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Manufacturers notice

Attention !

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For performance data and operating limitations, reference must be made to the approved flight manual and all appropriate documents..*

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Foreword



The EC 725 is a medium weight twin engine helicopter (11 tons class) with outstanding performance that belongs to the famous Super-Puma/Cougar family. Over **550 units**, with total flight time in excess of **2,300,000 Flight Hours** have been delivered to date.

The EC 725 is a powerful and fast helicopter with long range capabilities. It has a very **large useful volume** and accommodates various seating arrangements up to **29 troops** in a spacious cabin and **2 crew members**.

Technical advancements developed by EUROCOPTER on the EC 725 include modular design of the mechanical assemblies, use of composite materials, state of the art avionics, including LCD Multi-Functions Displays, Vehicle Monitoring System and AFCS.

The EC 725 also incorporates the **new generation TURBOMECA Makila 2A** power plant that provides high performance and maximum safety, thanks to its fully **redundant dual channel FADEC system** and **blade shedding** technology.

The EC725 can be equipped with a **full de-icing system** compliant with FAR/JAR 29 regulations, to **fly in icing conditions without limitation of severity**.

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1- General Characteristics

Lay-Out

- **Minimum crew**
 - VFR : 1 pilot
 - IFR : 2 pilots
- **Troop Transport**
 - 1 chief of stick + 28 troop seats
- **VIP Transport** (in addition to the crew) :
 - 8 to 12 passengers
- **Casualty evacuation** (in addition to the crew) :
 - Up to 12 stretchers + 4 seats
- **Combat SAR**

Weights

Note : Empty weight accuracy : within $\pm 2\%$

	kg	lb
■ Empty weight, standard aircraft (including engine oil and unusable fuel)	5,445	12,005
■ Useful load	5,555	12,245
■ Maximum all-up weight	11,000	24,250
■ Maximum cargo-sling load	5,000	11,020
■ Maximum all-up weight in external load configuration	11,200	24,690

Power plant

2 TURBOMECA MAKILA 2A turboshaft engines.

Engine ratings

Power per engine, in standard atmosphere, at sea level :

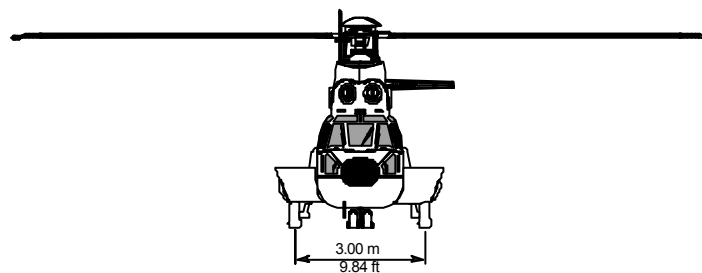
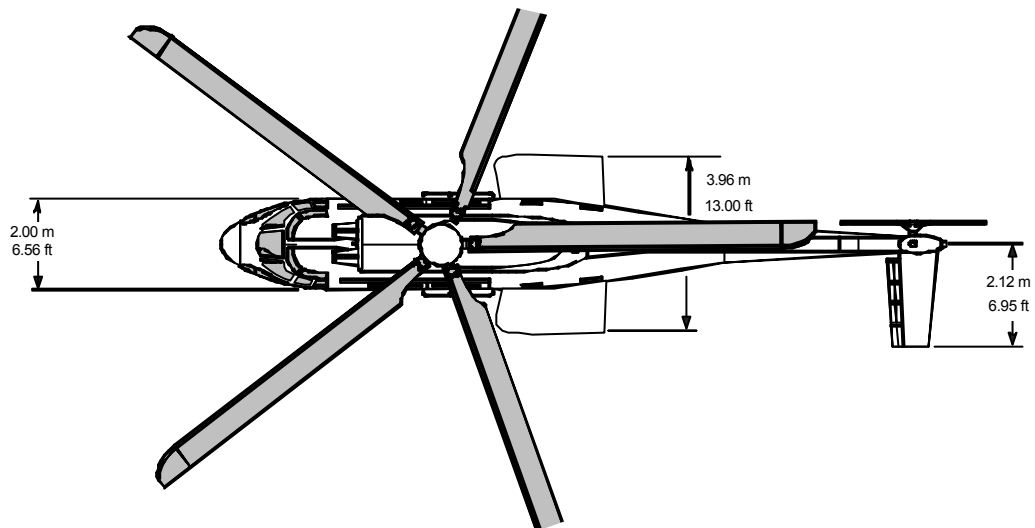
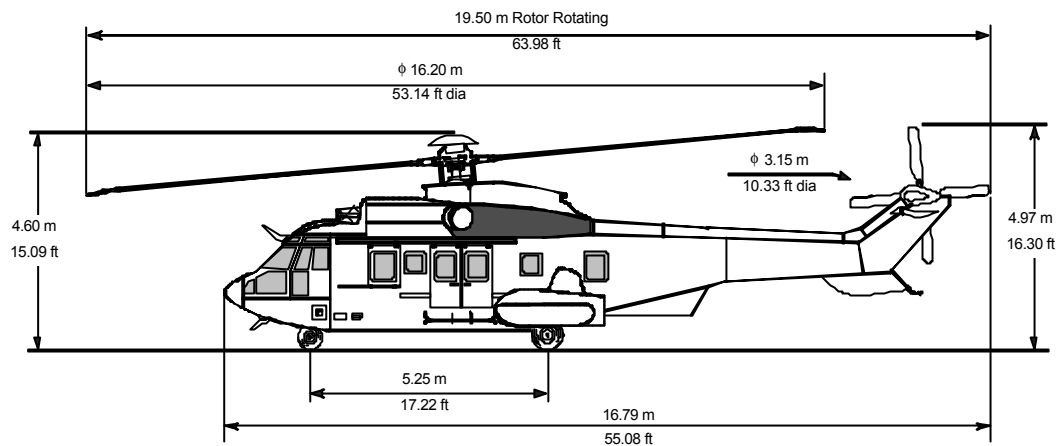
	kW	ch	shp
■ Maximum emergency power (OEI 30")	1,800	2,448	2,413
■ Intermediate emergency power (OEI 2')	1,665	2,264	2,232
■ OEI continuous power	1,616	2,198	2,167
■ Take-off power	1,566	2,129	2,100
■ Maximum continuous power	1,395	1,897	1,870

Usable Fuel capacities

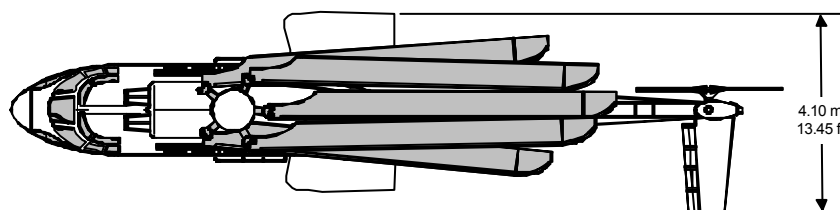
	litres	US gal.	kg	lb
■ Standard crashworthy self-sealing fuel tanks	2,537	670	2,004	4,418
■ Optional crashworthy self-sealing fuel tanks				
● Central fuel tank	308	81	243	536
● Rear jettisonable fuel tank	990	261	782	1724
■ Optional ferry fuel tanks (1 to 5)	5 x 475	5 x 126	5 x 375	5 x 826

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Main dimensions

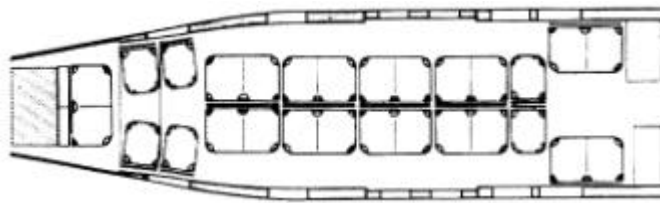


Dimensions with blades folded



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Configurations



1 - Troop transport:

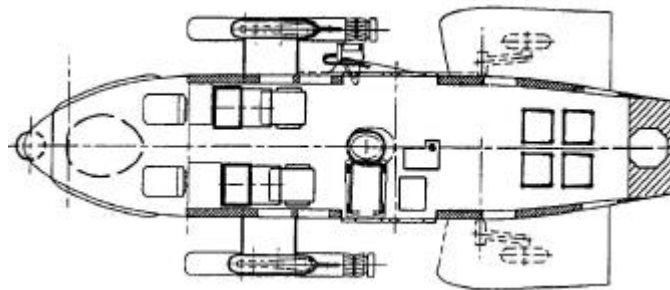
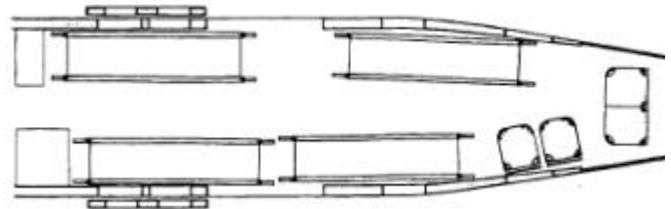
■ 28 troop seat installation

Providing the selection of the dedicated option, the EC725 can accommodate up to 28 troop seats in addition to the chief of stick and the pilots, for a total seating capacity of 31.

2 - Medevac

■ 12 stretchers casualty carrying installation

Providing the selection of the dedicated option, the EC725 can accommodate up to 12 stretchers and 4 attendant seats



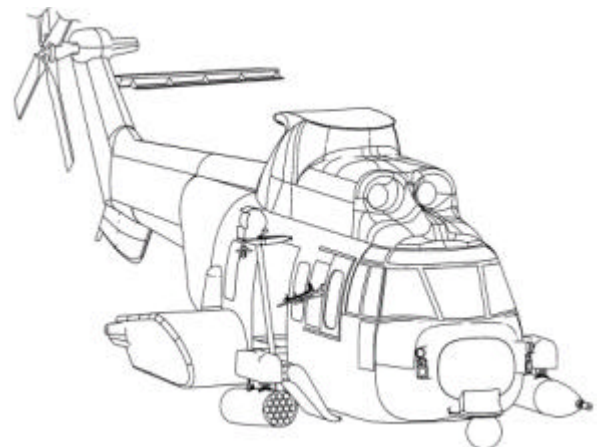
3 - Naval Mission System

■ AsuW/ASW/SAR cabin configuration

The 15.5 m³ cabin volume of the EC725 accommodate any complete suite of Naval mission system , including 2 multifunction workstations, a sonar, a sonobuoy dispenser, leaving sufficient room for additional mission equipment

4 - SAR/CSAR

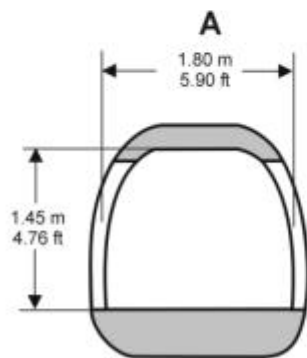
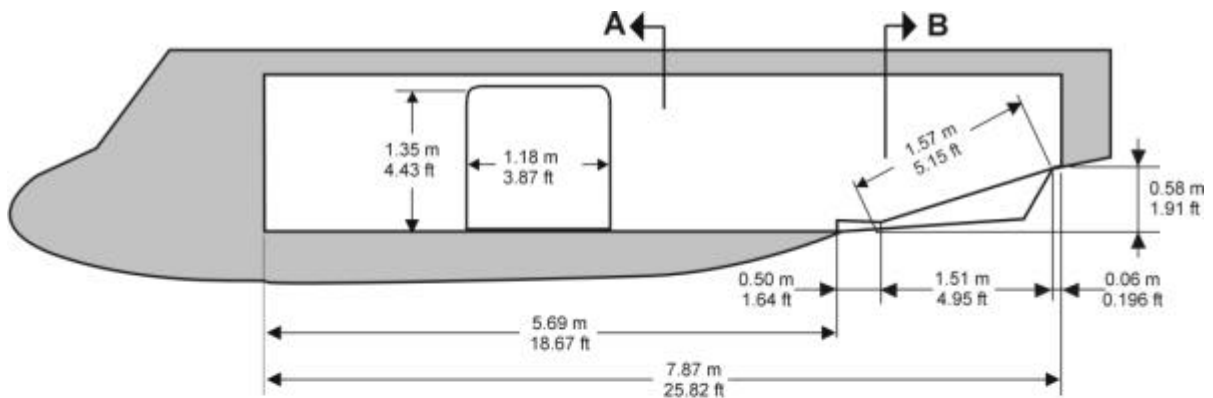
An important amount of available qualified mission equipment and installations can be fitted on EC 725 to be customised to any specific SAR and CSAR mission requirement.



