

Contents

1 - General characteristics	4
2 - Standard Aircraft Definition	12
3 - Optional equipment	15
4 - Incompatibilities between optional equipment	28
5 - Main performance	29
6 - Customer service overview	43

Manufacturers notice

Attention!

Eurocopter's policy is one of on-going product enhancement which means that alterations in definition, pictures, weights, dimensions or performance may be made at any time without notice being included in those documents that have already been issued.

This document cannot thus be taken as an offer or serve as an appendix to a contract without a prior check as to its validity and prior written agreement of EUROCOPTER.



Blank



Foreword



The EC 120 B is the first light single engine helicopter to incorporate the latest technologies available such as VEMD (Vehicle and Engine Multifunction Display), Spheriflex type rotor head, a new generation fenestron and the latest TURBOMECA ARRIUS engine.

The design of the EC 120 B makes it the most versatile aircraft in its category. In fact, its wide cabin can accommodate comfortably up to 5 persons; moreover the cabin area and the luggage compartment combined allow bulky load transportation or a foldable stretcher.

This very safe and environmental friendly aircraft complies with the JAR 27, FAR 27 and ICAO regulations.

The simple EC 120 B design offers a new maintenance concept specially adapted to a modern light helicopter operation. Most of the maintenance tasks can be performed by the operators themselves with a limited need for specific tools. This self-sustained maintenance has considerably reduced the operating costs of the aircraft.

Eurocopter is very sensitive to aircraft safety and quietness.

The EC 120 B is fully compliant with the new JAR 27 regulation concerning safety. It is equipped with crashworthy seats for pilot, copilot, passengers and crashworthy fuel system.

- The new generation of fenestron improves safety on ground as well as in flight and takes part in the decrease in external noise level.
- New design of the main blades in composite makes them resistant to impact and corrosion free.

The external noise level of the EC 120 B is 6.7 dBA under the limit defined in the current ICAO regulation (ICAO noise limits, in over flight, 85.4 dBA).

Its exceptional low noise level makes it an ideal helicopter for missions in noise sensitive areas such as tourism, corporate transport, law enforcement, medical evacuation, news gathering and operations over national park or nature reserve.



1- General Characteristics

Remarks:

When equipped with appropriate optional equipment, the EC 120 B is JAA certified for DAY AND NIGHT VFR operations.

The operator shall check current operational regulations of the concerned country.

Lay-Out

■ Passenger transport

■ 1 pilot + 4 passengers or 2 pilots + 3 passengers

Casualty transport
 1 pilot + 1 paramedic and
 1 stretcher-patient

■ Cargo carrying ■ 1 pilot + 2.94 m3 (103.82 cu.ft) total useful load volume (cabin and hold)

Weights

Note : Empty weight accuracy : within \pm 2 %	kg	lb
■ Empty weight, standard aircraft ¹	965	2,127
■ Useful load ²	750	1,653
■ Maximum take-off weight	1,715	3,781
■ Maximum cargo sling load	700	1,543
Maximum operational weight in external load configuration	1,800	3,968

Power plant: 1 TURBOMECA ARRIUS 2 F turbine engine

Engine ratings

Powe	r in ISA at sea level :	kW	ch	shp
	■ Take-off power	376	511	504
	■ Maximum continuous power	335	455	449

Usable Fuel capacities

	litres	US gal.	kg	lb
■ Standard fuel tank ³	406	107	321	707

Standard aircraft empty weight includes oil and unusable fuel. Ballast plates can be added at the rear of the fenestron, their mass is 8.5 kg (18.7 lb) maximum.

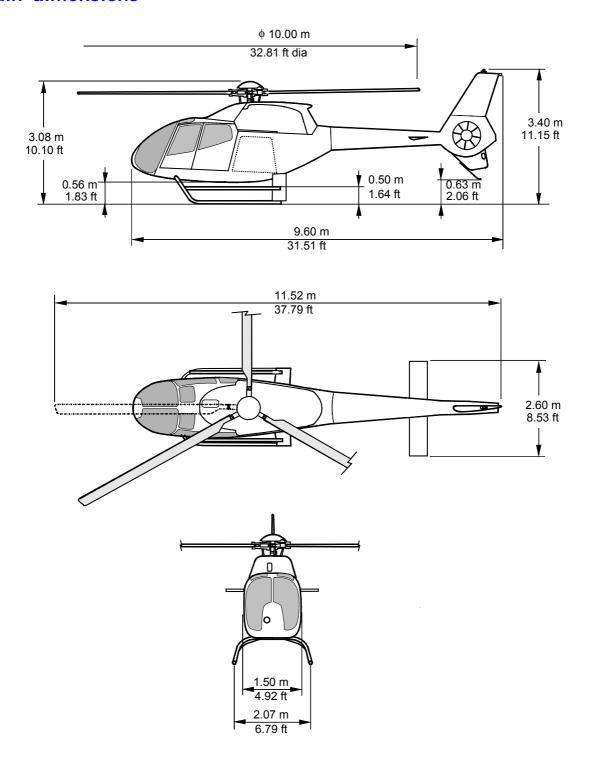
The data set forth in this document are general in nature and for information purposes only.

The useful load does not include the ballast plates. Depending on the configuration, the ballast's weight will be deducted from the useful load.

The total fuel tank capacity is accurate to \pm 5 l.



Main dimensions



Dimensions given for information only



Configurations

A roomy cabin with outstanding comfort



The EC 120 B benefits from a roomy cabin and exceptional glazed surface providing the passengers an excellent comfort and a very good field of view.





Note: EC 120 B fitted with the optional equipment

comfortable cabin upholstery

■ cabin carpet





The luggage compartment is able to contain up to 5 large suitcases. When the helicopter is configured for internal freight transport, the cabin area plus luggage compartment make loading and unloading effortless thanks to an unobstructed cabin and a flat floor.

A new generation of light single engine helicopter

The EC 120 B includes the latest technologies that will make piloting easier and safer.



The VEMD (Vehicle and Engine Multifunction Display) is a fully duplex equipment which displays on LCD screen 3 operating modes :

- the operational mode,
- the configuration mode,
- the maintenance mode.

The VEMD is very easy to maintain thanks to its modular design.



The Main Rotor:



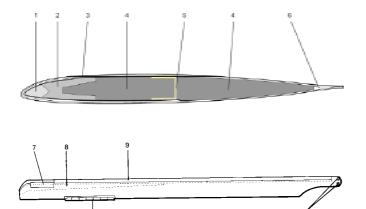
The main rotor generates the lift and the traction transferred to the helicopter. During flight, it allows the helicopter to be controlled in roll and pitch in conjunction with the tail rotor (yaw).

The main rotor assembly includes:

- The main rotor head and mast,
- The main rotor blades.

Rotor head "Spheriflex" type: this highly reliable rotor head is very easy to maintain.

The Main Rotor Blades:



Main rotor blades are aerodynamically optimized. They are corrosion proof and highly tolerant to impacts.

