



## ***European Aviation Safety Agency***

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**EASA**

**TYPE-CERTIFICATE  
DATA SHEET**

No. R.009

**for**  
EC135

**Type Certificate Holder**  
**EUROCOPTER DEUTSCHLAND GmbH**

*Industriestrasse 4  
D-86609 Donauwörth  
Germany*

For Models: EC135 P1, EC135 P2, EC135 P2+, EC 635 P2+, EC135 T1, EC 635 T1  
EC135 T2, EC135 T2+, EC 635 T2+

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## **SECTION 1: EC135 P1(CDS)**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type EC135

1.2 Model P1

1.3 Variant (CDS)

2. Airworthiness Category Small Rotorcraft

3. Manufacturer EUROCOPTER DEUTSCHLAND GmbH

4. EASA Certification Application Date\* 12 Dec 1994

Note\* (Primary Certification Authority certification application date for Grandfathered products)

5. National Certifying Authority Luftfahrt-Bundesamt, Germany

6. National Authority Type Certificate Date 14 Jun 1996 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 12 Dec 1994

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:
  - 29.861 (a) Fire Protection of Structure, controls, and other parts
  - 29.901 (c) Powerplant: Installation
  - 29.903 (b),(c),(e) Engines
  - 29.908 (a) Cooling fans
  - 29.917 (b),(c)(1) Rotor Drive System: Design
  - 29.927 (c)(1) Additional tests
  - 29.953 (a) Fuel system independence
  - 29.1027 (a) Transmission and gearboxes
  - 29.1045 (a)(1),(b),(c),(d),(f) Climb cooling test procedures
  - 29.1047 (a) Take-off cooling test procedures
  - 29.1181 (a) Designated fire zones: regions included
  - 29.1189 (c) Shutoff means
  - 29.1191 (a)(1) Firewalls
  - 29.1193 (e) Cowling and engine compartment covering
  - 29.1305 (a)(6),(b) Powerplant instruments
  - 29.1309 (b)(2)(i), (d) Equipment, systems and installations
  - 29.1331 (b) Instruments using power supply
  - 29.1351 (d)(2) Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June 1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and EFIS EFS 40
  - Single Pilot/ Dual Pilot IFR certification with AFCS and EFIS EFS 40)

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS 27.1(a) in connection with CS 27.2(b)(2)(i) to have a maximum weight up to 3175 kg

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

1. Type Design Definition - EC135 Basic Master List Drawing No. L000M0007051  
- Drawing No. L000M0002051 and following modifications
2. Description  
Main rotor: bearingless, 4 blades  
Tail rotor: Fenestron, 10 blades  
Fuselage: metal-composite structure with Skid-type landing gear  
Power plant: Two independent freewheel turbines
3. Equipment  
Basic equipment must be installed and operational prior to registration of the helicopter.
4. Dimensions
- |                |                    |        |
|----------------|--------------------|--------|
| 4.1 Fuselage   | Length             | 5,87 m |
|                | Width              | 1,56 m |
|                | Height             | 3,35 m |
| 4.2 Main Rotor | 4 blades, diameter | 10,2 m |

4.3 Tail Rotor 10 blades, diameter 1,0 m

5. Engine

5.1 Model Pratt & Whitney Canada, PW 206B

5.2 Type Certificate EASA.IM.E.017

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	57250 [98.7]	104	854
AEO-MCP	2 x 69	56500 [97.4]	104	820
<b>One Engine Inoperative</b>				
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP	1 x 100	59400 [102.4]	104	930
OEI-MCP	1 x 86	58250 [100.4]	104	885

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

7. Fluid capacities

7.1 Fuel *with standard fuel tank* total fuel: 680 l maximum  
useable fuel: 670.5 l

*with self sealing fuel tank* total fuel: 673.4 l maximum  
useable fuel: 664 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits

V<sub>NE</sub> = 155 knots

(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)

9. Rotor Speed Limits

Power on: maximum 104 %  
minimum 95 %

Power off: maximum 106 %  
minimum 80 % (up to 1900 kg)  
minimum 85 % (above 1900 kg)

Transient: (see EASA approved RFM)

10. Maximum Operating Altitude and Temperature

10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)

