Boeing Offers a Complete Freighter Product Line

Airlines Can Match Capacity to Demand

- 747-200F
- 747-400 Freighter
- MD-11 Freighter
- DC-10-30 Freighter
- DC-10-10 Freighter
- 767-300 Freighter
- 727-200 Freighter
- 757-200 Freighter
- 727-100 Freighter
- 737-700 Convertible

- Typical mission rules
- Weight limited payload

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MD-11F Main Deck Capability

(3) 96- by 238.5-in pallets
(20) 88- or 96- by 125-in pallets
Capacity with 96- by 125-in pallets (5 load profiles) = 15,296 ft³ (433.2 m³)

(4) 96- by 196-in pallets
(19) 88- or 96- by 125-in pallets
Capacity with 96- by 125-in pallets (5 load profiles) = 14,994 ft³ (424.6 m³)
(26) 88- x 125-in pallets (3 load profiles) = 14,538 ft³ (411.7 m³)
(26) 96- x 125-in pallets (5 load profiles) = 15,530 ft³ (439.8 m³)

(34) 88- x 108-in pallets (3 load profiles) = 15,537 ft³ (440.0 m³)

Flexibility to carry existing standard pallets
MD-11F Main Deck Engine Transport

Loadable locations for engine transport device with MD-11, 767, or 747 engines

Loading technique
Normal cargo door operation employs an independent hydraulic system with pressure supplied by an electrically driven pump.

If electrical power is not available, the cargo door can be operated with a manual hydraulic pump.
MD-11F Main Deck Capability

- 88- by 125-in pallets
- 88- by 108-in pallets
- 96- by 125-in pallets
- M1 containers (option)
- 96- by 196-in (16 ft) or 96- by 238.5-in (20 ft) pallets
- Animal pens
- 88- by 125-in type A containers
- LD-11 containers
- LD-7, LD-9, LD-10 containers
- 60.4/-88/-96- by 125-in pallets
- 60.4- by 61.5-in pallets
- 88- by 108-in pallets (option)
- LD-1, LD-2, LD-3 containers
- LD-6 containers
- CF6 or PW4000 engine on pallet
- LD-4, LD-5 containers
- Auto pallets
MD-11F Main Deck Capability

96- by 125-in Containers—Main Cabin

Position 1L shown
Position 1R opposite

Position 12L shown
Position 12R opposite

Position 11L shown
Position 11R opposite

Positions 2L–10L shown
Positions 2R–10R opposite

Positions 13C and 14C shown

- Dimensions in inches

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MD-11F Main Deck Engine Transport
MD-11F Lower Hold Compartments

- 30- x 36-in (.76- x .91-m) aft bulk door
- Four 96- x 125-in (2.44- x 3.18-m) pallets with optional 104-in (2.64-m) door
- 32 LD-3 containers (14 + 18)
- Six 96- x 125-in (2.44- x 3.18-m) pallets
- 70- x 66-in (1.78- x 1.68-m) door
- Four 88- x 125-in (2.24- x 3.18-m) pallets
- Plus two LD-3 containers (with optional 104-in (2.64-m) door)

<table>
<thead>
<tr>
<th>Container and pallet volumes</th>
<th>88 x 125 ln (2.24 x 3.18 m)</th>
<th>LD-3</th>
<th>96 x 125 ln (2.44 x 3.18 m)</th>
<th>Gross volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward</td>
<td>(6) 2,232 ft³ (63.2 m³)</td>
<td>(18)</td>
<td>(6) 2,442 ft³ (69.1 m³)</td>
<td>3,655 ft³ (103.5 m³)</td>
</tr>
<tr>
<td>Center</td>
<td>(4) +2 LD-3s 1,804 ft² (51.1 m²)</td>
<td>(14)</td>
<td>(4) 1,628 ft² (46.1 m²)</td>
<td>2,685 ft² (76.0 m²)</td>
</tr>
<tr>
<td>With opt. door</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aft bulk</td>
<td>510 ft³ (14.4 m³)</td>
<td>510 ft³ (14.4 m³)</td>
<td>510 ft³ (14.4 m³)</td>
<td>510 ft³ (14.4 m³)</td>
</tr>
<tr>
<td>Highest total vol</td>
<td>4,546 ft³ (128.7 m³)</td>
<td>5,566 ft³ (157.6 m³)</td>
<td>4,580 ft³ (129.7 m³)</td>
<td>6,850 ft³ (194.0 m³)</td>
</tr>
</tbody>
</table>
MD-11F Forward Lower Hold Compartment