- 1 Lead balancing weight
- 2 Roving spar
- 3 Fiberglass cloth skin
- 4 Foam filler
- 5 Carbon fabric rib
- 6 Roving edge
- 7 Balancing weight chamber
- 8 Polyurethane strip
- 9 Stainless steel plate
- 10 Stainless steel bushings
- 11 Tabs

Individually interchangeable, they are made of composite materials and secured to the hub with special bolts.

The Tail Rotor Blades:

Third generation of Fenestron with airfoil and 8 asymmetrical blades spacing for low noise emission.

This Fenestron is integrated into a composite structure.





A modern and efficient Power Plant:



The ARRIUS 2F is the latest engine generation of Arrius family (from TURBOMECA) which combines power (504 shp), simplicity (2 modules), low fuel consumption and benefits from the wide experience of the Arrius engine family.

The turbine engine is mounted at the top of the rear structure, in a fireproof compartment. It is installed at the rear of the main gearbox, to which it is linked by a connecting shaft mounted between two blade-type flexible couplings.

The TURBOMECA ARRIUS 2F free turbine engine is composed of 2 modules as follows:

<u>Module 1</u> (reduction gearbox) : it consists of a reduction gear unit including an oil tank and accessory box assembly.

<u>Module 2</u> (gas generator and power turbine): the Module 2 comprises an air intake casing, a centrifugal compressor, a combustion chamber, a high pressure turbine (HP turbine), a power turbine and a power transmission shaft and outlet diffuser.

Instrument panel:

Basic instrument panel





Typical equipped instrument panel



- 1 Slaving Control and Compensation Unit *
- 2 Emergency Locator Transmitter control unit *
- 3 VEMD (Vehicle and Engine Multifunction Display)
- 4 NR/NF dual indicator
- 5 Airspeed indicator
- 6 CWP (Central Warning Panel)
- 7 GPS caption panel 1*
- 8 Gyro horizon *
- 9 Altimeter
- 10 Vertical speed indicator *
- * optional

- 11 Horizontal Situation Indicator * or directional gyro indicator *
- 12 GPS/VOR switch 1*
- 13 DME indicator 2*
- 14 Chronometer *
- 15 CCBP (Cockpit Circuit Breakers Panel)
- 16 Transponder *
- 17 VHF n°2 3*
- 18 VOR/VHF n°1 *
- 19 ICS control box 4 *
- 20 LACU (Lighting and Ancillary Control Unit)
- 21 GPS *
- 22 VOR indicator *

GPS / VOR : Global Positioning System / VHF Omni Range

DME : Distance Measuring Equipment

VHF : Very High Frequency

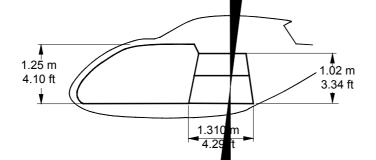
ICS : Inter-Communication System



Dimensions of compartmer

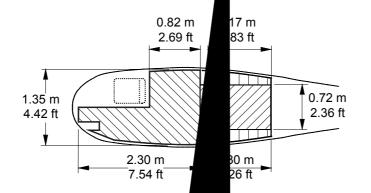
and accesses

• Cabin main dimensions



CABIN	
Surface	1.91 m²
	20.56 ft ²
Volume	2.14 m³
	75.57 ft³

• Cabin and cargo compartment areas



CARGO COMPARTMENT		
Surface	1.40 m²	
	15.07 ft ²	
Volume	0.80 m³	
	28.25 ft ³	

• Doors dimensions

The data set forth For performance data and operating li

120 B 03.101.02 E



2- EC 120 B - Standard Aircraft Definition

GENERAL

- The EC 120 B is certified with a pilot being on the right or left side.
- The standard aircraft is delivered with right side controls and fixed parts of the removable dual controls (the removable parts of removable dual controls are optional).
- Fuselage comprising the cabin and the luggage hold with several accesses possibilities
- Tail boom with stabilizer, "built in" vertical fin anti-torque rotor (fenestron type)
- High skid landing gear compatible with handling wheels
- Lifting points
- Mooring fixtures
- External paint : choice of standard paint schemes
- Internal paint :
 - light grey : (prevailing colour)
 - black : (flight controls, glare shield, central console, upper controls quadrant,)

CABIN / CARGO

- Same level cabin/cargo floor
- 2 pilot and copilot crashworthy seats, adjustable in reach, removable, complete with cushions, safety belts and shoulder harnesses
- 1 three place crashworthy rear bench seat quickly removable with cushions, safety belts with shoulder strap
- 2 pilot and copilot jettisonable doors fitted with a sliding window
 - 1 RH front large door
 - 1 LH front door
- 1 RH rear fixed panel
- 1 LH rear sliding door1 Footstep on landing gear

- 1 communication panel quickly removable between cabin and cargo compartment
- 1 right lateral hinged cargo door
- 1 rear hinged access cargo door
- 1 ceiling housing the ventilation/demisting/heating (optional air conditioning) ducts, shut-off valve and rotor brake controls and the cabin lighting circuit.
- 1 removable plug on cabin ceiling duct (ram air ventilation and heating in summer configuration)
- Capabilities for optional equipment (such as wire strike protection system, windshield wiper ...)
- 1 fire-extinguisher
- 1 Flight Manual

INSTRUMENTS

- 1 airspeed indicator
- 1 altimeter
- 1 self powered rotor and free turbine tachometer dual indicator (NR/NF)
- 1 central warning panel (warning, caution, with MGB/TGB chip indication annunciators)
- 1 stand-by magnetic compass
- 1 heated pitot head
- 1 external side slip indicator
- 1 control box for light and electrical generation (LACU)
- 1 cockpit breaker panel
- 1 cargo circuit breaker panel

- 1 LCD Dual screen Vehicle and Engine Multifunction Display (VEMD) providing the following information:
 - First limitation indicators (FLI)
 - torquemeter
 - exhaust gas temperature (T4)
 - gas generator tachometer (Ng, delta Ng)
 - Engine oil temperature/pressure
 - Fuel quantity
 - Ammeter, voltmeter and battery temperature
 - Outside Air Temperature (OAT)
 - Enhanced usage monitoring functions
 - ♦ IGE/OGE performance calculations
 - ♦ engine cycle counting
 - engine power check
 - overlimits display
 - VEMD and peripheral maintenance information

POWER PLANT

- 1 TURBOMECA ARRIUS 2F 376 kW (511 ch 504 shp) turbine engine complete with starting, fuel supply and governing systems and fitted with electrical chip detectors
- 1 fuel system including 2 tanks with a total usable fuel capacity of 406 ± 5 liters (107.3 US gal)
- 1 Twist throttle with starter button incorporated in collective lever
- 1 engine lubrication and oil cooling system
- 1 fire detection system
- Engine sensors (Ng, T4, Torque, oil Pressure and Temperature)

The data set forth in this document are general in nature and for information purposes only.