10.2 Temperature (see EASA approved RFM)

11. Operating Limitations VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 2
12. Maximum Masses 2720 kg /2835 kg (See note)  
Note:  
Operation of the aircraft with MTOW between 2720 kg and 2835 kg is only permitted in accordance with FMS 9.1-3 "Supplement for flights with gross mass above 2720 kg up to 2835 kg" and when SB EC135-11-003 is incorporated.
13. Centre of Gravity Range Longitudinal C.G Limits,  
maximum forward limit 4180 mm aft of DP at 1840 kg  
4219 mm aft of DP at 2720 kg  
4224 mm aft of DP at 2835 kg  
maximum rearward limit: 4570 mm aft of DP at 1500 kg  
4387 mm aft of DP at 2720 kg  
4369 mm aft of DP at 2835 kg  
Lateral C.G Limits,  
maximum deviation on right / left: 100 mm
14. Datum Longitudinal: 2160 mm forward of the levelling point in the front door frame  
Lateral: fuselage median plane
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads 1130 kg with maximum loading 600 kg/m<sup>2</sup>
20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU) n/a
22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC135 P1(CDS), firstly LBA approved on 14.06.1996, or later LBA/ EASA approved revision, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.



- |  |   |
|--|---|
| 2. Maintenance Manual                    | a. EC135 Master Servicing Manual<br>b. EC135 Aircraft Maintenance Manual<br>c. Wiring Diagram Manual, latest revision<br>d. Engine documents as per EASA Engine TCDS No. IM.E.017   |
| 3. Structural Repair Manual              | EC135 Structural Repair Manual  |
| 4. Weight and Balance Manual             | see above   |
| 5. Illustrated Parts Catalogue           | EC135 Illustrated Parts Catalogue   |
| 6. Service Letters and Service Bulletins | safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets |
| 7. Required Equipment                    | special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.   |

#### **V. Notes**

- |                             |  |
|-----------------------------|--|
| 1. Eligible serial numbers: | 0006 and upwards   |
| 2. Ditching                 | <p>The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.</p> <p>The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:</p> <ul style="list-style-type: none"><li>– survival type emergency locator transmitter</li><li>– life raft installation</li><li>– life preserver</li></ul> |

## **SECTION 2: EC135 P1(CPDS)**

### **I. General**

1. Type/ Variant or Model	
1.1 Type	EC135
1.2 Model	P1
1.3 Variant	(CPDS)
2. Airworthiness Category	Small Rotorcraft
3. Manufacturer	EUROCOPTER DEUTSCHLAND GmbH
4. EASA Certification Application Date*	11 April 1996
<u>Note* (Primary Certification Authority certification application date for Grandfathered products)</u>	
5. National Certifying Authority	Luffahrt-Bundesamt, Germany
6. National Authority Type Certificate Date	06 November 1998 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements      11 April 1996
2. Airworthiness Requirements
  - JAR 27, first issue 06 September 1993.
  - For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
  - Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations
29.1331 (b)	Instruments using power supply
29.1351 (d)(2)	Electrical systems and equipment: General
  - For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June 1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS
- 3. Special Conditions
  - Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
  - Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
  - Special Condition No. SC 3 "Electronic Flight Instrument Systems"
  - Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"
- 4. Exemptions n/a
- 5. (Reserved) Deviations n/a
- 6. Equivalent Safety Findings
  - Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
  - Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
  - Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System
- 7. Requirements elected to comply
  - Elect to Comply with CS 27.1(a) in connection with CS 27.2(b)(2)(i) to have a maximum weight up to 3175 kg
- 8. Environmental Protection Standards
  - See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

### **III. Technical Characteristics and Operational Limitations**

- 1. Type Design Definition
  - EC135 Basic Master List Drawing No. L000M0007051
  - Drawing No. L000M0010051 and following modifications
- 2. Description
  - Main rotor: bearingless, 4 blades
  - Tail rotor: Fenestron, 10 blades
  - Fuselage: metal-composite structure with Skid-type landing gear
  - Power plant: Two independent freewheel turbines
- 3. Equipment
  - Basic equipment must be installed and operational prior to registration of the helicopter.
- 4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

## 5. Engine

5.1 Model	Pratt & Whitney Canada, PW 206B
5.2 Type Certificate	EASA.IM.E.017
5.3 Limitations	

### Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	57250 [98.7]	104	854
AEO-MCP	2 x 69	56500 [97.4]	104	820
<b>One Engine Inoperative</b>				
2½ min OEI-TOP	1 x 100	59400 [102.4]	104	930
OEI-MCP	1 x 86	58250 [100.4]	104	885

## 6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	see EASA approved RFM
6.2 Oil	see EASA approved RFM
6.3 Additives	see EASA approved RFM

## 7. Fluid capacities

7.1 Fuel	<i>with standard fuel tank</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with self sealing fuel tank</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l
7.2 Oil	see EASA approved RFM		
7.3 Coolant system capacity	n/a		