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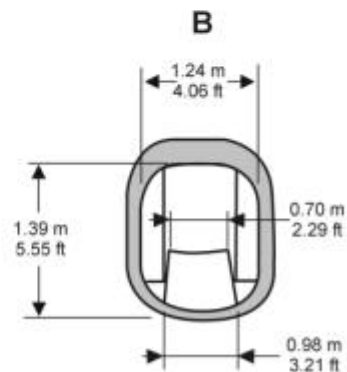
Dimensions of compartments and accesses

Cabin main dimensions



AREA AVAILABLE

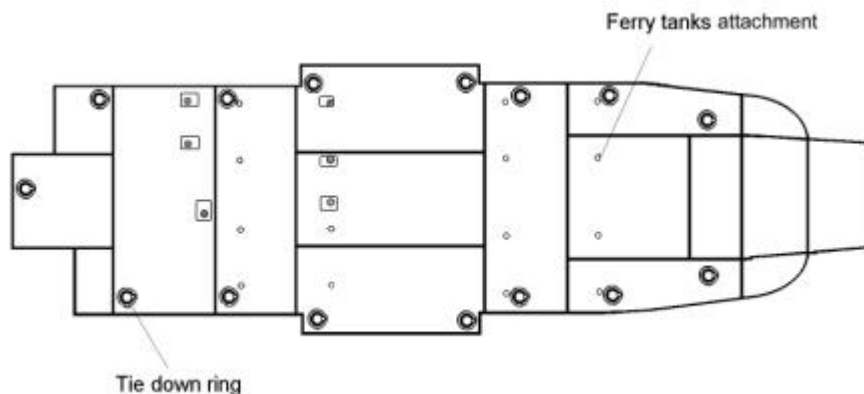
10.50 m²
112.95 sq. ft



VOLUME AVAILABLE

15.50 m³
547.30 cu. ft

Cabin floor



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Increased Power...

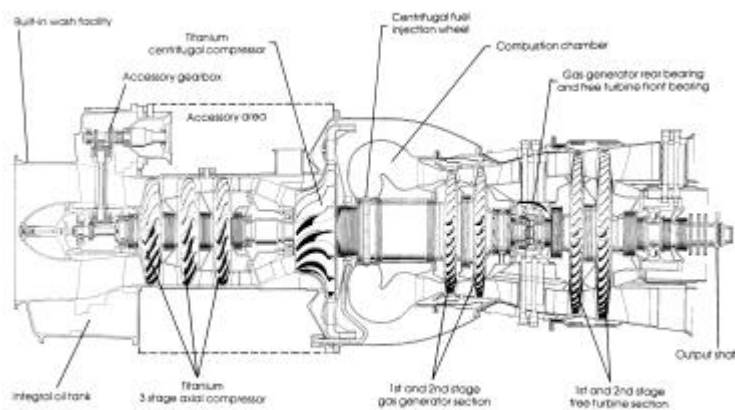
Power per engine, in standard atmosphere, at sea level :

	kW	ch	shp
■ Maximum emergency power (OEI 30")	1,800	2,448	2,413
■ Intermediate emergency power (OEI 2')	1,665	2,264	2,232
■ Take-off power	1,566	2,129	2,100
■ Maximum continuous power	1,395	1,897	1,870

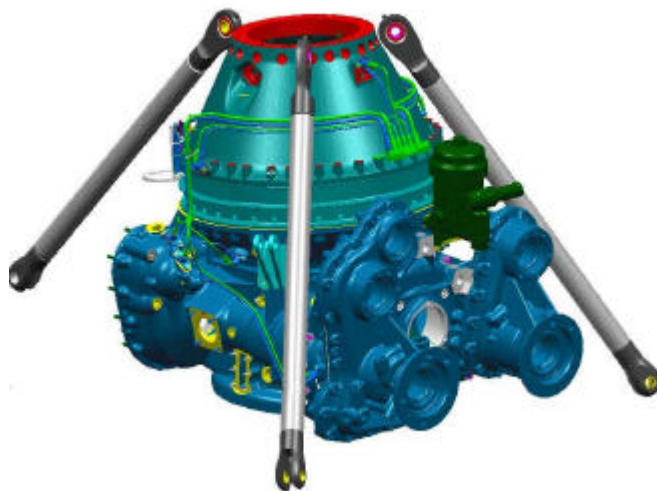
... with modular design, for easier maintenance, blade shedding technology and 2 dual channel FADECs, for increased safety

Easy to maintain and repair

The Makila 2A is composed of 5 modules, independently interchangeable to reduce downtime.



2 Dual channel FADECs
with fully automatic control (no more manual back-up mode)

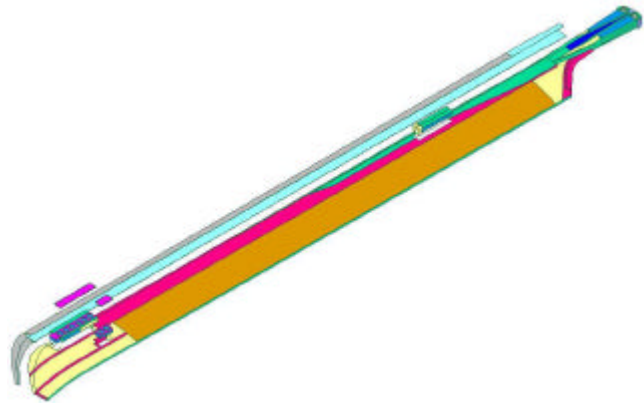


upgraded MGB :

- increased **Power**
- **30 minutes dry run** capability, with back-up lubrication spray system, compliant with **FAR 29**
- **redesigned** upper part (casing and rotor bearing)
- **reinforced** lower casing

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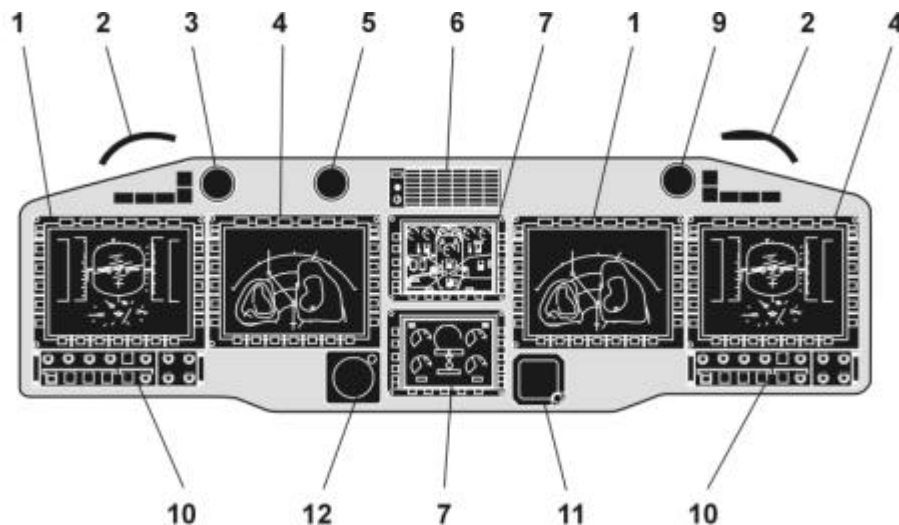
New **5 blades spheriflex** main rotor,
with improved servo actuators ...



New blade profile, multibox structure,
capable of flight in icing condition, without limitation
of severity.

Advanced Helicopter Cockpit Avionics System, implementing :

- **four 6" x 8" LCD MFDs**
- **two 4" x 5" VMS** color displays
- **one 5 ATI LCD Integrated Stand-by Instrument**
- new AFCS, ADC and AHRS



- 1,4 Piloting, Navigation and Mission Multifunction displays
- 2 Icing detector
NR/ILS button indicator
Master warning light
General alarm
Landing gear warning light
- 3 Rotor tachometer
- 5 Stop watch
- 6 Warning panel
- 7 VMS displays
- 9 Triple tachometer
- 10 Automatic Flight Control Panel (AFCP)
- 11 ISI (Integrated Stand-by Instrument)
- 12 Provision

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2- AIRCRAFT - Standard Aircraft Definition

GENERAL

- Crashworthy design fuselage including cockpit and cabin
- Composite material intermediate structure
- Monocoque tail boom with prop for tail rotor protection and stabilizer
- Front part of the tail boom arranged as a storage compartment
- Fuselage upper part used as transmission deck
- Fuselage lower part fittable with floatation gear
- Multipurpose sponsons with crashworthy self-sealing fuel tanks
- Engine cowlings serving as a work platform when in the open position
- High energy absorption, retractable, tricycle landing gear with trailing-arm main landing gear and castoring nose wheel unit
- Footsteps for climbing to the transmission deck, the cockpit and the cabin
- Built-in jacking and towing points
- Provisions for attaching gripping points
- 4 built-in attachment points for lateral external loads
- Structural and electrical capabilities for axial armament
- Fixed parts of armour plating for pilots
- Cable cutter
- Fixed parts for 3,8 tons cargo sling
- Fixed parts for hydraulic hoist
- Interior paint : night blue ; exterior per customer paint scheme (glossy or dull polyurethane finish)

COCKPIT

- 2 pilot and copilot crashworthy seats adjustable in height and fore-and-aft, complete with safety belts and extensible shoulder harnesses
- 1 third crew man jump-seat with a 3 point extensible safety harness
- 3 sun vizors
- Dual flight control
- Steadying rods at pilot station
- Engine digital controls
- Master armament switch
- Master cut-off switches
- Rotor brake control
- Landing gear control
- Differential wheel brakes at pilot and copilot stations
- 2 map cases on pilot and copilot doors
- 1 Flight Manual
- 1 ash-tray
- 1 hand fire extinguisher
- De-iced pilot and copilot windshield panes
- 2 hot air diffusers
- 3 windshield pane demisting ramps
- 4 adjustable ventilation outlets
- Pilot and copilot windshield wipers
- Windshield washer
- De-iced cockpit center pane with wiper
- 2 jettisonable doors with door-stops
- 5 28 V receptacles
- Access to cabin with screen off curtain