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



TRANSMISSION SYSTEM

- 1 Main Gear Box with oil sight gauge, electrical chip detector, oil temperature and pressure switches, ports for boroscope, self-sealing valve for oil sampling and draining
- 1 engine to main gearbox coupling shaft
- 1 rotor brake

- 1 main rotor high and low r.p.m. warning device
- 1 rear tail drive with low maintenance level
- 1 Tail Gear Box with oil sight gauge, electrical chip detector and port for boroscopic inspection

ROTORS AND FLYING CONTROLS

- 3 Main Rotor blades of composite material
- 1 Spheriflex rotor head with droop stops

- 1 anti-torque rotor with 8 blades, (fenestron) integrated in vertical fin
- 1 flight control set assisted by 3 main rotor servo units for the main rotor.

ELECTRICAL INSTALLATION

- 1 4.8 kW, 28 V DC starter generator
- 1 nickel-cadmium battery
- 1 flashing anti-collision light
- 3 position lights
- 1 fixed landing light

- Instrument panel lighting system by fixed spot light on overhead panel (VFR night)
- Integrated lighting in central console
- 2 swivelling emergency and reading map lights for pilot and copilot
- 1 dome light for passengers

AIRBORNE KIT (*)

- 1 pitot head cover
- 2 static port stoppers
- 1 engine exhaust pipe cover1 air intake plug (over cabin)
- 2 ground handling wheels
- 2 mooring rings

- 3 main-blade socks
- 1 document holder
- 1 airborne kit storage bag
- 1 removable plug for air intake scoop on forward cowling (cabin-air recirculation heating in winter configuration)

(*) (weight not included in standard aircraft empty weight)



Blank



3- Optional equipment

3-1 Mission equipment packages

Eurocopter proposes in the following pages six mission equipment packages identified by Eurocopter for the EC 120 B :

- 1 Passenger transport configuration (solution 1)
- 2 Passenger transport configuration (solution 2)
- 3 Law enforcement configuration
- 4 Training configuration (solution 1)
- 5 Training configuration (solution 2)
- 6 Utility configuration

The purpose of these mission equipment packages is to partially match the typical operational requirements while offering the customers a cost-effective package.



PACKAGE 1 - PASSENGER TRANSPORT CONFIGURATION Solution 1

Package No.1 - Passenger Transport - solution 1

Document Commercial Name

reference reference

00-50001 **00-50001-CI Passenger Transport - solution 1** : 45.9 kg - 101.2 lb

Removable dual controls - Removable Parts

Cabin fan

Electrical ground power receptacle

Fuel flowmeter

Emergency Locator Transmitter Jolliet JE2 NG (2 frequencies) 1

Comfortable cabin upholstery ²

Cabin carpet 3

VOR-VHF/AM n°1 Honeywell KX 165

with OBS indicator KI 202 4

VHF/AM n° 2 Honeywell KY 196A

ICS and Passengers Interphone Team SIB 120 5

2 x headsets David Clark H 10 - 13H 6

Transponder Honeywell KT 76A with altitude encoder Shadin 8800 T GPS Freeflight 2101 Approach+ ⁷

Gyro-horizon Thales H321 EGM slip indication included

Gyro directional indicator AIM 205 – 2B Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Passenger Transport Configuration (solution 1) empty weight :

1,011 kg - 2,229 lb

The aircraft equipped empty weight is correct to ± 2 %

Acceptance by local airworthiness authorities to be checked.

The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

Cabin carpet, cabin washable cover and reinforced soundproofing are not included in the optional "Comfortable cabin upholstery".

Can be replaced by the optional "Cabin washable cover".

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

The ICS plugs are available in US standard version only and high impedance.

Delivered with Europe map. Subscription to be made by the Customer.



PACKAGE 2 - PASSENGER TRANSPORT CONFIGURATION Solution 2

Package No.2 - Passenger Transport - solution 2

Document Commercial Name

reference reference

00-50002 **00-50002-CI Passenger Transport - solution 2 :** 57.9 kg - 127.6 lb

Customized external paint

Removable dual controls – Removable Parts

Cabin fan

Electrical ground power receptacle

Fuel flowmeter

Emergency Locator Transmitter Jolliet JE2 NG (2 frequencies) 1

Comfortable cabin upholstery ²

Cabin carpet 3

Cargo compartment upholstery

VOR-VHF/AM n°1 Honeywell KX 165 4

VHF/AM n° 2 Honeywell KY 196A

ICS and Passengers Interphone Team SIB 120 5

2 x headsets David Clark H 10 - 13H 6

Transponder Honeywell KT 76A with altitude encoder Shadin 8800 T

GPS Freeflight 2101 Approach+ 7

Gyro-compass Honeywell KCS 55A with HSI KI 525 A $\,$

integrating navigation coupling

Gyro-horizon Thales H321 EGM slip indication included

Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Passenger Transport Configuration (solution 2) empty weight :

1,023 kg - 2,255 lb

The aircraft equipped empty weight is correct to ± 2 %

Acceptance by local airworthiness authorities to be checked.

The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

Cabin carpet, cabin washable cover and reinforced soundproofing are not included in the optional "Comfortable cabin upholstery".

³ Can be replaced by the optional "Cabin washable cover".

⁴ A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

⁶ The ICS plugs are available in US standard version only and high impedance.

Delivered with Europe map. Subscription to be made by the Customer. Linked to HSI KI 525 A.



PACKAGE 3 - LAW ENFORCEMENT CONFIGURATION

Package No.3 - Law Enforcement Configuration

Document Commercial Name

reference reference

Wire strike protection system

Removable dual controls - Removable Parts

Cabin fan

Electrical ground power receptacle

Emergency Locator Transmitter Jolliet JE2 NG (2 frequencies) 1

VOR-VHF/AM n°1 Honeywell KX 165

with OBS indicator KI 202 2

ICS and Passengers Interphone Team SIB 120 3

2 x headsets David Clark H 10 - 13H 4

Transponder Honeywell KT 76A) with altitude encoder Shadin 8800 T

GPS Freeflight 2101 Approach+ 5

Gyro-horizon Thales H321 EGM

slip indication included

Gyro directional indicator AIM 205 – 2B Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Law enforcement configuration empty weight:

995 kg - 2,194 lb

The aircraft equipped empty weight is correct to ± 2%

Acceptance by local airworthiness authorities to be checked.

The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

The ICS plugs are available in US standard version only and high impedance.

Delivered with Europe map. Subscription to be made by the Customer.