## 8. Air Speeds Limits

$V_{NE} = 155$  knots  
(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)

## 9. Rotor Speed Limits

Power on:	maximum	104 %
	minimum	95 %
Power off:	maximum	106 %
	minimum	80 % (up to 1900 kg)
	minimum	85 % (above 1900 kg)
Transient:	(see EASA approved RFM)	

## 10. Maximum Operating Altitude and Temperature

10.1 Altitude	6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
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10.2 Temperature	(see EASA approved RFM)
11. Operating Limitations	VFR Day and Night, No flight in icing condition; for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS) for Ditching see Note 3
12. Maximum Masses	2720 kg /2835 kg (See note) Note: Operation of the aircraft with MTOW between 2720 kg and 2835 kg is only permitted in accordance with FMS 9.1-3 "Supplement for flights with gross mass above 2720 kg up to 2835 kg" and when SB EC135-11-003 is incorporated.
13. Centre of Gravity Range	Longitudinal C.G Limits, maximum forward limit 4180 mm aft of DP at 1840 kg 4219 mm aft of DP at 2720 kg 4224 mm aft of DP at 2835 kg maximum rearward limit: 4570 mm aft of DP at 1500 kg 4387 mm aft of DP at 2720 kg 4369 mm aft of DP at 2835 kg  Lateral C.G Limits, maximum deviation on right / left: 100 mm
14. Datum	Longitudinal: 2160 mm forward of the levelling point in the front door frame  Lateral: fuselage median plane
15. Levelling Means	(see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew	one pilot, right side
17. Maximum Passenger Seating Capacity	six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit	two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads	1130 kg with maximum loading 600 kg/m <sup>2</sup>
20. Rotor Blade control movement	(see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU)	n/a
22. Life- limited parts	(Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres	Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual	EC135 P1(CPDS), firstly LBA approved on 06.11.1998, or later LBA/ EASA approved revision, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.
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- |  |   |
|--|---|
| 2. Maintenance Manual                    | a. EC135 Master Servicing Manual<br>b. EC135 Aircraft Maintenance Manual<br>c. Wiring Diagram Manual, latest revision<br>d. Engine documents as per EASA Engine TCDS No. IM.E.017   |
| 3. Structural Repair Manual              | EC135 Structural Repair Manual  |
| 4. Weight and Balance Manual             | see above   |
| 5. Illustrated Parts Catalogue           | EC135 Illustrated Parts Catalogue   |
| 6. Service Letters and Service Bulletins | safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets |
| 7. Required Equipment                    | special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.   |

## **V. Notes**

1. Eligible serial numbers: 0030 and upwards
2. Night Vision Goggles Operational Capability:

Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.

Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
3. Ditching

The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.

The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:

  - survival type emergency locator transmitter
  - life raft installation
  - life preserver

## **SECTION 3: EC135 P2(CPDS)**

### **I. General**

1. Type/ Variant or Model	
1.1 Type	EC135
1.2 Model	P2
1.3 Variant	(CPDS)
2. Airworthiness Category	Small Rotorcraft
3. Manufacturer	EUROCOPTER DEUTSCHLAND GmbH
4. EASA Certification Application Date*	05 June 2001
<u>Note* (Primary Certification Authority certification application date for Grandfathered products)</u>	
5. National Certifying Authority	Luftfahrt-Bundesamt, Germany
6. National Authority Type Certificate Date	10 July 2001 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements      05 June 2001
2. Airworthiness Requirements
  - JAR 27, first issue 06 September 1993.
  - For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
  - Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations
29.1331 (b)	Instruments using power supply
29.1351 (d)(2)	Electrical systems and equipment: General
  - For CAT A Certification:

JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June 1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- n/a

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- 1. Type Design Definition
  - EC135 Basic Master List Drawing No. L000M0007051
  - Drawings No. L000M0010051 + L710M0013054 and following modifications
- 2. Description
  - Main rotor: bearingless, 4 blades
  - Tail rotor: Fenestron, 10 blades
  - Fuselage: metal-composite structure with Skid-type landing gear
  - Power plant: Two independent freewheel turbines
- 3. Equipment
  - Basic equipment must be installed and operational prior to registration of the helicopter.
- 4. Dimensions



4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model	Pratt & Whitney Canada, PW 206B2
5.2 Type Certificate	EASA.IM.E.017
5.3 Limitations	