- Side guide rail
- Tie-down points (bulk cargo)
- Anti-rollout doorway restraint latch
- Doorway self-retracting lateral/longitudinal powered roller
- Conveyor roller
- Doorway lateral guide
- Longitudinal spring-loaded powered roller
- Centerline lateral restraint latch
- Doorway omni-directional rollers
- Centerline conveyor roller
# MD-11F Performance Summary

## General Electric Engines

<table>
<thead>
<tr>
<th>Cargo payload**</th>
<th>lb (kg)</th>
<th>Basic</th>
<th>Option*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>190,753 (86,526)</td>
<td>200,309 (90,860)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel capacity</th>
<th>U.S. gal (L)</th>
<th>38,615 (146,169)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Engines</th>
<th>Sea-level static thrust to 86°F</th>
<th>lb</th>
<th>CF6-80C2D1F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>61,500</td>
</tr>
</tbody>
</table>

| Maximum taxi weight | lb (kg) | 605,500 (274,655) | 633,000 (287,129) |
| Maximum takeoff weight | lb (kg) | 602,500 (273,294) | 630,500 (285,995) |
| Maximum landing weight | lb (kg) | 471,500 (213,872) | 491,500 (222,944) |
| Maximum zero fuel weight | lb (kg) | 451,300 (204,800) | 461,300 (209,246) |
| Operating empty weight | lb (kg) | 260,547 (118,184) | 260,991 (118,386) |
| Tare weight | lb (kg) | 10,700 (4,854) | 10,700 (4,854) |

| Design range, structural limit payload | nmi (km) | 3,264 (6,045) | 3,592 (6,652) |
| Cruise Mach number | 0.83 | 0.83 |
| Takeoff field length, SL, 86°F/30°C, MTOW | ft (m) | 9,726 (2,964) | 10,800 (3,292) |
| Initial cruise altitude, MTOW | ft | 33,300 | 32,200 |
| Landing field length, MLW | Flaps 35° | ft (m) | 8,060 (2,457) | 8,350 (2,545) |
| Flaps 50° | ft (m) | 7,400 (2,255) | 7,650 (2,332) |
| Approach speed, MLW | kn | 155 | 158 |

* Typical mission rules
* OEW includes tare weight
* Optional MTOWs: 605,500 lb, 610,000 lb, 618,000 lb, 625,500 lb, and 630,500 lb
* Highest available optional weight
**Structural limit payload—net payload
# MD-11F Performance Summary

## Pratt & Whitney Engines

<table>
<thead>
<tr>
<th>Cargo payload**</th>
<th>lb (kg)</th>
<th>191,461 (86,847)</th>
<th>201,025 (91,185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel capacity</td>
<td>U.S. gal(L)</td>
<td>38,615 (146,169)</td>
<td></td>
</tr>
<tr>
<td>Engines</td>
<td></td>
<td></td>
<td>PW4460/PW4462</td>
</tr>
<tr>
<td>Sea-level static thrust to 86°F</td>
<td>lb</td>
<td>605,500 (274,655)</td>
<td>633,000 (287,129)</td>
</tr>
<tr>
<td>Maximum taxi weight</td>
<td>lb (kg)</td>
<td>602,500 (273,294)</td>
<td>630,500 (285,995)</td>
</tr>
<tr>
<td>Maximum takeoff weight</td>
<td>lb (kg)</td>
<td>471,500 (213,872)</td>
<td>491,500 (222,944)</td>
</tr>
<tr>
<td>Maximum landing weight</td>
<td>lb (kg)</td>
<td>451,300 (204,800)</td>
<td>461,300 (209,246)</td>
</tr>
<tr>
<td>Maximum zero fuel weight</td>
<td>lb (kg)</td>
<td>259,831 (117,859)</td>
<td>260,275 (118,061)</td>
</tr>
<tr>
<td>Operating empty weight</td>
<td>lb (kg)</td>
<td>10,700 (4,854)</td>
<td>10,700 (4,854)</td>
</tr>
<tr>
<td>Tare weight</td>
<td>lb (kg)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Design range, structural limit payload nmi (km) 3,209 (5,943) 3,533 (6,543)