INSTRUMENTS

- 4 multifunction 6" x 8" landscape LCD displays
- 2 display and autopilot control panels
- 1 Integrated Standby Instrument (ISI) for airspeed, altimeter and gyro-horizon back-up display
- 1 redundant Vehicle Monitoring System (VMS) with one redundant Aircraft Management Computer (AMC) and two 4" x 5" LCD displays
- 1 stop watch
- 1 rotor and free turbines 1 and 2 triple tachometer
- 1 warning panel
- 1 fuel circuit control and monitoring panel with 2 fuel content displays
- 1 AC/DC control box
- 1 engine starting panel
- 1 landing gear position control and monitoring panel
- 2 heated pilot static and total heads
- 1 ventilation/heating system control
- 1 Intercommunication system – 4 control boxes
- 1 Radio management system, with 2 CDU

CABIN

- Re-inforced floor fitted with 15 cargo tie-down rings, capable of accommodating various types of seat and cabin additional fuel tanks available on option
- 2 sliding double doors and front sliding windows
- 12 jettisonable windows (including 4 on the sliding doors)
- 1 rear step door
- 1 hand fire-extinguisher
- Upholstery (dark padded cloth)
- Heating and ventilation (upper outlets adjustable for direction and flow, plus 8 bottom adjustable for flow)
- Floor hatch for cargo sling pole
- Fixed parts for 28 troop seat installation
- Structural provisions for casualty installation

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POWER PLANT

- 2 TURBOMECA MAKILA 2A 1800 kW (2448 ch - 2413 shp) maximum emergency power, blade shedding, turbines engines in two separate groups with own starting, feeding, lubricating, and cooling systems
- 2 redundant full digital FADEC including a O.E.I. training mode
- 1 fuel system of 2,537 litres (670 US gal.) usable capacity comprising 8 self sealing and crashworthy tanks, arranged in 2 groups, 4 booster pumps, 3 transfer pumps and a low/high fuel warning system. The pipes are of the crashworthy type.
- Provisions for ferrying and central auxiliary tanks
- Pressure refuelling with single connector for all tanks
- 2 engine bay fire-detection systems
- 1 two-cylinder selective fire-extinguishing system
- 2 chip detectors
- Engine air intakes protected against icing by grids and heating mats on the air intakes stub frames
- 1 engine flushing device without removal of cowlings
- 1 cycle counting system
- Fixed parts for infra-red suppressors

TRANSMISSION SYSTEM

- 1 main gearbox on flexible mountings with 3 chip detectors one of which with fuse burner, oil sight gauge, oil temperature and pressure sensors and torque meter pick-ups, 2 lubrication pumps and independent circuits, and one dry run emergency cooling device.
- 1 intermediate gearbox with magnetic plug, oil sight gauge and temperature sensor
- 1 tail gearbox with magnetic plug, oil sight gauge and temperature sensor
- 1 main gearbox oil cooling system
- 1 MGB dry run spray device
- 1 rotor brake
- 2 MGB bay fire detection circuits

ROTOR AND FLYING CONTROLS

- 1 articulated main rotor with 5 composite-material blades equipped with gust and droop stops
- 1 anti-torque rotor with 4 composite-material blades
- 1 flying control system, fitted with 4 dual-body servo-units (3 on the cyclic and collective pitch channels and 1 on the anti-torque rotor pitch control channel) with 2 chamber per body
- Capability for main rotor blade folding system
- 1 dual/duplex digital autopilot associated with 2 flight data computers and back-up capabilities
- 1 THALES AHV16 radio altimeter

ELECTRICAL INSTALLATION

- 2 30/40 kVA, 115/200 V, 400 Hz alternators
- 1 43 amp.-hr cadmium-nickel battery
- 2 transformer-rectifiers of 200 Amps each
- 1 4 amp.-hr stand-by battery
- 1 26 V, 400Hz transformer
- 1 cockpit lighting system including :
 - green pedestal and overhead panel integrated lighting
 - integrated instrument panel lighting (NVG compatible)
 - general lighting by green neon (NVG compatible)
 - 2 white or green extension lamps (NVG compatible green light)
 - 2 green light spots to read maps
 - 1 white extension light
- 1 cabin lighting system equipped with white neons
- 1 cabin lighting system equipped with 2 green neons above the doors (compatible with NVG)
- 6 receptacles for ancillaries (28 V, 15 amp.)
- 1 receptacle for ancillaries (28 V, 25 amp.)
- 2 external power receptacles (AC and DC)
- 1 600 W landing light with variable intensity
- 1 infra-red landing light with variable intensity
- 3 position lights
- 2 anti-collision lights (one of which is NVG compatible)
- 4 NVG compatible formation lights

HYDRAULIC GENERATION

- 2 independent hydraulic systems :
 - the LH system feeds one of the servo-unit bodies, the autopilot, the landing gear control, the rotor brake and wheel brakes
 - the RH system feeds the other body of the servo-units
- Hydraulic ground couplings
- 1 DC auxiliary electropump on stand-by for the LH system and for supplying sufficient hydraulic pressure for movement of the controls on the ground before starting in high winds
- 1 stand-by electropump for complete lowering of the landing gear
- Provisions for hydro-electric group installation

AIRBORNE KIT *

- 2 pitot head covers
- 1 engine air-intake grid protection cover
- 2 engine tail-pipe blanks
- 4 mooring rings
- 2 rough-weather mooring fittings (included on the aircraft)
- 1 access ladder
- 1 data case
- 3 jacking ball-joints
- Main blade tie-down
- Fuel bleed line
- 1 stowing bag for the airborne kit

* (weight not included in standard aircraft empty weight)

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3- Optional equipment

Note : value of the weight breakdown is given for information and shall not be considered as contractual.

CI : Complete Installation FP : Fixed Parts		CI FP	CI FP
General items of equipment		kg	lb
05-0041	ROSEMOUNT Icing severity indicator	3.0	6.6
05-0042	Icing detector	2.0	4.4
05-0052	Cockpit green tinted upper panes	0.0	0.0
05-0054	Cabin green tinted windows	2.5	5.5
05-0055	2 observation bubble windows on cabin sliding doors	1.0	2.2
05-0056	Cabin metallized windows	6.2	13.7
05-0060	Cockpit and cabin air conditioning system	125.0	275.6
05-0066	Crashworthy self sealing central fuel tank	34.4	75.8
05-0074	3rd crew man crashworthy seat	7.9	17.4
05-0077	3rd crew man travelling and swivelling crashworthy seat	29.4	64.8
05-0081	Auxiliary Power Unit	105.0 29.6	231.4 65.3
05-0082	Hydro electric group	17.0	37.4
Instruments and flying aids			
06-0010	Automatic transition and hover modes	3.7 0.3	8.2 0.6
06-0060	Telephonics 1500 B search radar , coupled with cockpit mission display	48.0	105.8
06-0065	Radar operator console	TBD	TBD
06-0102	Canadian Marconi CMA 3000 Flight Management System with RDN 85 Doppler and SAR modes	34.9	76.9
06-0104	Canadian Marconi CMA 3000 Flight Management System	12.8	28.1
06-0261	Elbit Digital moving map displayed on existing instrument panel 6"x8" LCD display	17.0	37.5
06-21250	GPS Canadian Marconi CMA3012	4.9	10.8
06-23010	GPS Navigation System Trimble TNL2101 approach +	3.3	7.3
06-23011	GPS Navigation System Trimble TNL2101 approach + compatible with 3 rd GEN NVG	3.5	7.7
06-31102	Telephonics 1400 C weather radar, displayed on AHCAS	24.0	52.9
Specific mission equipment			
07-0020	Emergency floatation gear	172.5 23.1	380.3 50.9
07-0021	2 Life rafts with control in cockpit	125.0 10.3	275.6 22.7
07-0024	Aerazur 551 Life-raft	43.0	94.8
07-0027	7 to 10 men life raft 610 type	22.0	48.5
07-0030	Multipurpose engine air intakes	72.9 4.9	160.7 10.8
07-0031	Main rotor blades re-inforced sand erosion protection strips	0.3	0.6
07-0032	Tail rotor blades re-inforced sand erosion protection strips	0.1	0.2

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Specific mission equipment (continued)

		kg	lb
07-0041	Installation for flight in icing condition	167.0	368.2
07-0042	Installation for flight in extreme cold weather	56.1 22.5	123.7 49.6
07-0044	Kit for flight in limited icing conditions	2.0	4.4
07-0055	Air to air refuelling system	161.2	355.4
07-0057	Electrical back-up hoist Lucas Air Equipement	23.2 8.2	51.1 18.1
07-0059	Ferrying fuel tanks (1 to 5 x 475 liters) (1 to 5 X 126 US gal.), for military use.	22.5	49.6
07-0062	Hydraulic hoist with variable speed	54.7 6.9	120.6 15.2
07-0063	External mirrors	6.5 0.5	14.3 1.1
07-0066	Drip tub	7.0	15.4
07-0069	Casualty carrying installation for 12 stretchers (without stretchers and seats)	22.6	49.8
07-0070	"Quick conversion" AIR AMBULANCE installation AS 332 series (2 Units of 3 stretchers each)	197.0	434.3
07-0071	NATO type stretcher	8.3	18.3
07-0072	Self Contained Medical Unit	243.0 2.0	535.7 4.4
07-0076	TRS 902 Transaco stretcher	10.0	22.0
07-0080	SPECTROLAB Search light	28.9 4.9	63.7 10.8
07-0092	Hailer installation	40.9 15.1	90.2 33.3
07-0112	H.E.E.L	12.0	26.4
07-0123	External luggage hold at the rear of the multipurpose sponsons	TBD	TBD
07-0144	Vertical light for hoisting and sling operation surveillance	6.7	14.7
07-0152	HUMS with Allied Combi-lite CVFDR	45.0 19.0	99.2 41.9
07-0190	Cargo sling with dynamometer 5 Tons	32.6	71.9
07-0191	Cargo sling with dynamometer 3,8 Tons	37.9 10.2	83.6 22.5
07-0205	990 liters Rear jettisonable fuel tank	116.5 17.4	256.8 38.4
07-0300	Polyurethane white paint re-inforced anti-corrosive treatment	12.6	27.8
07-0301	Polyurethane white paint and Dinol AV30 re-inforced anti-corrosive treatment	25.0	55.1
07-0330	HIFR (Hover in Flight Refuelling)	12.4	27.3

Interior cabin layout

09-0011	16 crashworthy troop seat installation	134.8 2.0	297.2 4.4
09-0021	19 comfort seat installation	192.7	424.8
09-0022	24 + 1 comfort seat installation	220.1	485.2

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Ground handling and picketing

10-0015	Main rotor blade folding system	60.0 5.0	132.3 11.0
10-0020	Naval mooring	3.7	8.2
10-0025	Lashing rings for main landing gear	1.0	2.2