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	57250 [98.7]	104	869
AEO-MCP	2 x 69	56500 [97.4]	104	835
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	60500 [104.3]	104	990
2 min OEI-TOP	1 x 125	59500 [102.6]	104	950
OEI-MCP	1 x 86	58250 [100.4]	104	900

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	see EASA approved RFM
6.2 Oil	see EASA approved RFM
6.3 Additives	see EASA approved RFM

7. Fluid capacities

7.1 Fuel	with standard fuel tank (up to S/N 249)	total fuel:	680 l maximum
		useable fuel:	670.5 l
	with self sealing fuel tank (up to S/N 249)	total fuel:	673.4 l maximum
		useable fuel:	664 l
	with modified fuel tank (from S/N 250)	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	with self sealing fuel tank (from S/N 250)	total fuel:	701.0 l maximum
		useable fuel:	691.6 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits

$V_{NE} = 155$  knots

(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)

9. Rotor Speed Limits

Power on: maximum 104 %  
minimum 97 %

	Power off:	maximum 106 % minimum 80 % (up to 1900 kg) minimum 85 % (above 1900 kg)
	Transient:	(see EASA approved RFM)
10. Maximum Operating Altitude and Temperature		
10.1 Altitude		6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
10.2 Temperature		(see EASA approved RFM)
11. Operating Limitations		
		VFR Day and Night, No flight in icing condition; For IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS) For Ditching see Note 3
12. Maximum Masses		2835 kg
13. Centre of Gravity Range		
	Longitudinal C.G Limits,	
	maximum forward limit	4180 mm aft of DP at 1840 kg 4224 mm aft of DP at 2835 kg
	maximum rearward limit:	4570 mm aft of DP at 1500 kg 4369 mm aft of DP at 2835 kg
	Lateral C.G Limits,	
	maximum deviation on right / left:	100 mm
14. Datum		
	Longitudinal:	2160 mm forward of the levelling point in the front door frame
	Lateral:	fuselage median plane
15. Levelling Means		(see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew		one pilot, right side
17. Maximum Passenger Seating Capacity		
		six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit		two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads		
		1130 kg with maximum loading 600 kg/m <sup>2</sup>
20. Rotor Blade control movement		(see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU)		n/a
22. Life- limited parts		(Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres		Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual	EC135 P2(CPDS), firstly LBA approved on 10.07.2001, or later LBA/ EASA approved revision, including the
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- supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.
2. Maintenance Manual
    - a. EC135 Master Servicing Manual
    - b. EC135 Aircraft Maintenance Manual
    - c. Wiring Diagram Manual, latest revision
    - d. Engine documents as per EASA Engine TCDS No. IM.E.017
  3. Structural Repair Manual EC135 Structural Repair Manual
  4. Weight and Balance Manual see above
  5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
  6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
  7. Required Equipment  
special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0189 and upwards
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
3. Ditching  
The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.  
The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
  - survival type emergency locator transmitter
  - life raft installation
  - life preserver

## **SECTION 4: EC135 P2+**

### **I. General**

1. Type/ Variant or Model	
1.1 Type	EC135
1.2 Model	P2
1.3 Variant	+
2. Airworthiness Category	Small Rotorcraft
3. Manufacturer	EUROCOPTER DEUTSCHLAND GmbH and Eurocopter ESPAÑA S.A., Polígono de los Llanos, Carretera de las Penas (CM3203), Km 5.3, 02006 Albacete, ESPANA
4. EASA Certification Application Date*	08 February 2005
<u>Note* (Primary Certification Authority certification application date for Grandfathered products)</u>	
5. National Certifying Authority	Luftfahrt-Bundesamt, Germany
6. National Authority Type Certificate Date	21 February 2006

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements      08 February 2005
2. Airworthiness Requirements
  - JAR 27, first issue 06 September 1993.
  - For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
  - Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993. Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations

29.1331 (b) Instruments using power supply  
29.1351 (d)(2) Electrical systems and equipment: General

- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993
- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June 1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS27.25 (a) (1) and CS27.143 (c) (1), Amdt 2; the provisions of CS27.143(c)(1) are demonstrated as a function of altitude and temperature:  
ECD is taking advantage of this possibility which is being provided from Amdt 1 of CS27 and later.