PACKAGE 4 - TRAINING CONFIGURATION Solution 1

Package No.4 - Training Configuration - solution 1

Document Commercial Name

reference reference

00-50004 **00-50004-CI Training Configuration - solution 1**: 32.3 kg - 71.2 lb

Removable dual controls - Removable Parts

Cabin fan

Electrical ground power receptacle

Fuel flowmeter

Long protective skid shoes 1

Emergency Locator Transmitter Jolliet JE2 NG (2 frequencies) ²

VOR-VHF/AM n°1 Honeywell KX 165

with OBS indicator KI 202 3

VHF/AM n° 2 Honeywell KY 196A

ICS and Passengers Interphone Team SIB 120 4

2 x headsets David Clark H 10 - 13H 5

Transponder Honeywell KT 76A with altitude encoder Shadin 8800 T

Gyro-horizon Thales H321 EGM slip indication included

Gyro directional indicator AIM 205 – 2B Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Training configuration (solution 1) empty weight:

997 kg - 2,199 lb

The aircraft equipped empty weight is correct to ± 2 %

May be replaced by the optional "Short protective skid shoes".

Acceptance by local airworthiness authorities to be checked.

The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

The ICS plugs are available in US standard version only and high impedance.



PACKAGE 5 - TRAINING CONFIGURATION Solution 2

Package No.5 - Training Configuration - solution 2

Document Commercial Name

reference reference

00-50005 00-50005-CI Training Configuration - solution 2: 61.7 kg - 136.0 lb

First aid kit

Wire strike protection system

Bronze tinted windows (windshield excluded)
Removable dual controls – Removable Parts

Cabin fan

Electrical ground power receptacle

Fuel flowmeter

Long protective skid shoes 1

External electric rear view mirror (recommended for sling work)

Cargo sling - Fixed Parts

Cargo sling - Removable Parts

Emergency Locator Transmitter Satori 96-406 (3 frequencies) ²

VOR-VHF/AM n°1 Honeywell KX 165 3

VHF/AM n° 2 Honeywell KY 196A

ICS and Passengers Interphone Team SIB 120 4

2 x headsets David Clark H 10 - 13H 5

Transponder Honeywell KT 76A

with altitude encoder Shadin 8800 T

DME and Glide Function Honeywell KN 63

GPS Freeflight 2101 Approach + 6

Gyro-compass Honeywell KCS 55A with HSI KI 525 A

integrating navigation coupling

Gyro-horizon Thales H321 EGM slip indication included

Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Training configuration (solution 2) empty weight :

1,027 kg - 2,263 lb

The aircraft equipped empty weight is correct to \pm 2 %

May be replaced by the optional "Short protective skid shoes".

Acceptance by local airworthiness authorities to be checked. That ELT covers the need for 406 MHz frequency. The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

⁵ The ICS plugs are available in US standard version only and high impedance.

Delivered with Europe map. Subscription to be made by the Customer. Linked to HSI KI 525 A.



PACKAGE 6 - UTILITY CONFIGURATION

Package No.6 - Utility Configuration

Document Commercial Name

reference reference

00-50006 00-50006-CI Utility Configuration :

35.0 kg - 77.2 lb

Removable dual controls - Removable Parts

Cabin fan

Electrical ground power receptacle

External electric rear view mirror (recommended for sling work)

Cargo sling – Fixed Parts

Cargo sling - Removable Parts

Emergency Locator Transmitter Jolliet JE2 NG (2 frequencies) 1

VOR-VHF/AM n°1 Honeywell KX 165

with OBS indicator KI 202 2

ICS and Passengers Interphone Team SIB 120 3

2 x headsets David Clark H 10 - 13H 4

Gyro-horizon Thales H321 EGM slip indication included

Gyro directional indicator AIM 205 – 2B Vertical speed indicator Aerosonic

Chronometer

EC 120 B in Utility configuration empty weight:

1,000 kg - 2,205 lb

The aircraft equipped empty weight is correct to ± 2 %

Acceptance by local airworthiness authorities to be checked.

The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

The ICS plugs are available in US standard version only and high impedance.



3-2 List of optional equipment

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

General equipment

Document reference	Commercial reference	Name	kg	lb
05-01003	05-01003-CI	CAA certification kit ¹	TBD	TBD
05-02001	05-02001-CI	Customized external paint	3.0	6.6
05-02002	05-02002-CI	Aircraft without external paint 23	-6.5	-14.3
05-03001	05-03001-CI	First-aid kit	1.7	3.7
05-21001	05-21001-CI	Wire strike protection system	5.0	11.0
05-23001	05-23001-CI	Engine washing device	0.2	0.4
05-24001	05-24001-CI	Concentric high visibility on main rotor blades (red, white or yellow strips) ⁴	0.05	0.1
05-25001	05-25001-CI	Sand filter	5.7	12.6
05-31001	05-31001-CI	Bronze tinted windows (windshield excluded)	0	0
05-32004	05-32004-CI	Windshield wipers ⁵	3.7	8.2
05-37001	05-37001-RP	Removable dual controls - Removable Parts 6	5.6	12.3
05-37004	05-37004-CI	Full-option pilot cyclic control stick (right side)	1.0	2.2
05-37005	05-37005-CI	Full-option co-pilot cyclic control stick (left side)	0.7	1.5
05-42001	05-42001-CI	Air conditioning system	25.9	57.1
05-44001	05-44001-CI	Cabin fan 7	2.5	5.5
05-61001	05-61001-CI	Battery heating for very cold weather starting kit	0.5	1.1
05-67000	05-67000-CI	Electrical ground power receptacle ⁸	1.4	3.1
05-71000	05-71000-CI	Hydraulic ground power receptacle	0.2	0.4
05-85001	05-85001-CI	Fuel flowmeter	0.7	1.5
05-91001	05-91001-CI	Handling twin-wheel units with hydraulic jacking system 9	40.6	89.5

The data set forth in this document are general in nature and for information purposes only.

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

The kit takes care of certification requirements but does not cover any operational requirement.

Subject to prior authorization of local airworthiness authorities.

Dropping value applicable to the standard aircraft.

⁴ Choice of the color to be specified on order.

The optional consists of : one pilot's windshield wiper and one copilot's windshield wiper.

The EC 120B standard aircraft has the capability (FP included) of the dual controls.

Mandatory optional unless replaced by the air conditioning system.

Optional included in all packages.

Replaces the handling wheels delivered with the airborne kit.