Military installation

11-0015	7.62 mm MAG FN machine gun in forward right and left windows	74.0 4.2	163.1 9.3
11-0030	Axial armament common components	173.0 36.8	463.5 81.1
11-0032	2 x 19 -2.75" rocket launchers	154.0 3.2	339.5 7.0
11-0033	2 x 20 mm pod-mounted cannon	236.0 4.2	520.3 9.3
11-0039	EWR -99 RWR (THALES)	10.9 6.6	24.0 14.6
11-0046	Alkan ELIPS NG Chaff/flare dispensers (1 per side without cartridges)	29.2 26.1	64.4 57.5

Radio communication and radio navigation equipment

15-10010	HF/SSB Collins HF 9X00	23.1	50.9
15-11111	Collins VHF422B pilot/copilot	5.1	11.2
15-13360	UHF Chelton 805-1	6.5	14.3
15-13100	Collins ARC210 pilot/copilot	10.5	23.1
15-17100	Interphone Team BA1920	1.6	3.5
15-17301	Gueneau-Silec 4449-1 headsets	0.5	1.1
15-17304	Gueneau-Silec 4452	1.5	4.0
15-21200	SERPE-IESM ELT KANAD 406 AF headsets	2.1	4.6
15-31114	2nd THALES Radio altimeter AHV16	5.1	11.2
15-32010	TDR Collins TDR 94	5.5	12.1
15-32020	ADF Collins ADF 462 pilot	7.2	15.9
15-33020	HONEYWELL APX 100 IFF Transceiver	6.5	14.3
15-33040	THALES IFF TSC2050 (on request)	10.8	23.8
15-34021	ADF Collins ADF 462	6.9	15.2
15-35021	DME Collins DME 442	8.2	18.1
15-35100	TACAN Collins ARN 153	11.5	25.3
15-36020	Collins VIR 432 pilot/copilot VOR/ILS/MKR	11.8	26.0
15-37010	Cubic AN/ARS 6 PLS	14.8	32.6
15-37201	Chelton DF931 V/UHF DF	8.0	17.6

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4- Radio-communication and radio-navigation equipment

The radio/com/nav. equipment weight figures included in this chapter are average values. As the installation of those equipment may vary from one a/c to an other, the weight of a complete configuration with multiple items may not be the simple sum of all individual weights.

A/ Military uses

Recommended minimum items of equipment

Designation	Solution 1	Solution 2	Solution 3
VHF/AM	-	Collins VHF 422 B	Collins VHF 422 B
VHF/AM-FM tactique	-	-	Collins VHF 422B
V-UHF/AM-FM tactical- FM maritime n° 1	Collins ARC 210	Collins ARC 210	-
V-UHF/AM-FM tactical- FM maritime n° 2	Collins ARC 210	-	-
UHF/AM	-	-	Chelton 805-1
A.D.F.	Collins ADF 462	Collins ADF 462	Collins ADF 462
Weight supplement	27.9 kg	22.5 kg	23.7 kg

Headsets and helmets

Designation	Solution 1, 2 or 3	kg	lb
Headsets	Silec 4449-1	0.5	1.1
Helmets	Gueneau-Silec 459	1.3	2.9

Note : value of the weight breakdown is given for information and shall not be considered as contractual.

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4- Radio-communication and radio-navigation equipment (cont'd)

A/ Military uses (continued)

Additional equipment depending on operational needs

Designation	Solution 1, 2 or 3	kg	lb
Direction Finder (30-400 MHz)	Chelton DF 931	8.0	17.6
Personal Locator System	Cubic AN/ARS 6	14.8	32.6
VOR/ILS	Collins VIR 432	11.8	26.0
HF/SSB	Collins HF 9100	23.1	50.9
IFF	Thales TSC 2050	10.8	23.8
D.M.E. or TACAN	Collins DME 442 or Collins ARN 153	8.2 11.5	18.1 25.3
Emergency Locator Transmitter	Serpe Kanad 406 AF	2.1	4.6
I.C.S. Passenger interphone	Team BA 1920	1.6	3.5
GPS Navigation System ¹ (coupled with AHCAS)	Trimble TNL 2101 Approach+	3.3	7.3
Radar	Telephonics 1400 C	24.0	52.9
Self Contained Navigation	Canadian Marconi CMA 3000 FMS Thales RDN 85 Doppler Radar Coupled with AHCAS	39.0	86.0
+	+		
GPS receiver ¹	Canadian Marconi CMA 3012 GPS receiver	3.5	7.7

¹ The customer must take out a subscription to the data base in order to use the GPS after having taken delivery of the helicopter

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4- Radio-communication and radio-navigation equipment (cont'd)

B/ Navy uses

Recommended minimum items of equipment

Designation	Solution 1	Solution 2	Solution 3
VHF/AM	-	Collins VHF 422 B	-
VHF/AM-FM tactical FM Maritime n° 1	Collins ARC 210	Collins ARC 210	Collins ARC 210
V-UHF/AM-FM tactical- FM maritime N° 2	Collins ARC 210	-	-
UHF/AM	-	-	Chelton 805-1
A.D.F.	Collins ADF 462	Collins ADF 462	Collins ADF 462
2 nd radio altimeter	Thales AHV16	Thales AHV16	Thales AHV 16
Weight supplement	33.0 kg	27.6 kg	29.1 kg

Headsets and helmets

Designation	Solution 1, 2 or 3	kg	lb
Headsets	Silec 4449-1	0.5	1.1
helmets	Gueneau-Silec 459	1.3	2.9

Additional equipment depending on operational needs

Designation	Solution 1, 2 or 3	kg	lb
Direction finding (30-400 MHz)	Chelton DF 931	8.0	17.6
Personal Locator System	Cubic AN/ARS 6	14.8	32.6
VOR/ILS	Collins VIR 432	11.8	26.0
HF/SSB	Collins HF 9100	23.1	50.7
IFF	Thales TSC 2050	10.8	23.8
D.M.E. or Tacan	Collins DME 442 or Collins ARN 153	8.2 11.5	18.1 25.3
Emergency Locator Transmitter	Serpe kanad 406 AF	2.1	4.6
I.C.S. Passenger interphone	Team BA 1920	1.6	3.5
GPS Navigation system ¹ (coupled with AHCAS)	Trimble TNL 2101 Approach +	3.3	7.3

¹ The customer must take out a subscription to the data base in order to use the GPS after having taken delivery of the helicopter

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4- Radio-communication and radio-navigation equipment (cont'd)

C/ Search and rescue missions

Non divisible SAR package

Designation	Solution 1	Solution 2
Automatic Transition and hover modes of AFCS and display	SAR upper modes	SAR upper modes
self contained navigation system	Canadian Marconi CMA 3000 FMS +	Canadian Marconi CMA3000 FMS +
radar	Thales RDN85 Doppler Radar ¹	Thales RDN85 Doppler Radar
	Telephonics RDR 1400 C coupled with AHCAS	Telephonics RDR 1500 B coupled with AHCAS
Weight supplement	62.6 kg	86.6 kg

Options

Designation	Solution A	Solution B	kg	lb
Mission Planning System	Recommended option of the self-contained navigation system			
GPS receiver = option of the self-contained navigation system	Canadian Marconi CMA3012 GPS receiver		4.0	8.8
I.C.S. Passenger Interphone	Team BA 1920		1.6	3.5
Inertial Navigation system	SAGEM SIGMA 50 H with embbeded GPS		21.5	47.4

Note : value of the weight breakdown is given for information and shall not be considered as contractual.

¹ In order to load the data in the FMS, a Mission Planning System (MPS) is recommended. This system can be shared between several helicopters operated from the same base.

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5- Equipment compatibility

- Impossibility of simultaneous fitment of the fixed parts of 2 items of equipment
- ? Total or partial incompatibility of simultaneous fitment of the removal parts of two items of equipment
- Possibility of simultaneous fitment on the same aircraft, but impossible to use simultaneously

Note: This table indicates the compatibility restrictions existing between the installations. The consultation of EUROCOPTER is necessary for the definitive Equipment Compatibility clearance of a configuration.

Reference Optional		Installation	Nature of the incompatibility		
			■	▲	●
General items of equipment					
05-0066	Crashworthy & Self-sealing central fuel tank		07-0190		
05-0081	Auxiliary power unit	05-0082			10-0010
05-0082	Hydro electric group	05-0081			10-0010
Specific mission equipment					
07-0054	Ferrying fuel tanks 1 to 5 x 475 litres (1 to 5 x 126 US gal.)		09-001 07-0069		07-0062
07-0062	Fixed hoist (600 lb); 246 ft cable with variable speed				07-0054 07-0190 07-0191 09-0010
07-0069	Casualty-carrying installation for 12 stretchers		07-0054 07-0190 09-0010		
07-0190	Cargo sling with dynamometer (5 metric tons)		05-0066 07-0069 07-0191 09-0010		07-0062
07-0191	Cargo sling with dynamometer (3,8 metric tons)		07-0190		07-0062
07-0205	Rear fuel tank		09-0010		
Operational protection					
08-0010	Armour plating for pilot and copilot crashworthy seats	05-020			
Interior cabin arrangement					
09-0010	28 troop seat installation		07-0054 07-0069 07-0190 07-0205		07-0062
Ground handling & picketing					
10-0010	Main rotor blade folding system				05-0081 05-0082

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6- Main performance

The following performance values and figures refer to an **EC 725**, equipped with new engines.

Unless otherwise specified, the values and figures refer to a **clean helicopter** at **Sea Level** (SL), in **International Standard Atmosphere** (ISA) and **zero wind** condition.

Performance on 2 engines

Gross Weight		kg lb	9,500 20,940	10,000 22,050	10,500 23,150	11,000 24,250
■ Maximum speed, VNE	km/hr kts		324 175	324 175	305 165	305 165
■ Fast cruise speed (at MCP)	km/hr kts		281.5 152	279 150.5	275 148.5	267.5 144.5
■ Recommended cruise speed	km/hr kts		281.5 152	279 150.5	275 148.5	267.5 144.5
■ Fuel consumption at recommended cruise speed	kg/hr lb/h		665 1,466	665 1,466	665 1,466	665 1,466
■ Rate-of-climb (85 kt, 2 engines at MCP)	m/sec ft/min		8.5 1,670	7.6 1,595	6.8 1,340	5.9 1,160
■ Hover ceiling IGE (Take-off power, 10 ft)						
● ISA	m ft		3,657 11,998	3,159 10,364	2,676 8,779	2,208 7,244
● ISA + 20°C	m ft		2,749 9,019	2,209 7,247	1,675 5,495	1,148 3,766
■ Hover ceiling OGE (at take-off power)						
● ISA	m ft		2,994 9,823	2,484 8,149	2,084 6,837	524 1,719
● ISA + 20°C	m ft		2,046 6,712	1,481 4,859	919 3,015	- -
■ Service ceiling (Vz = 0.508 m/s – 100 ft/mn)	m ft		> 6,000 > 19,685	5,885 19,310	5,440 17,855	4,995 16,400
■ Maximum range (without reserve, at economical cruise speed)						
● Standard tanks	km nm		868 469	859 464	850 454	839 453
● Standard tanks + central fuel tank	km nm		975 526	965 521	955 516	943 509
● Standard tanks + central fuel tank + rear fuel tank	km nm		1,325 716	1,311 708	1,297 700	1,282 692
■ Maximum endurance (without reserve, at 157 km/hr – 85 kts)						
● Standard tanks	hr : min		4 : 28	4 : 21	4 : 13	4 : 05
● Standard tanks + central fuel tank	hr : min		4 : 81	4 : 74	4 : 65	4 : 57
● Standard tanks + central fuel tank + rear fuel tank	hr : min		6 : 57	6 : 47	6 : 36	6 : 24

