The Challenger Multi-role Aircraft is a special mission variant of the Bombardier Challenger 650 business jet platform, equipped with mission-specific systems and features to meet the needs of our customers and their multiple, diverse and demanding missions. The Challenger Multi-role Aircraft was designed to minimize changes to the aircraft external configuration, thus maintaining a clean aerodynamic contour. The aircraft provides outstanding capabilities in Search and Rescue, Maritime Patrol, Medical Evacuation, VIP transportation and other specific duties. The ease with which the Challenger Multi-role Aircraft can be reconfigured makes it an effective multi-purpose aircraft. Aerial Photography and Weather Monitoring configurations are also provided, making the versatility of this aircraft truly one-of-a-kind.

Built on the industry’s best selling large-category business jet, with an accumulation of over 5 million flight hours and airliner-level system redundancy, the Challenger 600 series aircraft sets the benchmark for dispatch reliability with numbers averaging above 99.9%. Bombardier’s Vision Flight Deck provides pilots with a new cockpit experience and unprecedented levels of both comfort and control to maximize crew effectiveness. Enhanced higher-thrust engines offer increased payload and runway capabilities. With its 4,000 nm (7,408 km) range capability, the new Challenger Multi-role Aircraft provides fast access to the search/patrol area and more time on station. The aircraft speed allows faster search/patrol area coverage, thus improving the chance of finding the target faster.
## OVERALL SPECIFICATION

### ACCOMMODATION
- Crew (minimum): 2
- Passengers (std accommodation): 10

### ENGINES
- Number: 2
- Make / Model: GE CF34-3B MTO
- Maximum Take-Off Thrust (Flat rated to ISA + 15°C, SL): 9,220 lbf (41.0 kN)
- Normal Take-off Thrust (Flat rated to ISA + 15°C, SL): 8,729 lbf (38.84 kN)
- Maintenance Program: On Condition

### PRESSURIZATION
- Maximum Altitude with Sea Level Cabin Pressure: 23,100 ft (7,041 m)
- Cabin Altitude at Maximum Altitude: 7,000 ft (2,134 m)

### FUEL CAPACITY
- Overall Capacity: 2,963 US gal (11,216 l)

### AUXILIARY POWER UNIT
- Make / Model: Honeywell 36-150(CL)
- Maximum Operational Altitude: 20,000 ft (6,096 m)

### EXTERIOR DIMENSIONS
- Length: 68 ft 5 in (20.9 m)
- Wingspan: 64 ft 4 in (19.6 m)
- Height: 20 ft 8 in (6.3 m)

## PERFORMANCE

### TAKE-OFF (± 3%)4
- Take-off Field Length (SL, MTOW): 5,640 ft (1,720 m)

### LANDING (± 3%)4
- Landing Distance (SL, MLW): 2,775 ft (846 m)

### CRUISE PERFORMANCE (± 3%)
- High Speed Cruise: M 0.82 (471 ktas)
- Long Range Cruise Speed: M 0.74 (425 ktas)
- Maximum Certified Operating Altitude: 41,000 ft (12,497 m)
- Initial Cruise Altitude after MTOW Departure: 37,000 ft (11,278 m)

### NOISE
- Meets stage 3 limit\(^5\)

### RANGE (± 3%)6 CRUISE SPEED OF M 0.74
- At 6 Passengers (1,200 lb. payload): 4,000 nm (7,408 km)

## WEIGHT AND BALANCE

### DESIGN WEIGHTS AND CAPACITIES1
- A Maximum Ramp Weight: 48,300 lb (21,909 kg)
- B Maximum Take-Off Weight: 48,200 lb (21,863 kg)
- C Maximum Landing Weight: 38,000 lb (17,237 kg)
- D Maximum Zero Fuel Weight: 32,000 lb (14,515 kg)
- E Basic Operating Weight (BOW) (± 2%)2: 27,150 lb (12,315 kg)
- F Maximum Fuel Weight\(^4\): 20,000 lb (9,072 kg)
- Maximum Payload (D-E): 4,850 lb (2,200 kg)
- Payload with Maximum Fuel (A-E-F): 1,150 lb (522 kg)
- Fuel with Maximum Payload (A-D): 16,300 lb (7,394 kg)