Specific mission equipment

Document reference	Commercial reference	Name	kg	lb
06-11001	06-11001-FP 06-11001-RP	Skis – Fixed parts Skis – Removable Parts	1.1 10.7	2.4 23.6
06-11002	06-11002-CI	Short protective skid shoes ¹	2.5	5.5
06-11003	06-11003-CI	Long protective skid shoes ²	6.4	14.1
06-26001	06-26001-CI	External electric rear view mirror (recommended for sling work)	2.4	5.3
06-27001	06-27001-FP 06-27001-RP	Cargo sling – Fixed parts Cargo sling – Removable Parts	3.4 8.4	7.5 18.5
06-42014	06-42014-CI	Swivelling landing light ³	3.2	7.1
06-61001	06-61001-FP 06-61001-RP	Emergency floatation gear – Fixed parts Emergency floatation gear – Removable Parts	3.2 39.5	7.1 87.1
06-67004	06-67004-CI	Emergency Locator Transmitter Jolliet JE 2 NG (2 frequencies) 4	1.3	2.9
or 06-67005	or 06-67005-CI	or Emergency Locator Transmitter Satori 96-406 (3 frequencies) ⁴	or 2.2	or 4.9

Interior cabin layout

Document reference	Commercial reference	Name	kg	lb
07-30001	07-30001-CI	Comfortable cabin upholstery ⁵	14.0	30.9
07-30002	07-30002-CI	Reinforced soundproofing ⁶	5.2	11.5
07-40001	07-40001-CI	Cabin carpet	4.3	9.5
07-40002	07-40002-CI	Cabin washable cover	4.0	8.8
07-60001	07-60001-CI	Cargo compartment upholstery	6.0	13.3
07-74001	07-74001-FP 07-74001-RP	Foldable stretcher ⁷ – Fixed parts Foldable stretcher – Removable parts	8.8 13.6	19.4 30.0

Recommended for training missions.

The data set forth in this document are general in nature and for information purposes only.

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

Recommended for training missions on non-prepared airfield.

May be required for night VFR flight in some countries (operational regulations).

Acceptance by local Airworthiness Authorities to be checked.
The programming data sheet must be filled and communicated by the Customer two (2) months at the latest before delivery.

Cabin carpet, cabin washable cover and reinforced soundproofing are not included in the optional "Comfortable cabin upholstery".

[&]quot;Reinforced soundproofing" needs the installation of the option "Comfortable cabin upholstery".

For casualty transport, when the foldable stretcher is completely installed and the rear-bench and the communication panel are removed and left on ground, the overall weight of the helicopter is lighter by 8.4 kg (18.6 lb).



Avionics

Document reference	Commercial reference	Name	kg	lb
08-11005	08-11005-CI	VOR-VHF/AM No.1 Honeywell KX 165 ¹	4.0	8.8
or	or	or	or	or
08-11014	08-11014-CI	VOR-VHF/AM No.1 Honeywell KX 165 with OBS indicator KI 202 ¹	4.5	9.9
08-12014	08-12014-CI	VHF/AM No.2 Honeywell KY 196 A	1.6	3.5
08-16001	08-16001-CI	External ICS plug	0.06	0.1
08-16005	08-16005-CI	I.C.S. + passengers interphone Team SIB 120 ²	1.0	2.2
08-18016	08-18016-CI	Headset David Clark H10-13H ³	0.5	1.1
08-22010	08-22010-CI	Transponder Honeywell KT 76 A with altitude encoder Shadin 8800 T	2.8	6.2
08-25002	08-25002-CI	D.M.E and Glide function Honeywell KN 63 ⁴	2.9	6.4
08-43003	08-43003-CI	GPS Freeflight 2101 Approach + 5	1.7	3.7
08-50003	08-50003-CI	Gyro-compass Honeywell KCS 55A with HSI KI 525A integrating nav. coupling $^{\delta}$	4.9	10.8
		 The gyro compass comprises: one directional gyro with one magnetic azimuth transmitter and one slaving accessory, one HSI indicator KI 525A, one switch GPS/VOR, one GPS caption panel, one coupling with the GPS 		
08-51001	08-51001-CI	Gyro-horizon Thales H321 EGM slip indication included	1.5	3.3
08-52001	08-52001-CI	Gyro-directional indicator AIM 205-2B ⁶	1.4	3.1
08-62001	08-62001-CI	Vertical speed indicator Aerosonic	0.4	0.9
08-93001	08-93001-CI	Chronometer	0.2	0.4

The avionics 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.

The data set forth in this document are general in nature and for information purposes only.

A frequencies selector is fitted on the cyclic stick.

Mandatory optional. Can be proposed with, at least, 2 headsets.

The ICS plugs are available in US standard only and high impedance.

⁴ Requires the gyro-compass with nav. Coupling and the VOR-VHF/AM n°1 installation.

Delivered with Europe map. Subscription to be made by the Customer.

These two optional items cannot be fitted simultaneously on the helicopter.



3.3 Optional items available in subsidiaries

These options can be ordered to each mentioned subsidiary.

Unless otherwise specified, they cannot be installed in the assembly line at Eurocopter Marignane, because they don't have obtained the DGAC certification.

So they have to be ordered separately to the concerned subsidiary:

- 1. American Eurocopter Corporation USA
- 2. Eurocopter Canada Limited Canada
- 3. Mc-ALPINE Helicopters Great Britain

Caution:

Please contact the concerned subsidiary for export/import procedures and feasibility check.



American Eurocopter Corporation - USA

Option number	Description	Certification
Avionics		
120B-A01V	Electrical turn and bank 2"	AID
120B-A02V	1200-2RS attitude gyro (with or without slip indicator) 3"	AID
120B-A03V	Gyro directional indicator 3"	AID
120B-A04V	Instantaneous vertical speed indicator	
	- 2"	DER
	- 3" (already included in extended instrument panel)	TC
120B-A05V	Electrical turn and bank 3"	AID
120B74-1268-00 120B74-1268-01	Radar-altimeter KRA 10A	STC
120B-K04F	Digital chronometer	STC
Cabin options		
120B-C04A	Map light (already included in 3" extended panel)	DER
120B-C08A	Corporate classic (covered fabric cushions, deep pile carpet, soundproofing)	
120B-C09A	Corporate classic full leather (seats and inserts)	
120B-C10A	Corporate leather seats (leather seats, inserts with fabric)	
120B-C11A	Leather seats only	
120B-C12A	Headset hangers (velcro)	
Various		
120B-F08A	Lead acid battery	STC
120B-K05A	Left or right extended panel with 3" indicators	STC
120B-K06A	Hobb's Collective activated hourmeter	STC
120B-K07A	Hobb's Maintenance hourmeter	AID
120B-L01A	Belly strobe lights	STC
120B-L03A	Pulse light system wired to landing light	AID
120B-M11A	Public address system 200W with two speakers	STC
Searchlight		
120B-M22A	Spectrolab SX 5 starburst searchlight (complete)	STC
120B-M23A	- fixed components include a frame	STC
120B-M24A	- removable components	STC
120B-M30V	Golden lens for SX 5	STC
120B-M32A	Full cyclic control (relay box)	STC
Forward Looking	ng Infra-Red	
120B-M33A	FLIR 7000 (complete with monitor)	STC
120B-M34A	- fixed components	STC
120B-M35A	- removable components	STC
120B-M39A	Slass (Slaved Seachlight System)	STC
120B-M40V	FLIR 7000 VCR recorder	STC
120B-M42A	FLIR 7000 mount only (no screen, no wires, no dive tail)	STC

AID = Avionics Installation Drawing

DER = Designated Engineer Representative

STC = Supplemental Type Certificate (Federal Aviation Administration)

The data set forth in this document are general in nature and for information purposes only.