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

1. Type Design Definition - EC135 Basic Master List Drawing No. L000M0007051  
- Drawings of EC135 P2 (CPDS) + L000M0022051 and following modifications
2. Description Main rotor: bearingless, 4 blades  
Tail rotor: Fenestron, 10 blades  
Fuselage: metal-composite structure with Skid-type landing

gear  
Power plant: Two independent freewheel turbines

3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model Pratt & Whitney Canada, PW 206B2

5.2 Type Certificate EASA.IM.E.017

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 78	57250 [98.7]	104	869
AEO-MCP	2 x 69	56500 [97.4]	104	835
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	60500 [104.3]	104	990
2 min OEI-TOP	1 x 125	59500 [102.6]	104	950
OEI-MCP	1 x 89,5	58250 [100.4]	104	900

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

7. Fluid capacities

7.1 Fuel	with standard fuel tank (up to S/N 249)	total fuel:	680 l maximum
		useable fuel:	670.5 l
	with self sealing fuel tank (up to S/N 249)	total fuel:	673.4 l maximum
		useable fuel:	664 l
	with modified fuel tank (from S/N 250)	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	with self sealing fuel tank (from S/N 250)	total fuel:	701.0 l maximum
		useable fuel:	691.6 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits  $V_{NE} = 155$  knots  
(see EASA approved RFM for reduction in  $V_{NE}$  with altitude and other speed limitations)
9. Rotor Speed Limits  
Power on: maximum 104 %  
minimum 97 %  
Power off: maximum 106 %  
minimum 80 % (up to 1900 kg)  
minimum 85 % (above 1900 kg)  
Transient: (see EASA approved RFM)
10. Maximum Operating Altitude and Temperature  
10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)  
10.2 Temperature (see EASA approved RFM)
11. Operating Limitations  
VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 3
12. Maximum Masses 2910 kg /2950 kg (See note)  
Note:  
Operation of the aircraft with MTOW up to 2950 Kg is only permitted in accordance with FMS 9.1-5, FMS 9.1-6 and FMS 9.1-7 from S/N 1055 and subsequent or after SB EC135-62-028
13. Centre of Gravity Range  
Longitudinal C.G Limits,  
maximum forward limit 4180,0 mm aft of DP at 1840 kg  
4227,3 mm aft of DP at 2910 kg  
4229,3 mm aft of DP at 2950 kg  
maximum rearward limit 4570,0 mm aft of DP at 1500 kg  
4369,0 mm aft of DP at 2910 kg  
4362,6 mm aft of DP at 2950 kg  
Lateral C.G Limits,  
maximum deviation on right / left: 100 mm
14. Datum  
Longitudinal: 2160 mm forward of the levelling point in the front door frame  
Lateral: fuselage median plane
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity  
six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit two (one on each side of the passenger cabin)

19. Maximum Baggage/ Cargo Loads 1130 kg with maximum loading 600 kg/m<sup>2</sup>
20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU) n/a
22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC135 P2+, firstly EASA approved on 21.02.2006, in the latest revision, including the supplements for Special Operations FMS 9.1 and for Optional Equipment FMS 9.2
2. Maintenance Manual
- a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No. IM.E.017
3. Structural Repair Manual EC135 Structural Repair Manual
4. Weight and Balance Manual see above
5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
7. Required Equipment  
special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0505 and upwards  
Upgraded EC135 P2 model according to Service Bulletin EC135-71-033
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.



### 3. Ditching

The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.

The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:

- survival type emergency locator transmitter
- life raft installation
- life preserver

## **SECTION 5: EC635 P2+**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type EC135

1.2 Model EC635 P2

1.3 Variant +

2. Airworthiness Category Small Rotorcraft

3. Manufacturer EUROCOPTER DEUTSCHLAND GmbH

4. EASA Certification Application Date\* 17 July 2006

Note\* (Primary Certification Authority certification application date for Grandfathered products)

5. National Certifying Authority Luftfahrt-Bundesamt, Germany

6. National Authority Type Certificate Date 06 December 2006

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 17 July 2006

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:
  - 29.861 (a) Fire Protection of Structure, controls, and other parts
  - 29.901 (c) Powerplant: Installation
  - 29.903 (b),(c),(e) Engines
  - 29.908 (a) Cooling fans
  - 29.917 (b),(c)(1) Rotor Drive System: Design
  - 29.927 (c)(1) Additional tests
  - 29.953 (a) Fuel system independence
  - 29.1027 (a) Transmission and gearboxes
  - 29.1045 (a)(1),(b),(c),(d),(f) Climb cooling test procedures
  - 29.1047 (a) Take-off cooling test procedures
  - 29.1181 (a) Designated fire zones: regions included
  - 29.1189 (c) Shutoff means
  - 29.1191 (a)(1) Firewalls
  - 29.1193 (e) Cowling and engine compartment covering
  - 29.1305 (a)(6),(b) Powerplant instruments
  - 29.1309 (b)(2)(i), (d) Equipment, systems and installations
  - 29.1331 (b) Instruments using power supply
  - 29.1351 (d)(2) Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS27.25 (a) (1) and CS27.143 (c) (1), Amdt 2; the provisions of CS27.143(c)(1) are demonstrated as a function of altitude and temperature: ECD is taking advantage of this possibility which is being provided from Amdt 1 of CS27 and later.