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Performance on 1 engine

Gross Weight	kg lb	9,500 20,940	10,000 22,050	10,500 23,150	11,000 24,250
■ Rate of climb (85 kts, 1 engine at OEI unlimited)	m/sec ft/min	3.5 690	2.7 530	1.95 385	1.3 255
■ Service ceiling (1 engine at OEI unlimited), (V _z = 0.508 m/s – 100 ft/mn)	m ft	2,435 7,990	1,915 6,295	1,415 4,645	930 3,050

Operating limitations

The helicopter is cleared to be operated within the following altitude and temperature limitations (according to Flight Manual). For complementary information, refer to Flight Manual:

- Maximum altitude
 - Flight 6,095 m – 20,000 ft (PA)
 - Take-off and landing 4,572 m – 15,000 ft (DA)
- Maximum temperature ISA + 35°C limited to 50°C
- Minimum temperature
 - 30°C (standard configuration)
 - 45°C (requires the installation of “kit for flight in extreme cold weather” to be contracted separately)

Abbreviations

AEO :	All Engines Operative	PA :	Pressure Altitude
DA :	Density Altitude	SL :	Sea Level
IGE :	In Ground Effect	TAS :	True Air Speed
ISA :	International Standard Atmosphere	VNE :	Never Exceed Speed
MCP :	Maximum Continuous Power	V _z :	Rate-of-climb
OEI :	One Engine Inoperative	Z _p :	Barometric Altitude
OGE :	Out of Ground Effect	V _p :	Airspeed

Units

nm :	nautical miles	hr:min :	hours:minutes
kts :	knots	kg :	kilograms
ft/min :	feet/minute	lb :	pounds
m/sec :	meters per seconds	km :	kilometres
° C :	degrees Celsius	kg/hr :	Kilograms per hours
V _{max} :	Maximum cruise speed	V _{reco} :	Economical cruise speed

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Performance charts

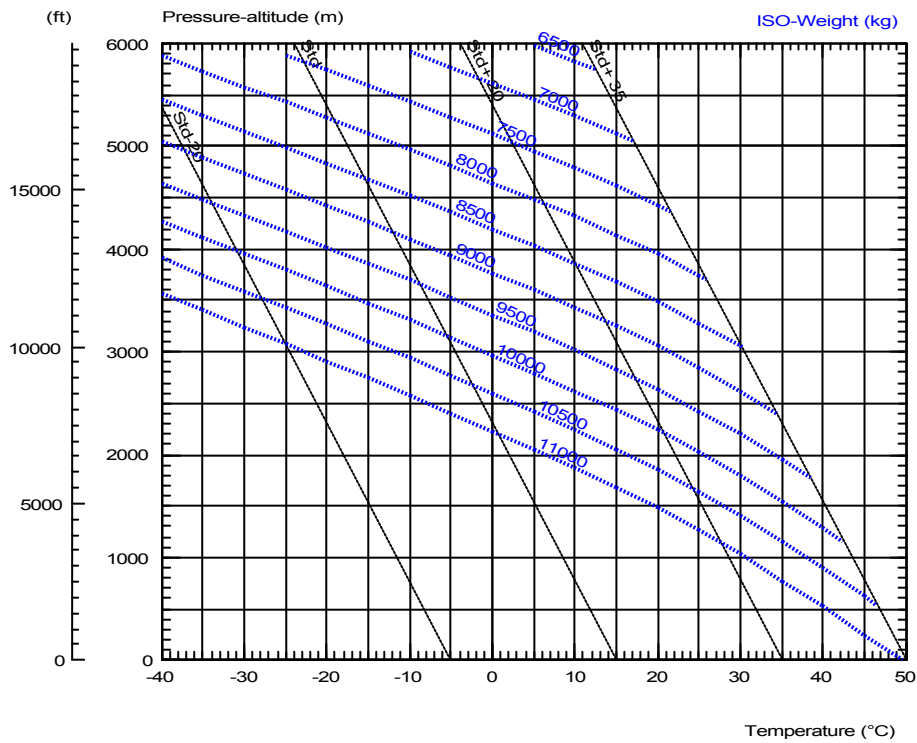
The performance charts presented hereafter apply to a **clean** aircraft as per the **standard** definition, **with external spsons**.

■ Take-off weight in hover IGE, AEO 5 mn (10 ft, on 2 engines, at take-off power)	Page 24
■ Take-off weight in hover OGE, AEO 5 mn (on 2 engines, at take-off power)	Page 25
■ Fast cruise speed $Z_p = 0$, ISA (on 2 engines at maximum continuous power)	Page 26
■ Fast cruise speed $Z_p = 0$, ISA + 20°C (on 2 engines at maximum continuous power)	Page 27
■ Rate of climb in oblique flight (on 2 engines at maximum continuous power - ISA; T.A.S. = 85 kts)	Page 28
■ Rate of climb in oblique flight (on 2 engines at maximum continuous power – ISA+20°C; T.A.S. = 85 kts)	Page 29
■ Rate of climb in oblique flight (on 1 engine OEI unlimited, ISA ; T.A.S = 85 kts)	Page 30
■ Rate of climb in oblique flight (on 1 engine OEI unlimited, ISA + 20°C ; T.A.S = 85 kts)	Page 31
■ Hourly fuel consumption at fast cruise speed (on 2 engines at maximum continuous power)	Page 32
■ Hourly fuel consumption (SL, ISA)	Page 33
■ Hourly fuel consumption (SL, ISA+20°C)	Page 34
■ Hourly fuel consumption ($Z_p = 5000$ ft, ISA)	Page 35
■ Hourly fuel consumption ($Z_p = 10000$ ft, ISA)	Page 36
■ Hourly fuel consumption ($Z_p = 5000$ ft, ISA + 20°C)	Page 37
■ Hourly fuel consumption ($Z_p = 10000$ ft, ISA + 20°C)	Page 38

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Take-off weight in hover IGE, AEO 5 min

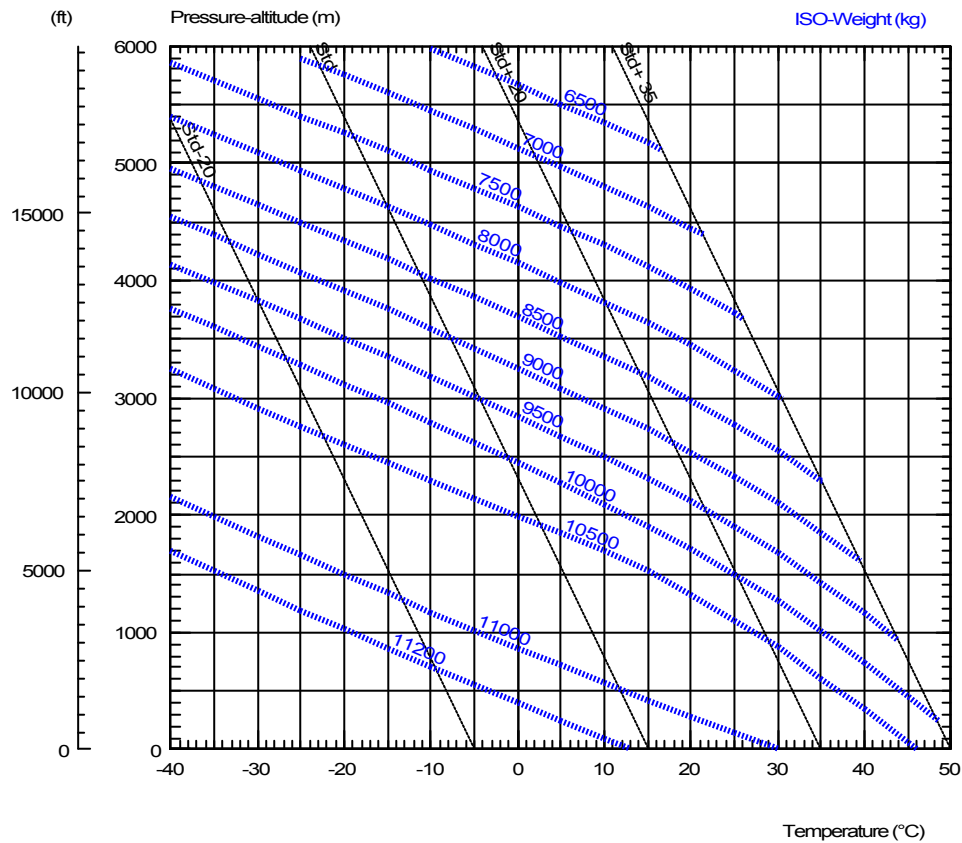
10 ft, on 2 engines, at take-off power



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Take-off weight in hover OGE, AEO 5 min