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



Eurocopter Canada Limited - Canada

Option number	Description	Certification
120-500214	Settling protectors installation, Left Hand/Right Hand	STA STC
120-701014	Improved heating system	STA

Mc-ALPI NE Helicopters - Great Britain

Option number	Description	Certification
MHL120-OP1	Garmin Comm/Nav/GPS with moving map suite, electronic HSI and extended instrument panel	CAA
MHL120-OP2	Garmin Comm/Nav/GPS with moving map suite, KCS 55A compass and extended instrument panel	CAA
MHL120-AE1	Honeywell KMD150 Moving Map display	CAA
MHL120-AE2	Stereo multi-disc CD changer/player	CAA
MHL120-HDS2-5	Upgrade from 2 Bose headsets to 5 Bose headsets	CAA
MHL120-INT01-XX	VIP Interior completion ¹	CAA
MHL120-EXT01-XX	Customer exterior specified paint scheme ²	CAA

CAA = Civil Airworthiness Authority

STA = Supplemental Type Approval (Transport Canada)

STC = Supplemental Type Certificate (Federal Aviation Administration)

Eurocopter option 07-30001-CI "comfortable cabin upholstery" required.

Desired paint scheme subject to technical approval.



4- Incompatibilities between optional equipment

- 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

Commercial	Installation	Nature of the incompatibility		
reference	mstallation		A •	
General ed	quipment			
05-21001-CI	Wire strike protection system	05-32004-CI		
05-32004-CI	Windshield wipers	05-21001-CI		
05-42001-CI	Air conditioning system	05-44001-CI		
05-44001-CI	Cabin fan	05-42001-CI		
Specific m	nission equipment			
06-11001-FP	Skis	06-11003-FP 06-61001-FP		
06-11002-CI	Short protective skid shoes	06-11003-CI		
06-11003-CI	Long protective skid shoes	06-11001-FP 06-11002-CI		
06-61001-FP	Emergency floatation gear	06-11001-FP		
06-67004-CI	Emergency Locator Transmitter 2 frequencies Jolliet JE2 NG	06-67005-CI		
06-67005-CI	Emergency Locator Transmitter 3 frequencies Satori 96-406	06-67004-CI		
Interior c	abin layout			
07-40001-CI	Cabin carpet	07-74001-FP	07-40002-CI	
07-40002-CI	Cabin washable cover	07-74001-FP	07-40001-CI	
07-60001-CI	Cargo compartment upholstery	07-74001-FP		
07-74001-FP	Foldable stretcher	07-40001-CI 07-40002-CI 07-60001-CI		
Avionics				
08-11005-CI	VOR-VHF/AM n°1 Honeywell KX 165	08-11014-CI 08-52001-CI		
08-11014-CI	VOR-VHF/AM n°1 Honeywell KX 165 with OBS indicator KI 202	08-11005-CI 08-25002-CI 08-50003-CI		
08-25002-CI	DME Honeywell KN 63 and Glide function	08-11014-CI 08-52001-CI		
08-50003-CI	Gyro compass with navigation coupling Honeywell KCS 55 A	08-11014-CI 08-52001-CI		
08-52001-CI	Gyro-directional indicator AIM 205-2B	08-11005-CI 08-25002-CI 08-50003-CI		



5- Main performance

The following performance values and figures refer to an EC 120 B 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.

Cross Woight	kg	1,350	1,450	1,550	1,715	1,800 <i>1</i>
Gross Weight	lb	2,976	3,197	3,417	3,780	3,968
■ Max. speed, VNE 2	km/hr	278	278	278	278	-
•	kts	150	150	150	150	-
Fast cruise speed	km/hr	236	233	230	223	-
	kts	127	126	124	120	-
Recommended cruise speed	km/hr	216	213	210	204	-
	kts	117	115	113	110	-
Fuel consumption at recommended cruise speed	kg/hr	97	97	97	97	-
	lb/h	213	213	213	213	-
Rate-of-climb	m/sec.	7.12	6.86	6.60	5.84	5.33
	ft/min.	1,400	1,350	1,300	1,150	1,050
Hover ceiling I.G.E. at Take-Off Power						
Standard atmosphere	m	5,151	4,542	3,932	2,819	-
	ft	16,900	14,900	12,900	9,250	-
 standard atmosphere + 20°C 	m	3,840	3,078	2,316	1,112	-
	ft	12,600	10,100	7,600	3,650	-
■ Hover ceiling O.G.E. at Take-Off Power						
 Standard atmosphere 	m	4,785	4,115	3,444	2,316	899
	ft	15,700	13,500	11,300	7,600	2,950

•



Operating limitations

The aircraft can be operated normally within the following altitude and temperature limitations:

■ Maximum pressure altitude : 6,096 m – 20,000 ft

■ Maximum temperature : ISA + 35° C, limited to + 50°C

■ Minimum temperature : -40° C

Remarks:

When equipped with appropriate optional equipment, the EC 120 B is JAA certified for DAY AND NIGHT VFR operations.

The operator shall check current operational regulations of the concerned country.

Abbreviations

IGE: In Ground Effect

ISA: International Standard Atmosphere

Vz: Rate-of-Climb

OGE: Out of Ground Effect

Units

n.m. : nautical miles hr:min: hours:minutes kts: knots kilograms kg: ft/min: feet/minute lb : pounds kilometers m/sec: meters per seconds km:

° C: degrees Celsius



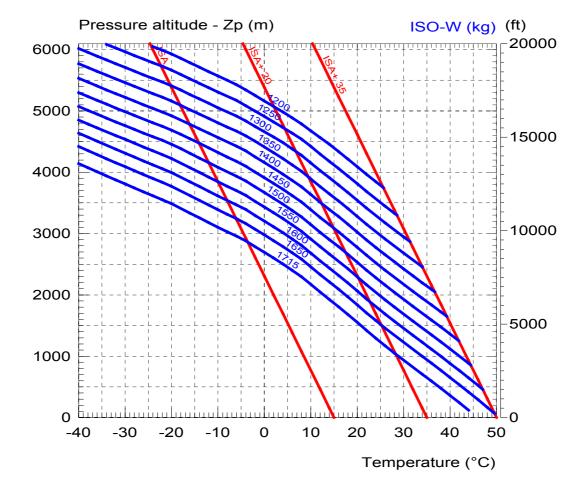
Performance charts



HOVER CEILING I.G.E.

(Height 5 ft)

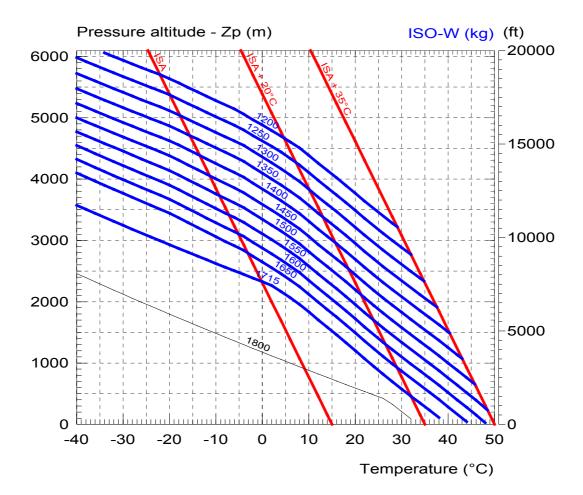
Maximum take-off power





HOVER CEILING O.G.E.

