (9.2 x 5.6m)
Payload Fairing Jettison Mass	12,571lb (5,702kg)
Payload Fairing Jettison	After Orbital Insertion
Launch Abort System Jettison Mass	16,083lb (7,295kg)
Launch Abort System Jettison	259.0s @ 57.9nmi

BOOSTERS (each)

Design Heritage	Shuttle RSRM - Flown Unchanged
Propellants	PBAN
Usable Propellant	1,111,604lb (504,215kg)
Stage pmf	0.8561
Dry Mass	183,948lb (83,437kg)
Burnout Mass	186,864lb (84,760kg)
# Boosters / Type	2 / 4-segment Shuttle RSRM
Booster Thrust (@ 0.7s) SL	2,892,912lbf (1,312,203kgf / 12,868,314N)
Vac	3,142,302lbf (1,425,324kgf / 13,977,656N)
Booster Isp (@ 0.7s) SL	237.0s
Vac	269.1s
Booster Burn Time	123.8s

CORE STAGE

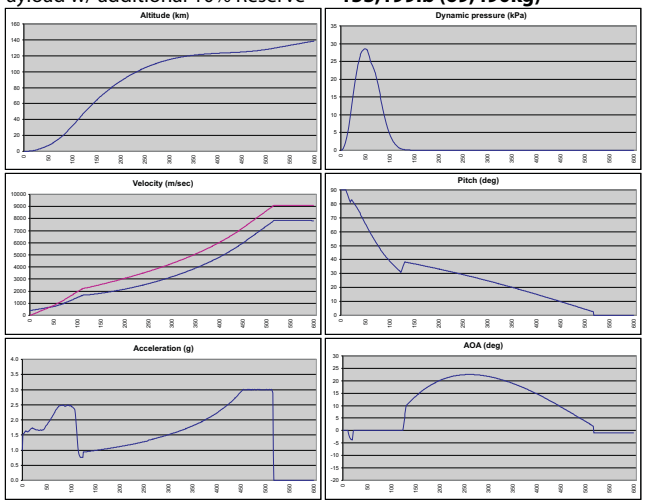
Design Heritage	Shuttle Super Light Weight Tank ET
Propellants	LOX / LH2
Gross Propellant	1,621,191lb (735,360kg)
Usable Ascent Propellant	1,604,979lb (728,006kg)
Unusable Residuals	16,047lb (7,279kg)
In-Flight Losses	325lb (147kg)
Propellant Offload	0.00%
Stage pmf	0.9107
Dry Mass	140,489lb (63,725kg)
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	517.1s

DYNAMICS

Thrust : Weight @ Liftoff	1.528 : 1
Max Dynamic Pressure	597.4psf (28,602Pa)
Max g's During Ascent	3.00g
Insertion Altitude	70.0nmi (129.6km)

ASCENT PERFORMANCE

Delivery Orbit	30.0 x 130.0nmi, 29.0°
Payload w/ regular NASA GR&A's	170,221lb (77,211kg)
Payload w/ additional 10% Reserve	**153,199lb (69,490kg)**



Work In Progress
6th June 2009

* ASE is part of the Payload, not additional