### Cruise Mach number
- 0.83
- 0.83

### Takeoff field length, SL, 86°F/30°C, MTOW
- PW4460 ft (m) 9,800 (2,987) 10,950 (3,337)
- PW4462 ft (m) 9,460 (2,883) 10,450 (3,185)

### Initial cruise altitude, MTOW ft
- 33,300
- 32,200

### Landing field length, MLW
- Flaps 35° ft (m) 8,175 (2,492) 8,460 (2,579)
- Flaps 50° ft (m) 7,500 (2,286) 7,760 (2,365)

### Approach speed, MLW kn 155 158

- **Typical mission rules**
- OEW includes tare weight
- Optional MTOWs: 605,500 lb, 610,000 lb, 618,000 lb, 625,500 lb, and 630,500 lb
- *Highest available optional weight
- **Structural limit payload—net payload**

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MD-11F Payload-Range Capability

Pratt & Whitney Engines

- Maximum Volume Payload: 199,570 lb (90,520 kg)
- MZFW: 461,300 lb (209,246 kg)
- MTOW: 630,500 lb (285,995 kg)
- Fuel capacity: 31,675 US gal (116,190 L)

• Typical mission rules
• Tare weight included in OEW

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MD-11F Payload-Range Capability

General Electric Engines

- Typical mission rules
- Tare weight included in OEW

* Highest available option MTOW

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MD-11F Mission Profile

Typical Mission Rules

- Standard day
- Fuel density 6.7 lb/U.S. gal
- Cruise at LRC
- Nominal performance

Mission

- Taxi out (9 min)
- Takeoff to 35 ft
- Climb to 1,500 ft and accelerate to 250 kn
- Climb to 10,000 ft at 250 kn
- Accelerate to climb speed
- Climb
- Cruise
- Descent to 1,500 ft
- Approach and land (5 min)
- Taxi in (5 min from reserves)

Reserves

- 5% Flight fuel
- Missed approach
- Economy climb
- Economy descent
- Approach and land (5 min)
- 30 min hold at 1,500 ft

Still air range

Flight time & fuel

Block time & fuel

200 nmi
GE CF6-80C2D1F Engines

MD-11F
630,500-lb (285,985-kg) MTOW\(^*\)
200,309-lb (90,860-kg) cargo

MD-11F
602,500-lb (273,294-kg) MTOW
190,753-lb (86,526-kg) cargo

- Typical mission rules
- Maximum structural payload
- 85% annual winds
- Airways and traffic allowances included
- \(^*\) Highest available optional weight
MD-11F Range Capability

GE CF6-80C2D1F Engines

MD-11F
630,500-lb (285,895-kg) MTOW
200,309-lb (90,860-kg) cargo

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602,500-lb (273,294-kg) MTOW
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- Typical mission rules
- Maximum structural payload
- 85% annual winds
- Airways and traffic allowances included
* Highest available optional weight

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MD-11F Range Capability

GE CF6-80C2D1F Engines

MD-11F
630,600-lb (285,985-kg) MTOW*
200,309-lb (90,360-kg) cargo

MD-11F
602,600-lb (273,294-kg) MTOW
190,753-lb (86,526-kg) cargo

- Typical mission rules
- Maximum structural payload
- 85% annual winds
- Airways and traffic allowances included
* Highest available optional weight
MD-11F Range Capability

GE CF6-80C2D1F Engines

MD-11F
630,500-lb (285,995-kg) MTOW
200,309-lb (90,860-kg) cargo

MD-11F
602,500-lb (273,294-kg) MTOW
190,753-lb (86,526-kg) cargo

* Typical mission rules
* Maximum structural payload
* 85% annual winds
* Airways and traffic allowances included
* Highest available optional weight
MD-11 Flight Deck