Maximum take-off power

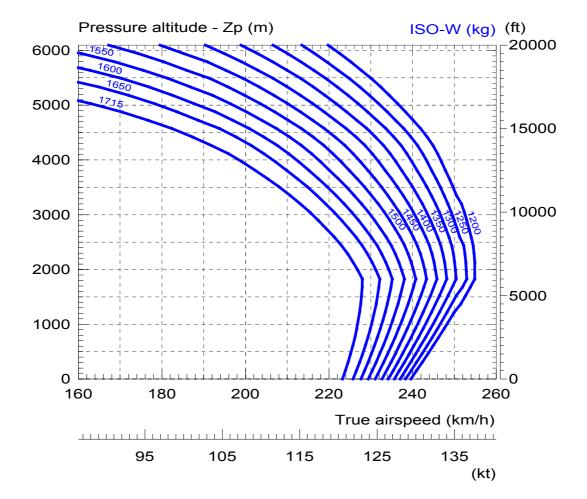


Note: ISO weight curve, at 1,800 kg is the curve with external load



FAST CRUISE SPEED

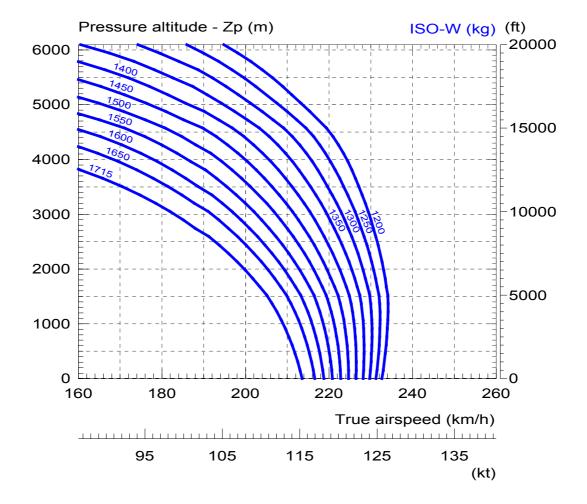
ISA





FAST CRUISE SPEED

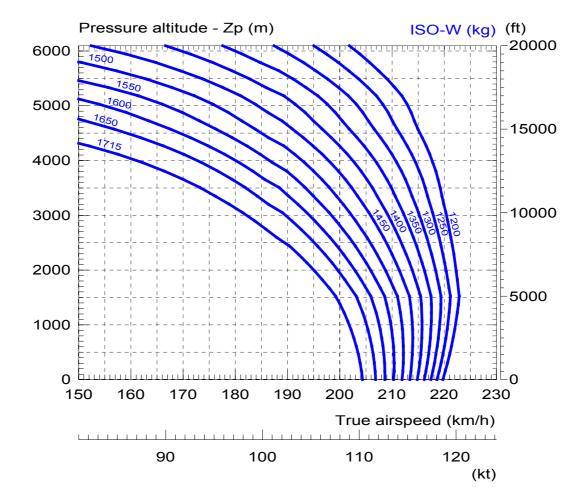
ISA + 20°C





RECOMMENDED CRUISE SPEED

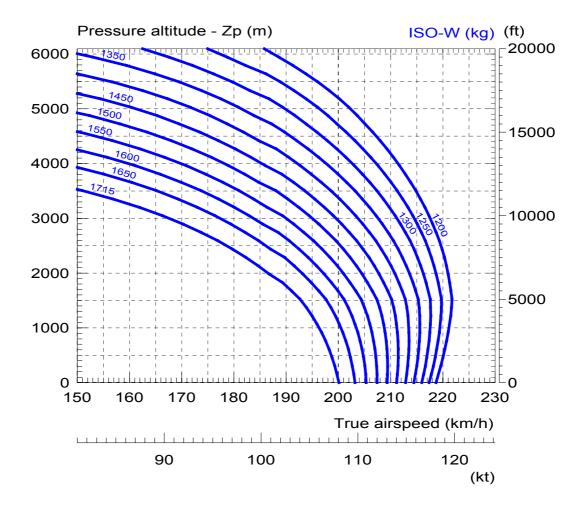
ISA





RECOMMENDED CRUISE SPEED

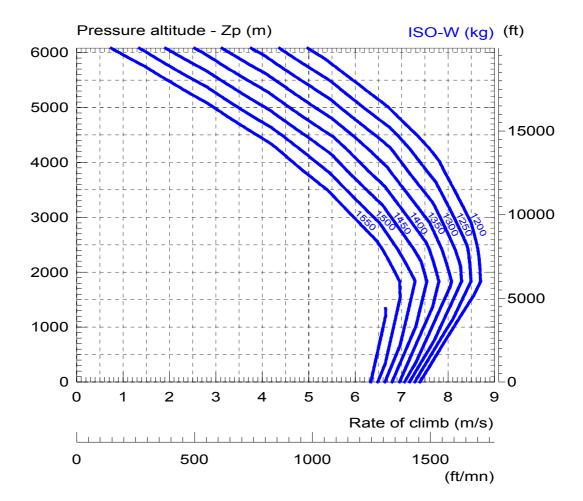
ISA + 20°C





RATE OF CLIMB

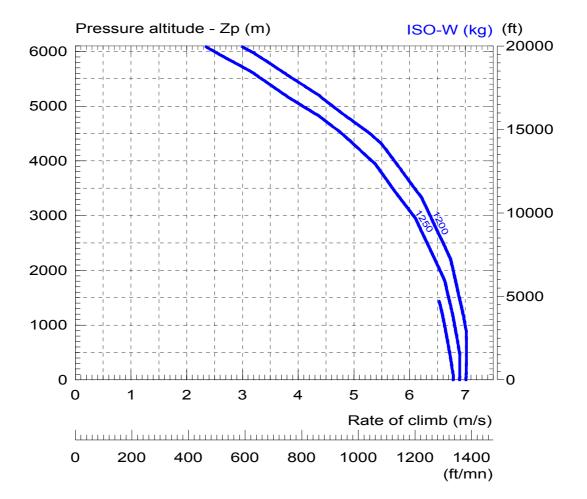
ISA





RATE OF CLIMB

ISA + 20°C

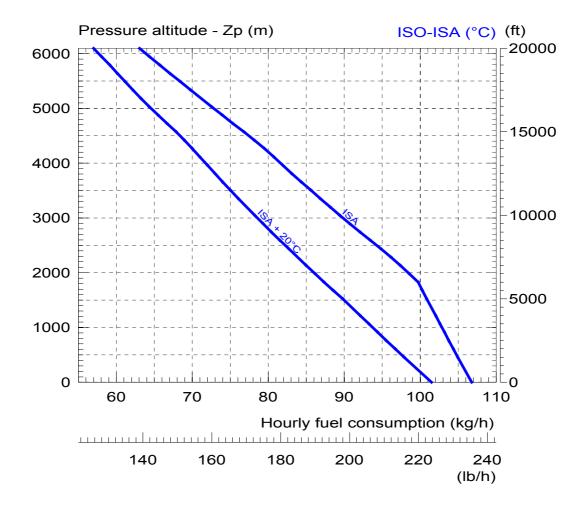




HOURLY FUEL CONSUMPTION

At fast cruise speed

ISA, ISA + 20°C

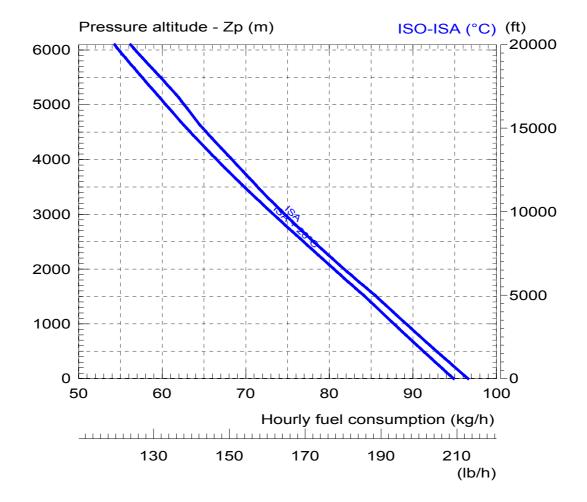




HOURLY FUEL CONSUMPTION

At recommended cruise speed

ISA, ISA + 20°C

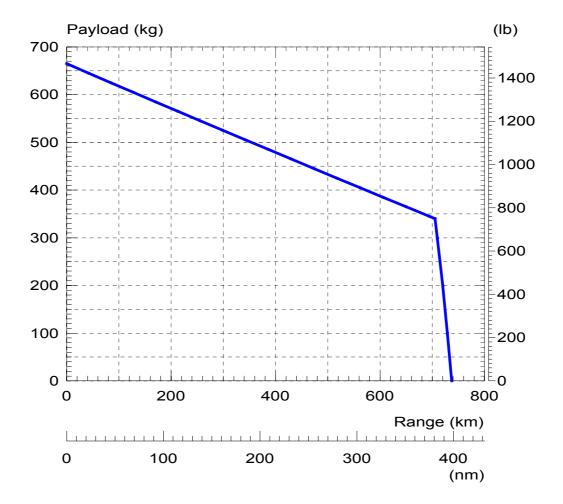




INTERNAL PAYLOAD VERSUS RANGE

Zp=0 - ISA

Recommended cruise speed



Note:

This curve is given for a maximum payload and fuel of 670 kg.

This value is the standard aircraft useful load (750 kg) less the pilot's mass (80 kg)



6- Customer Service Overview

Assets

Support concept has been considered during EC 120B design and development phases. It presents the following assets :

- Possibility to perform maximum of maintenance tasks by operators: reconditioning through part exchange offered to operators for airframe components and engine e.g MGB (freewheel, gears, output for hydraulic unit), TGB(gears), electrical heart, etc....
- Low required manhour on the scheduled maintenance confirmed by Customer's return of experience,
- Maintenance simple and easy to perform thanks to optimized accessibility to dynamic components and equipment,
- Among innovative equipment providing flight information, the "Vehicle and Engine Multi-function Display" (VEMD) also offers maintenance aids (failure data recording and trouble-shooting information).
- Limited number of tools,
- No test bench,
- Manufacturing of some tools by operator using technical publications supplied with the helicopter,
- Among technical publications, Master Servicing Manual has been written in such a manner that it can be used as a maintenance tasks repertory.
- Neighbourly EC120B Customer Service network offering full range services (training, spares, standard exchange, repair/overhaul, customization, technical assistance, warranty,...).

Maintenance and maintainability data

"Scheduled" and "unscheduled" maintenance (engine excluded) are considered in manhour figures given hereafter.

Scheduled maintenance

Possibility to perform maintenance tasks according to each operator needs :

