



General Information:

Boeing 737-300 / 400 / 500 / 600 / 700 / 800
737-300 737-400 737-500 737-600 737-700 737-800

Dimensions:

Length	109' 7"	119' 7"	101' 9"	102' 4"	110' 2"	129' 6"
Wing Span	94' 9"	94' 9"	94' 9"	112' 6"	112' 6"	112' 6"
Height	36' 6"	36' 6"	36' 6"	41' 3"	41' 2"	41' 2"

Weights (lbs):

Empty	72,490	76,200	70,150	80,350	82,875	91,463
Fuel	35,745	42,370	35,745	46,290	46,290	46,290
Payload	35,346	29,194	21,609	21,609	25,600	32,391
MTOW	124,500	138,500	115,500	143,523	153,027	172,475
MLW	114,000	121,000	110,000	120,503	128,022	144,009

Engines:737-300

- 2*89kN CFM International CFM56-3C-1 Turbofans (2*20,025 lb) thrust or
- 2*98kN CFM International CFM56-3C-1 Turbofans (2*22,050 lb) thrust

737-400

- 2*98kN CFM International CFM56-3C-1 Turbofans (2*22,050 lb) thrust or
- 2*104.5kN CFM International CFM56-3C-1 Turbofans (2*23,500 lb) thrust

737-500

- 2*82.3kN CFM International CFM56-3C-1 Turbofans (2 * 18,500 lb.) thrust or
- 2*89kN CFM International CFM56-3C-1 Turbofans (2*20,025 lb) thrust

737-600

- 2*82kN CFM International CFM56-7B18 Turbofans (2 * 18,450 lb.) thrust

737-700

- 2*89kN CFM International CFM56-7B20 Turbofans (2*20,025 lb) thrust or
- 2*98kN CFM International CFM56-7B22 Turbofans (2*22,050 lb) thrust or
- 2*107kN CFM International CFM56-7B24 Turbofans (2*24,075 lb) thrust

737-800

- 2*107kN CFM International CFM56-7B24 Turbofans (2*24,075 lb) thrust or
- 2*117.5kN CFM International CFM56-7B26 Turbofans (2*26438 lb) thrust

Operating Performance: 737-300 / 400 / 500 / 600 / 700 / 800

- Mno 0.78-0.80 Mach Normal Operating Speed
- Mmo 0.82-0.84 MachMax. Operating Speed
- Mne MachNever Exceed Speed
- Vmo480-490 KIASMax. Operating Speed IAS
- Vat135-140 knotsLanding @ Runway Threshold Speed @ MLW full flap/Gear down

*** DO NOT Exceed 250kts @ or Below 10,000ft Altitude.***

Take-off speed@ MTOW:

- V1 135-140kts @ flap2/3 (V1 is the go or no-go decision speed)
- VR 145kts (VR is the rotation speed ie lift-off speed)

- V2 155 - 165kts (V2 is the safe climb-out speed)

ILS & Approach speed @ MLW:

- 180 kts Flap2 (Kyb 2) to full flap/gear down @ Vat 135 - 140 kts
- Vat = 1.30 Vso (Vso is stall speed @ full flap/gear down)

Cruise Speeds:

- Max. Cruise speed 470-480 KTAS @ cruise altitude 30,000 - 35,000ft depending on weight
- Long Range Cruise speed 435 - 450 KTAS Cruise Altitude 30,000 - 35,000ft depending on weight.
- Typical Cruise Speed is 0.78 - 0.84 Mach @ FL300 - FL350

When flying long routes (over 2hrs) with MTOW, climb to FL300 & hold Alt with cruise speed 0.80 - 0.81 Mach , then fly that level for 30 min. then climb to FL310 - 320 @500 fpm and so on until you reach FL350 @ 0.78 - 0.82 Mach

Try not exceed 91% N1 during cruise in order to have available thrust for emergencies & be more efficient with fuel burn. The reason I mentioned the above procedure with X-Plane is to avoid too much nose pitch up attitude which put the aircraft wing @ higher angle of attack causing speed bleed leading to a clean stall if you are not careful.

The time taken between cruise climb is important because the aircraft will burn fuel (losing weight), your speed will gradually increase @ the same N1 setting , your aircraft pitch up will decrease helping you for the next cruise climb. Rate of climb at these alts should be between 300-500 fpm in order not to lose speed rapidly. The more you climb to FL350 the more the air density is less the better the engine fuel consumption (more range)& the less is thrust.

I usually output data for N1 on the screen & switch the EICAS to fuel management to observe aircraft status on fuel burn & range.

You should carry fuel enough for the flight + 40mins for diversions & emergencies i.e. if your trip is 2hrs long, you load fuel for the required 2hrs flight plus fuel for an extra 40 min. You should know your aircraft's average fuel consumption for the type of engines fitted with in order to determine the fuel weight required for the flight. Remember that weight is drag, drag is more fuel burn which costs money (for virtual pilots flying for virtual airlines:), so do not carry fuel more than you need. You have a destination to go to & MLW limit. You do not want to arrive to your destination with total weight above MLW!

FAR Field Lengths

	Take-off	Landing
737-300	7,500 ft	4,700 ft
737-400	8,740 ft	5,050 ft
737-500	8,640 ft	4,450 ft
737-600	6,160 ft	4,160 ft
737-700	6,698 ft	4,448 ft
737-800	7,596 ft	5,248 ft

Take-off Check List

- Allowable Take-off Weight (MTOW or lower)
- Flaps Set
- Trim Set
- Autopilot Controls Off

Final Landing Check List

- Gear Down/Green
- Flaps/Slats Set/ 3 or 4
- Speed Brakes Armed
- ILS freq/Glide Slope Tuned

During Descent Check

- Check Allowable Landing Weight (MLW 210,000 lb. or lower)
- Review your ILS approach & Runway heading

ROC Rate Of Climb

Below 10,000ft

- max. 4000 fpm @ 250kts

*** DO NOT Exceed 250kts @ or Below 10,000ft Altitude.***

Above 10,000ft to Cruise Flight Level FL

- 2200fpm from 10,000 - 20,000ft @ 280 - 360kts
- 1800 - 1500fpm from 20,000 - 26,000ft
- 1400 - 500fpm from 26,000 - 35,000 ft depending on weight.

ROD Rate Of Descent

- From Cruise FL to 10,000ft hold 0.79 Mach until 290 kts, reduce thrust for 2500 fpm
- Below 10,000ft rate of descent varies with ATC requirements, but is between 800 - 3000fpm
- In normal conditions 250kts idle descent, then slow & configure speed so as to not add power until on Glide Slope
- Glide Slope descend is between 1500 - 500fpm depending on your situation
- At Runway Threshold descend between 400 - 200fpm for a smooth touchdown landing

MLW = Maximum Landing Weight

MTO = Maximum Take-off Weight

V2 = Safe Climb-out speed (The speed after Vr, Rotation speed or Lift-off speed)

Vat = Landing speed at runway threshold Flap/Gear down (X-Plane @ 50'...25'...10')

Vapr= Approach Speed , just add 5-10kts to Vat with flap/gear down @ MLW or less

Vno = Normal Operating Speed

Vmo = Maximum Operating Speed

Vne = Never Exceed Speed

FL350 = Flight Level 35,000'

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Thanks to Mohammed Gazzawi, Designer/Test Pilot MGXP