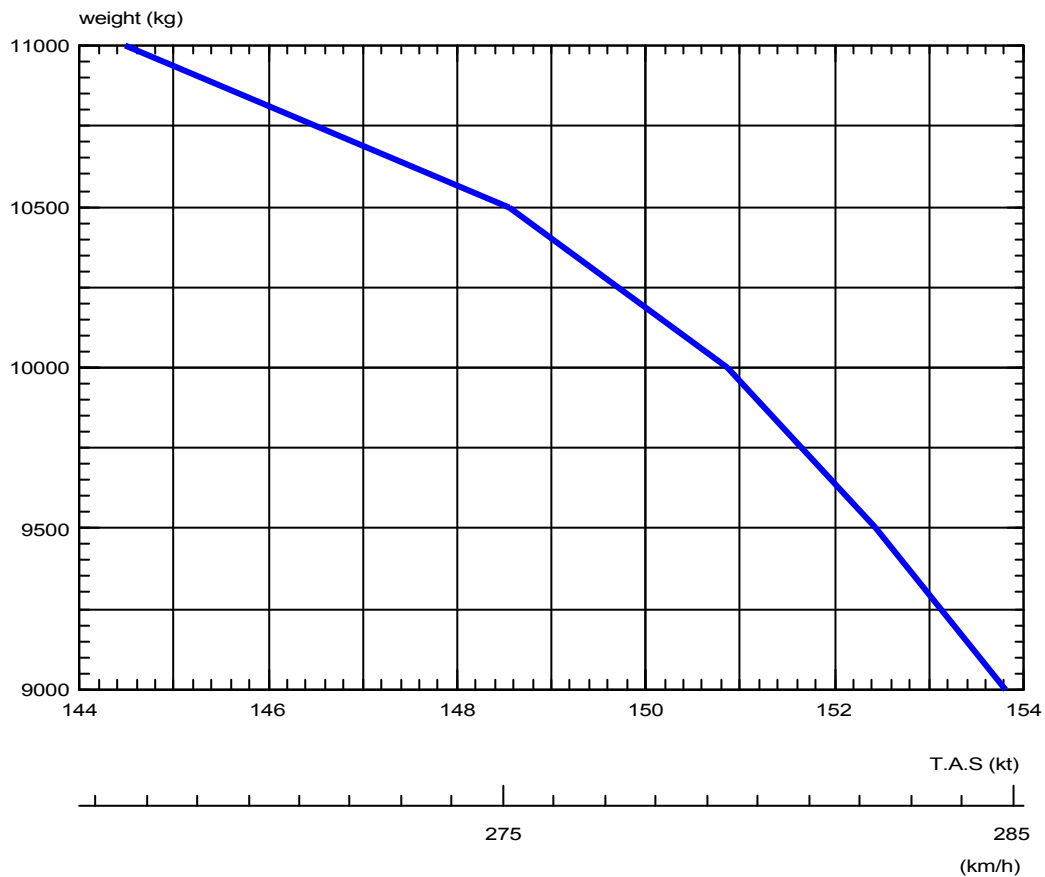
on 2 engines, at take-off power



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Fast cruise speed

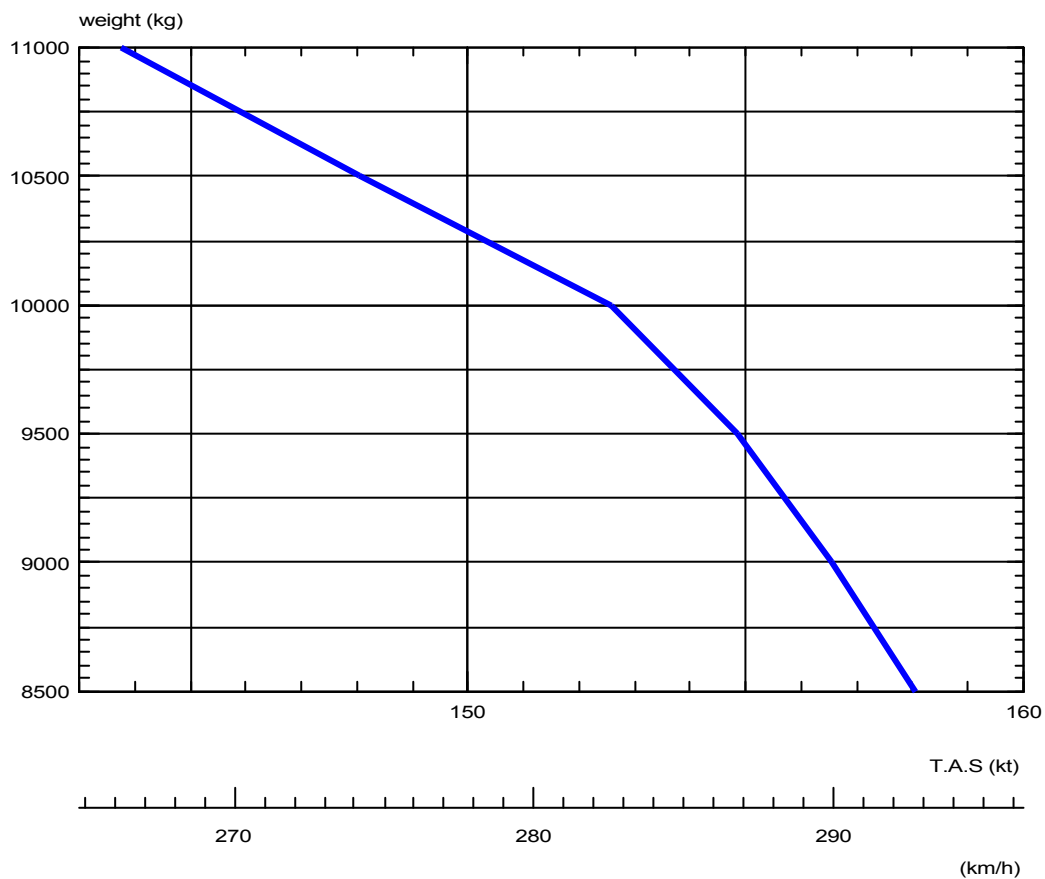
Zp = 0, ISA
on 2 engines, at maximum continuous power



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Fast cruise speed

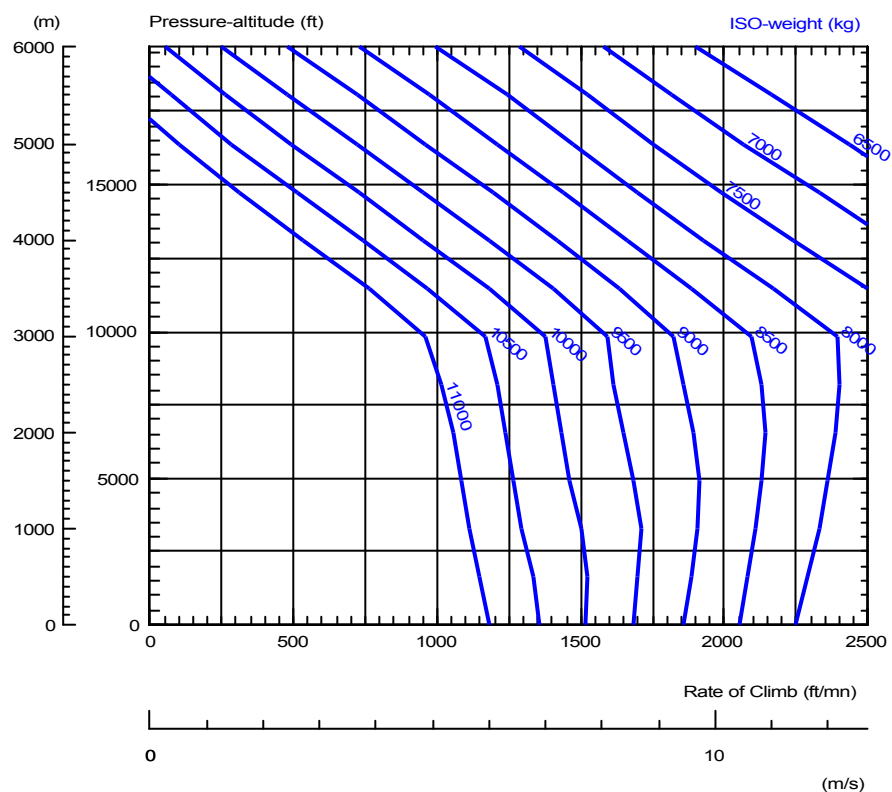
Zp = 0, ISA + 20
on 2 engines, at maximum continuous power



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Rate of climb in oblique flight

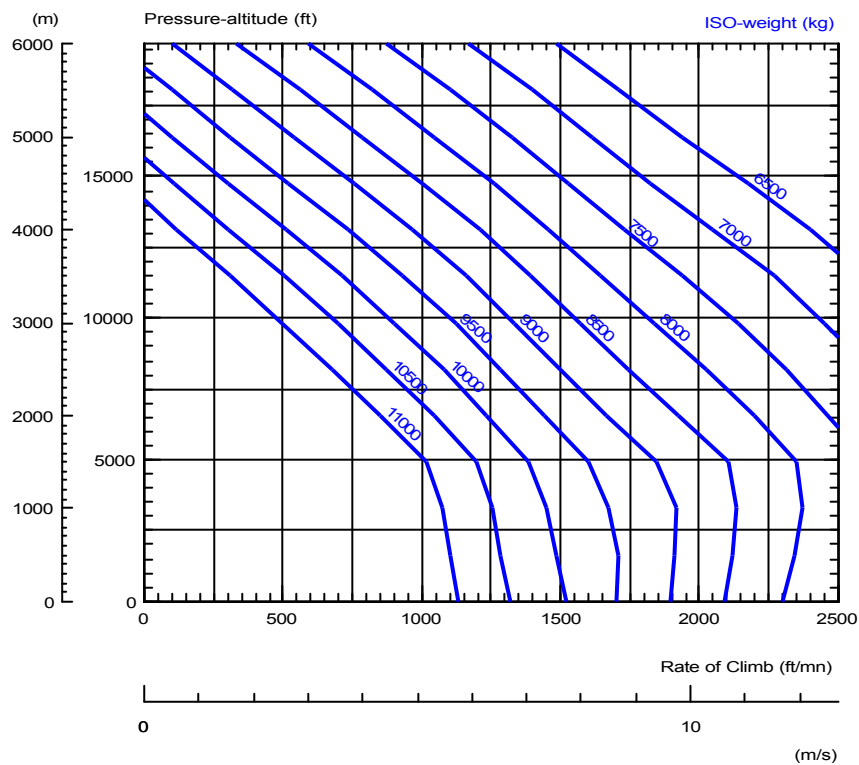
ISA – T.A.S. = 85 kts
on 2 engines, at maximum continuous power



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Rate of climb in oblique flight

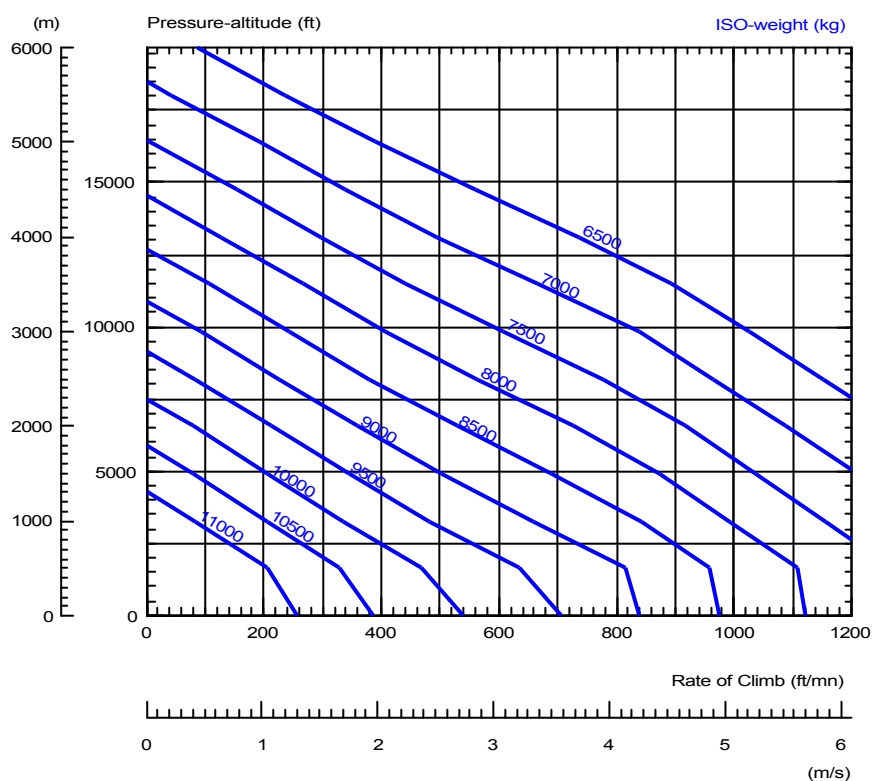
ISA+20°C - T.A.S. = 85 kts
on 2 engines, at maximum continuous power



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Rate of climb in oblique flight