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | - EC135 Basic Master List Drawing No. L000M0007051<br>- Drawings of EC135 P2 (CPDS) + L000M0022051 and following modifications<br>- EC635 Kit (Drawing No. W533M1700051)                    |
| 2. Description            | Main rotor: bearingless, 4 blades<br>Tail rotor: Fenestron, 10 blades<br>Fuselage: metal-composite structure with Skid-type landing gear<br>Power plant: Two independent freewheel turbines |

Note: The variant EC635 P2+ corresponds to the EC135 P2+ plus structural reinforcement of cabin structure according to the drawing W533M1700051

3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model	Pratt & Whitney Canada, PW 206B2
5.2 Type Certificate	EASA.IM.E.017
5.3 Limitations	

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 78	57250 [98.7]	104	869
AEO-MCP	2 x 69	56500 [97.4]	104	835
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	60500 [104.3]	104	990
2 min OEI-TOP	1 x 125	59500 [102.6]	104	950
OEI-MCP	1 x 89,5	58250 [100.4]	104	900

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	see EASA approved RFM
6.2 Oil	see EASA approved RFM
6.3 Additives	see EASA approved RFM

7. Fluid capacities

7.1 Fuel	with standard fuel tank (up to S/N 249)	total fuel:	680 l maximum
		useable fuel:	670.5 l
	with self sealing fuel tank (up to S/N 249)	total fuel:	673.4 l maximum
		useable fuel:	664 l
	with modified fuel tank (from S/N 250)	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	with self sealing fuel tank (from S/N 250)	total fuel:	701.0 l maximum
		useable fuel:	691.6 l
7.2 Oil	see EASA approved RFM		

7.3 Coolant system capacity n/a

8. Air Speeds Limits  $V_{NE} = 155$  knots  
(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)
9. Rotor Speed Limits  
Power on: maximum 104 %  
minimum 97 %  
Power off: maximum 106 %  
minimum 80 % (up to 1900 kg)  
minimum 85 % (above 1900 kg)  
Transient: (see EASA approved RFM)
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
- 10.2 Temperature (see EASA approved RFM)
11. Operating Limitations  
VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 3
12. Maximum Masses 2910 kg /2950 kg (See note)  
Note:  
Operation of the aircraft with MTOW up to 2950 Kg is only permitted in accordance with FMS 9.1-5, FMS 9.1-6 and FMS 9.1-7 from S/N 1055 and subsequent or after SB EC135-62-028
13. Centre of Gravity Range  
Longitudinal C.G Limits,  
maximum forward limit 4180,0 mm aft of DP at 1840 kg  
4227,3 mm aft of DP at 2910 kg  
4229,3 mm aft of DP at 2950 kg  
maximum rearward limit 4570,0 mm aft of DP at 1500 kg  
4369,0 mm aft of DP at 2910 kg  
4362,6 mm aft of DP at 2950 kg  
Lateral C.G Limits,  
maximum deviation on right / left: 100 mm
14. Datum  
Longitudinal: 2160 mm forward of the levelling point in the front door frame  
Lateral: fuselage median plane
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity  
six (or seven if the kit described in FMS 9.2-31 is installed and operated)

18. Passenger Emergency Exit two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads  
1130 kg with maximum loading 600 kg/m<sup>2</sup>
20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU) n/a
22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC635 P2+, firstly EASA approved on 06.12.2006, in the latest revision, including the supplements for Special Operations FMS 9.1 and for Optional Equipment FMS 9.2.
2. Maintenance Manual
- a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No. IM.E.017
3. Structural Repair Manual EC135 Structural Repair Manual
4. Weight and Balance Manual see above
5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
7. Required Equipment  
special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0505 and upwards  
Upgraded EC135 P2 model according to Service Bulletin EC135-71-033
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.

Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.

### 3. Ditching

The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.