- blocked whole inspection (helicopter unavailable during all the inspection duration),
- "splitted" inspection (helicopter available for flight since the inspection is performed in several batches of maintenance operations, in respect with the limitations and periodicities defined in the Master Servicing Manual).



Estimated Mean Man Hour per Flying Hour (MMH/FH) (standard aircraft/300 Flying hour/year - 2 flights per day)

0.65 MMH/FH (Scheduled + unscheduled + Service Bulletins implementation)

MMH/FH: Mean Man Hour per Flight Hour

Detail

■ Basic

Flight-related checks :	Pilot's task up to 100 flight hours inspection		
100 flight hours or 12 months inspection Including average "corrective" works	2.6 hours 2.6 MMH for 100 flight hours	0.026 MMH/FH	
500 flight hours or 24 months inspection Including average "corrective" works	103 MMH per inspection 103 MMH for 500 flight hours	0.205 MMH/FH	
1500 flight hours or 72 months inspection Including average "corrective" works	51 MMH per inspection 51 MMH per 1500 flight hours	0.034 MMH/FH	
144 months inspection Including average "corrective" works	300 MMH	0.083 MMH/FH	

■ Unscheduled (reliability cause) 0.25 MMH/FH

■ Service Bulletins implementation 0.05 MMH/FH

MMH: Mean Man Hour



Time Between Overhaul (TBO) / Service Life Limit (SLL)

Major assemblies	TBO (hr)	SLL (hr)
Main Blade		20000
Rear Blade		8500
MGB		
■ Epicyclic reduction gear + Mast/Hub	3000 *	
■ Main module, MGB	3000 *	
Complete engine	3000 *	
TGB	3000 *	
Main servo-unit	4000	

^{*} Target values

Documentation

Eurocopter EC 120 B technical documentation, pleasant and easy to consult, is basically supplied:

■ On an Interactive Electronic Support (CD-ROM INDOC-EC 120) that includes the whole documentation : Operating (except Flight Manual), Maintenance, Identification and Specific documents.

The CD-ROM product presents great advantages such as :

- More efficiency in maintenance thanks to :
 - ♦ Direct and instantaneous access to manuals and data by "hypertext" navigation
 - ♦ Easy search by keywords and multiple criteria
 - ♦ Highly portable technical publications in an extremely compact format
- Quick updating without insertion mistake risk.

and

■ On paper

- Flight Manual
- Other documents: Master Servicing Manual, Wiring Diagrams Manual, Service Bulletins.

Note: 1. As an option, the whole Eurocopter documentation is available on paper.

2. Turbomeca ARRIUS 2F engine technical documentation is available both under CD-ROM and paper format.



Blank