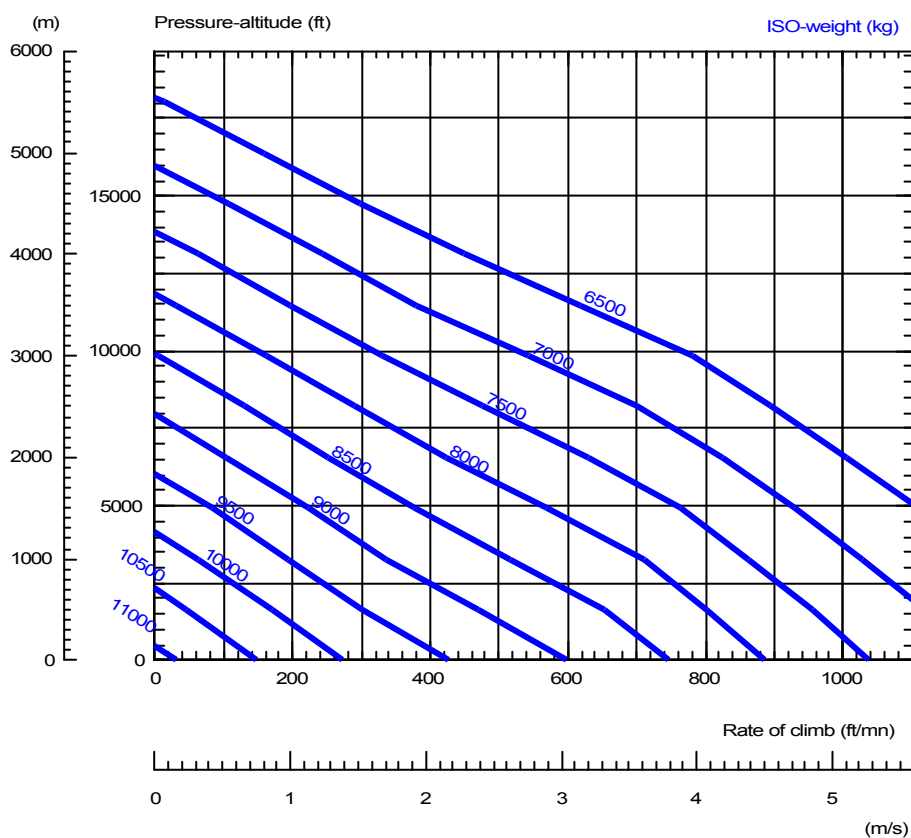
ISA - T.A.S. = 85 kts
on 1 engine, OEI unlimited



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Rate of climb in oblique flight

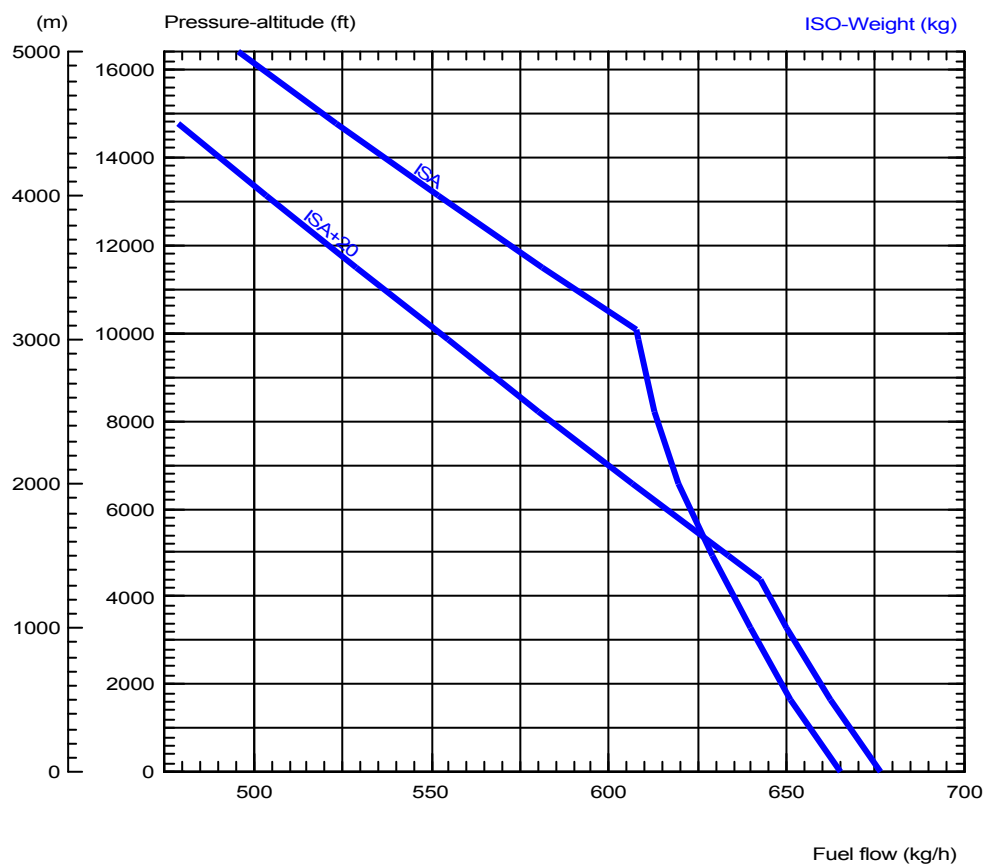
ISA + 20°C - T.A.S. = 85 kts
on 1 engine, OEI unlimited



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Hourly fuel consumption at fast cruise speed

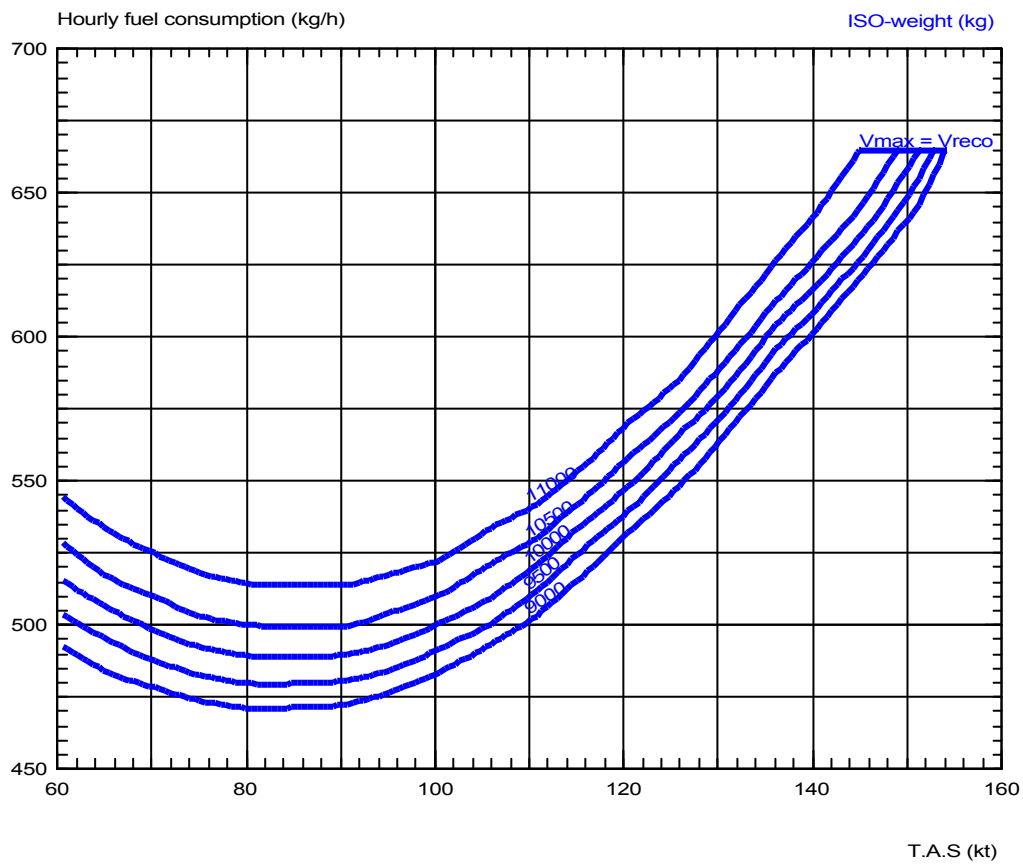
on 2 engines, at maximum continuous power