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1 Under certain operating conditions
Mission operator station
- Situational display
- Search radar, EO/IR, launcher controls
- Mission Communications & Navigation
- Video recording & Real-time video downlink
- Panoramic observation window

Observer station
- Situational Display
- Mission Communications
- Panoramic observation window

Reconfigurable area
- Medical transport
- Dropsonde suite
- Passenger Transport (2 seats)

Dropmaster Suite
- Smoke marker automatic launcher
- Dropsonde launcher
- Air-operable door
- Droppable liferaft (3)
- Storage for smoke markers, sea dye, radio buoys and dropsonde

Passenger transport / crew rest area

Avionics racks / storage

Retractable EO/IR sensor

Lavatory

Not shown are the cockpit, cabin entrance, galley, wardrobe and jumpseat.
MISSION SYSTEM

The Mission System architecture makes extensive use of Commercial Off The Shelf (COTS) components/software with state-of-the-art Human Machine Interface offering exceptional graphics capability and computer throughput performance.

The Mission System is comprised of two workstations, one for the mission tactical operator and one for the mission observer. The mission tactical operator workstation is equipped with multifunction, integrated display and control units, with a reduced number of dedicated control panels and monitors taking advantage of integrated sensor management. The observer workstation is equipped with a repeater screen for tactical situational awareness and radio controls.

MEDEVAC SUITE

The medical suite consists of three (3) main components: Medical Bed, Patient Loading System and a Medical Oxygen System.

The medical bed is further equipped with medical equipment such as:

- Air Ventilator
- Color Monitoring Device
- External Defibrillator with pacing function
- Infusion pump
- Syringe Pump
- Vacuum Suction Unit with regulator control
The aircraft is a pressurized, fixed low-wing monoplane capable of achieving a nominal 4,000* nm mission range while carrying 6 passengers under certain conditions described in the sections below.

All performance data are based on a standard aircraft and a standard (ISA) conditions day. Options, aircraft customization and/or foreign certification requirements requested by Buyer may result in a change in performance.

1. Take-off and landing performance are based on a hard dry surface with zero slope, zero wind and the most favorable use of brakes, flaps, spoilers, landing gear and thrust. Take-off distances are without allowances for cabin pressurization, air conditioning and ice protection. Thrust reversers are not used. Maximum take-off thrust level is considered.

2. Complies with ICAO Chapter 3, Annex 16 as well as FAR 36 Stage 3.

3. Range is provided for illustration purposes only and is determined by using NBAA range format with IFR fuel reserves in still air, based on a BOW of 27,150 lb (as further described in Section 2) with an assumption of 200 lb per passenger. Allowances are made for normal bleed air requirements for cabin pressurization and air conditioning (APU off). No allowances are made for maneuver, wind and ice protection. The center of gravity (CG) location is assumed to be at 30% Mean Aerodynamic Chord (MAC). The maximum Take-off fuel allowed is considered not being limited by airport special procedures, field length and CG. The performance is based on the use of fuel with an average lower heating value of 18,550 BTU/lb (43.147 MJ/kg) and a density of 6.75 lb/US gal (0.809 kg/l).

4. The Aircraft will be weighed upon final completion. A Weight and Balance Report including loading charts and an equipment listing will be provided as required by regulations.

5. Basic Operating Weight (BOW) and corresponding maximum payload and payload with maximum fuel are provided for illustration purposes only. The BOW assumes 1,060 lb (481 kg) of baseline operating items (such as engine oil, unusable fuel, manuals, galley and cabin supplies, live vests, water service and toilet charge, two (2) crew and crew baggage). The weight is exclusive of customer selected options and any adverse weight impacts incorporated into the production configuration from Service Bulletins (SBs) and Airworthiness Directives (ADs).

6. The Maximum Fuel Weight is based on a fuel density of 6.75 lb/US gal (0.809 kg/l).

* ± 3% as further described in Performance Section.

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