The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:

- survival type emergency locator transmitter
- life raft installation
- life preserver

## **SECTION 6: EC135 T1(CDS)**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type EC135

1.2 Model T1

1.3 Variant (CDS)

2. Airworthiness Category Small Rotorcraft

3. Manufacturer EUROCOPTER DEUTSCHLAND GmbH

4. EASA Certification Application Date\* 12 Dec 1994

Note\* (Primary Certification Authority certification application date for Grandfathered products)

5. National Certifying Authority Luftfahrt-Bundesamt, Germany

6. National Authority Type Certificate Date 14 Jun 1996 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 12 Dec 1994

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:
  - 29.861 (a) Fire Protection of Structure, controls, and other parts
  - 29.901 (c) Powerplant: Installation
  - 29.903 (b),(c),(e) Engines
  - 29.908 (a) Cooling fans
  - 29.917 (b),(c)(1) Rotor Drive System: Design
  - 29.927 (c)(1) Additional tests
  - 29.953 (a) Fuel system independence
  - 29.1027 (a) Transmission and gearboxes
  - 29.1045 (a)(1),(b),(c),(d),(f) Climb cooling test procedures
  - 29.1047 (a) Take-off cooling test procedures
  - 29.1181 (a) Designated fire zones: regions included
  - 29.1189 (c) Shutoff means
  - 29.1191 (a)(1) Firewalls
  - 29.1193 (e) Cowling and engine compartment covering
  - 29.1305 (a)(6),(b) Powerplant instruments
  - 29.1309 (b)(2)(i), (d) Equipment, systems and installations
  - 29.1331 (b) Instruments using power supply
  - 29.1351 (d)(2) Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993



- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June 1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and EFIS EFS 40
  - Single Pilot/ Dual Pilot IFR certification with AFCS and EFIS EFS 40)

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS 27.1(a) in connection with CS 27.2(b)(2)(i) to have a maximum weight up to 3175 kg

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

1. Type Design Definition - EC135 Basic Master List Drawing No. L000M0007051  
- Drawing No. L000M0001051 and following modifications
2. Description  
Main rotor: bearingless, 4 blades  
Tail rotor: Fenestron, 10 blades  
Fuselage: metal-composite structure with Skid-type landing gear  
Power plant: Two independent freewheel turbines
3. Equipment  
Basic equipment must be installed and operational prior to registration of the helicopter.
4. Dimensions
- |                |                    |        |
|----------------|--------------------|--------|
| 4.1 Fuselage   | Length             | 5,87 m |
|                | Width              | 1,56 m |
|                | Height             | 3,35 m |
| 4.2 Main Rotor | 4 blades, diameter | 10,2 m |

4.3 Tail Rotor 10 blades, diameter 1,0 m

## 5. Engine

5.1 Model Turbomeca Arrius 2B1/2B1A/2B1A\_1

5.2 Type Certificate E.029

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	54706 [101,1]	104	895
AEO-MCP	2 x 69	53406 [98,7]	104	855
<b>One Engine Inoperative</b>				
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1)	1 x 100	56113 [103,7]	104	945
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A)	1 x 119,8			
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A_1)	1 x 128			
OEI-MCP	1 x 86	54706 [101,1]	104	895

## 6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

## 7. Fluid capacities

7.1 Fuel *with standard fuel tank* total fuel: 680 l maximum  
useable fuel: 670.5 l

*with modified fuel tank* total fuel: 710.0 l maximum  
useable fuel: 700.5 l

*with self sealing fuel tank* total fuel: 673.4 l maximum  
useable fuel: 664 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

## 8. Air Speeds Limits

V<sub>NE</sub> = 155 knots

(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)

## 9. Rotor Speed Limits

Power on: maximum 104 %  
minimum 95 %

Power off: maximum 106 %  
minimum 80 % (up to 1900 kg)  
minimum 85 % (above 1900 kg)

Transient: (see EASA approved RFM)

## 10. Maximum Operating Altitude and Temperature

10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)

10.2 Temperature	(see EASA approved RFM)
11. Operating Limitations	VFR Day and Night, No flight in icing condition; for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS) for Ditching see Note 2
12. Maximum Masses	2720 kg /2835 kg (See note) Note: Operation of the aircraft with MTOW between 2720 kg and 2835 kg is only permitted in accordance with FMS 9.1-3 "Supplement for flights with gross mass above 2720 kg up to 2835 kg" and when SB EC135-11-003 is incorporated.
13. Centre of Gravity Range	Longitudinal C.G Limits, maximum forward limit    4180 mm aft of DP at 1840 kg 4219 mm aft of DP at 2720 kg 4224 mm aft of DP at 2835 kg  maximum rearward limit: 4570 mm aft of DP at 1500 kg 4387 mm aft of DP at 2720 kg 4369 mm aft of DP at 2835 kg  Lateral C.G Limits, maximum deviation on right / left: 100 mm
14. Datum	Longitudinal: 2160 mm forward of the levelling point in the front door frame  Lateral: fuselage median plane
15. Levelling Means	(see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew	one pilot, right side
17. Maximum Passenger Seating Capacity	six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit	two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads	1130 kg with maximum loading 600 kg/m <sup>2</sup>
20. Rotor Blade control movement	(see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU)	n/a
22. Life- limited parts	(Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres	Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual	EC135 T1(CDS), firstly LBA approved on 14.06.1996, or later LBA/ EASA approved revision, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.
------------------	---