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Hourly fuel consumption

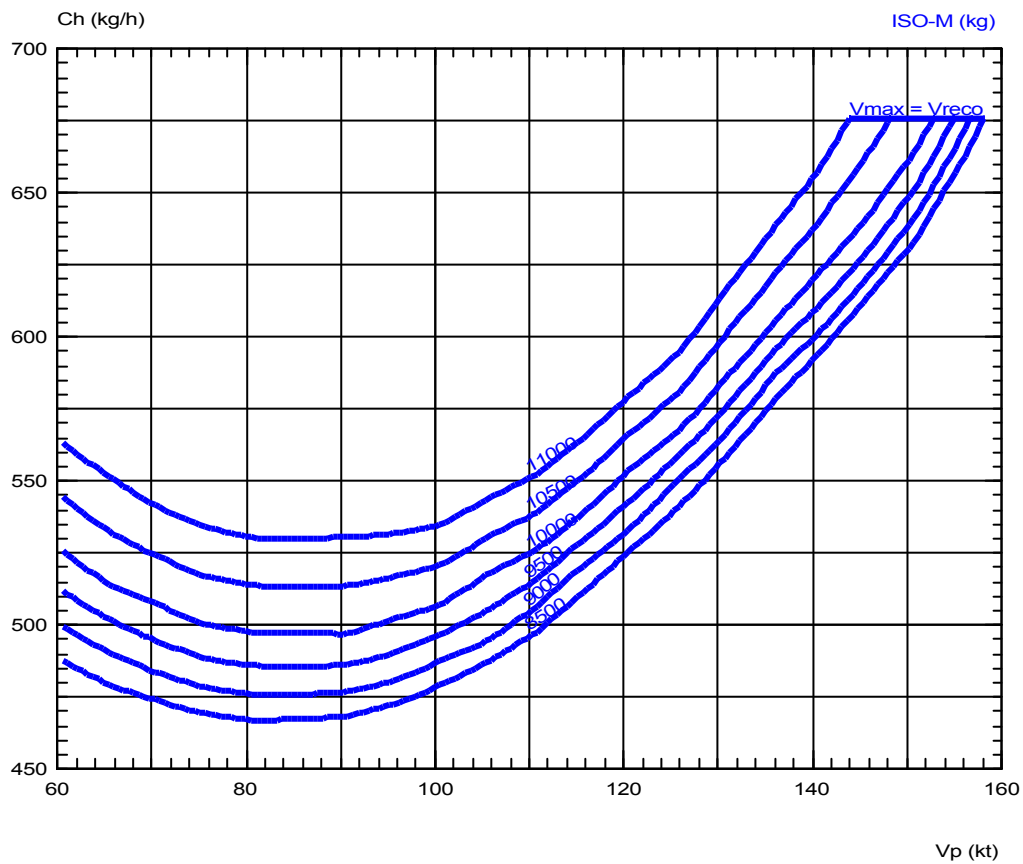
SL, ISA



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Hourly fuel consumption

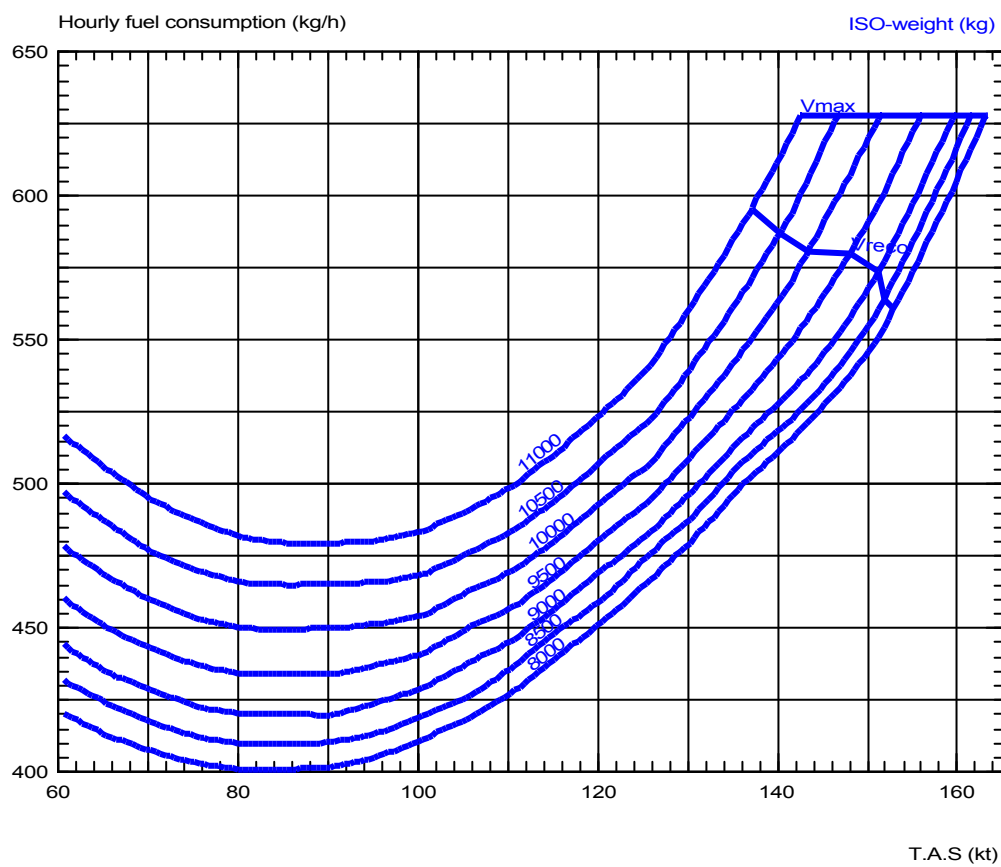
SL, ISA+20°C



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Hourly fuel consumption

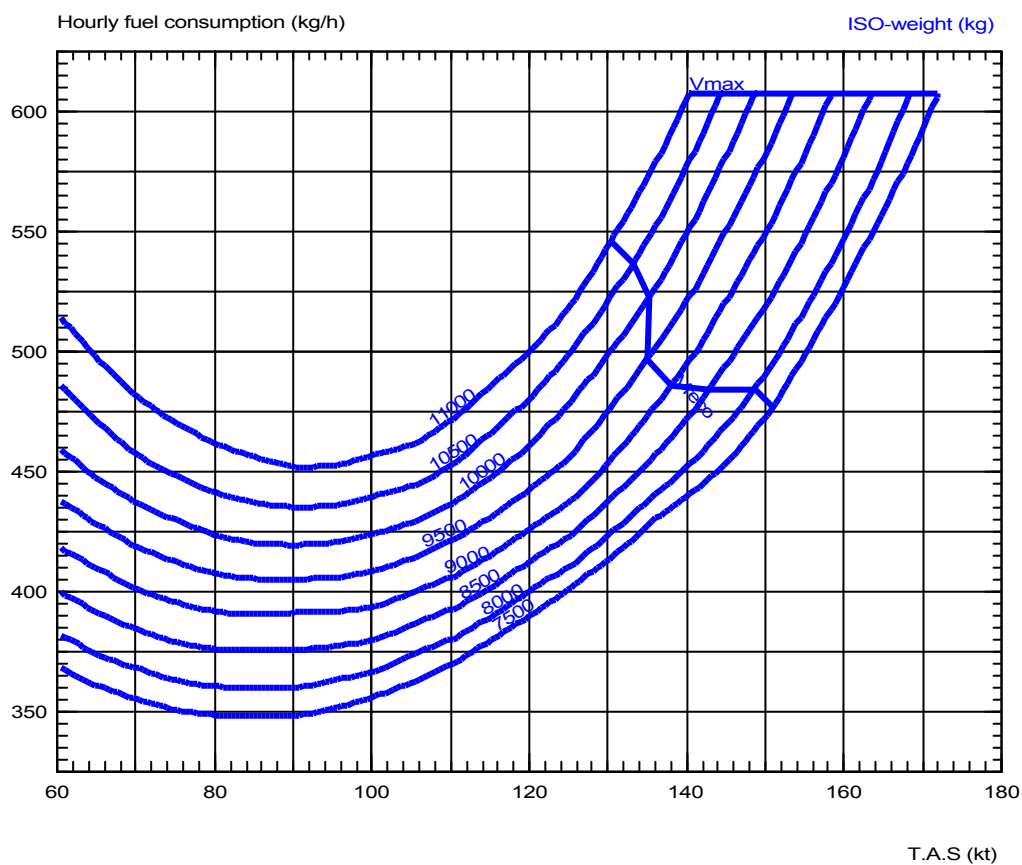
Zp = 5000 ft, ISA



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Hourly fuel consumption

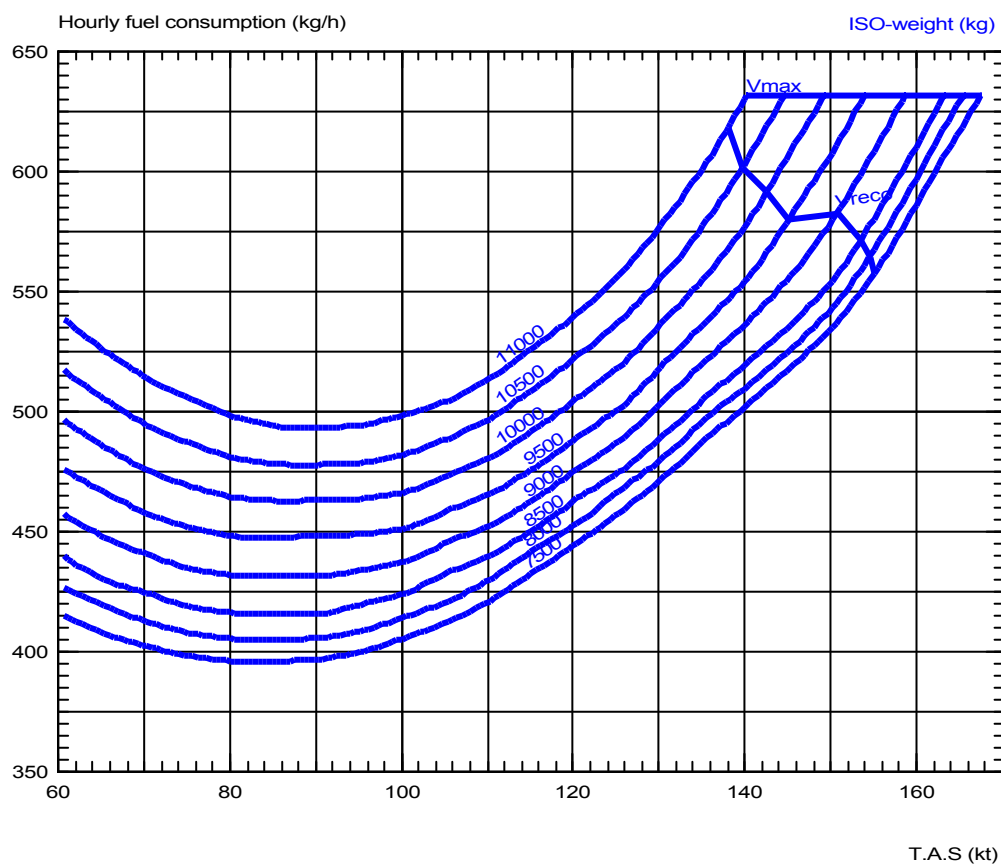
Zp = 10000 ft, ISA



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Hourly fuel consumption

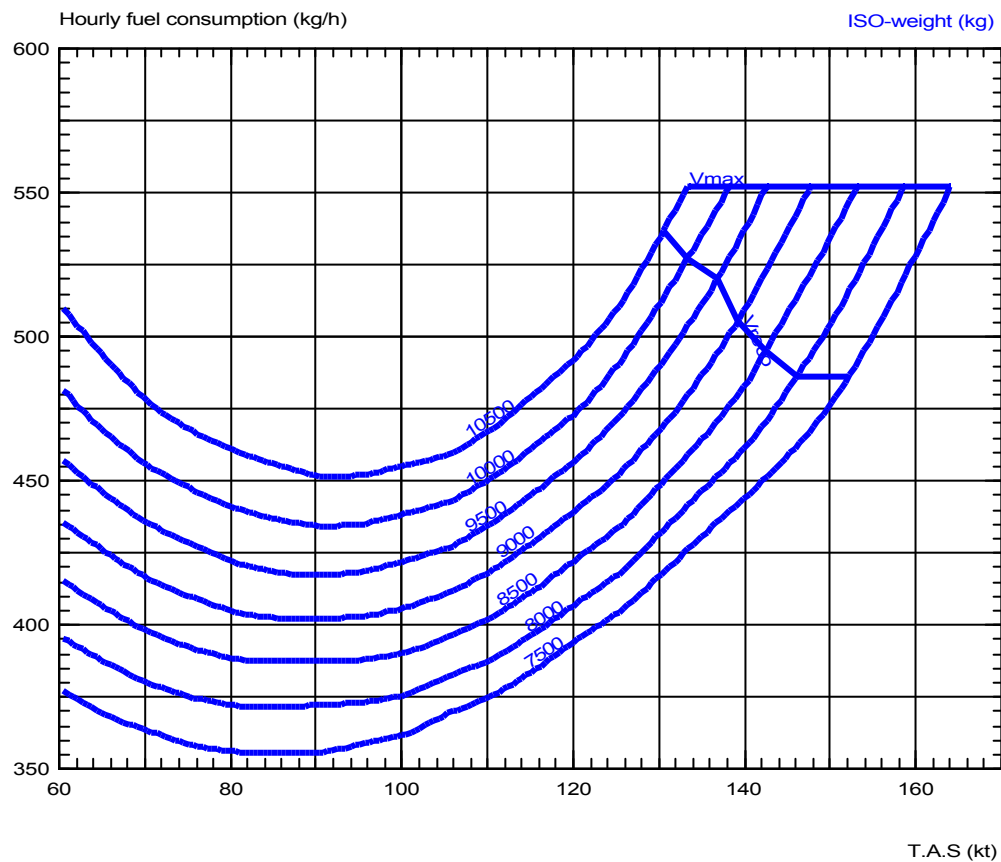
Zp = 5000 ft, ISA + 20°C



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Hourly fuel consumption

Zp = 10000 ft, ISA + 20°C



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