- |  |   |
|--|---|
| 2. Maintenance Manual                    | a. EC135 Master Servicing Manual<br>b. EC135 Aircraft Maintenance Manual<br>c. Wiring Diagram Manual, latest revision<br>d. Engine documents as per EASA Engine TCDS No. E.029  |
| 3. Structural Repair Manual              | EC135 Structural Repair Manual  |
| 4. Weight and Balance Manual             | see above   |
| 5. Illustrated Parts Catalogue           | EC135 Illustrated Parts Catalogue   |
| 6. Service Letters and Service Bulletins | safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets |
| 7. Required Equipment                    | special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.   |

**V. Notes**

- |                             |  |
|-----------------------------|--|
| 1. Eligible serial numbers: | 0005 and upwards   |
| 2. Ditching                 | The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.<br>The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:<br>– survival type emergency locator transmitter<br>– life raft installation<br>– life preserver |

## **SECTION 7: EC135 T1(CPDS)**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type EC135

1.2 Model T1

1.3 Variant (CPDS)

2. Airworthiness Category Small Rotorcraft

3. Manufacturer EUROCOPTER DEUTSCHLAND GmbH

4. EASA Certification Application Date\* 26 May 1999

Note\* (Primary Certification Authority certification application date for Grandfathered products)

5. National Certifying Authority Luftfahrt-Bundesamt, Germany

6. National Authority Type Certificate Date 11 April 1997 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 11 April 1997

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:
  - 29.861 (a) Fire Protection of Structure, controls, and other parts
  - 29.901 (c) Powerplant: Installation
  - 29.903 (b),(c),(e) Engines
  - 29.908 (a) Cooling fans
  - 29.917 (b),(c)(1) Rotor Drive System: Design
  - 29.927 (c)(1) Additional tests
  - 29.953 (a) Fuel system independence
  - 29.1027 (a) Transmission and gearboxes
  - 29.1045 (a)(1),(b),(c),(d),(f) Climb cooling test procedures
  - 29.1047 (a) Take-off cooling test procedures
  - 29.1181 (a) Designated fire zones: regions included
  - 29.1189 (c) Shutoff means
  - 29.1191 (a)(1) Firewalls
  - 29.1193 (e) Cowling and engine compartment covering
  - 29.1305 (a)(6),(b) Powerplant instruments
  - 29.1309 (b)(2)(i), (d) Equipment, systems and installations
  - 29.1331 (b) Instruments using power supply
  - 29.1351 (d)(2) Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS 27.1(a) in connection with CS 27.2(b)(2)(i) to have a maximum weight up to 3175 kg

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | - EC135 Basic Master List Drawing No. L000M0007051<br>- Drawing No. L000M0009051 and following modifications  |
| 2. Description            | Main rotor: bearingless, 4 blades<br>Tail rotor: Fenestron, 10 blades<br>Fuselage: metal-composite structure with Skid-type landing gear<br>Power plant: Two independent freewheel turbines |
| 3. Equipment              | Basic equipment must be installed and operational prior to registration of the helicopter.  |
| 4. Dimensions             |   |

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

## 5. Engine

5.1 Model	Turbomeca Arrius 2B1/2B1A/2B1A_1
5.2 Type Certificate	E.029
5.3 Limitations	

### Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	54706 [101,1]	104	895
AEO-MCP	2 x 69	53406 [98,7]	104	855
<b>One Engine Inoperative</b>				
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1)	1 x 100	56113 [103.7]	104	945
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A)	1 x 119,8			
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A_1)	1 x 128			
OEI-MCP	1 x 86	54706 [101.1]	104	895

## 6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	see EASA approved RFM
6.2 Oil	see EASA approved RFM
6.3 Additives	see EASA approved RFM

## 7. Fluid capacities

7.1 Fuel	<i>with standard fuel tank</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with modified fuel tank</i>	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	<i>with self sealing fuel tank</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l
7.2 Oil	see EASA approved RFM		
7.3 Coolant system capacity	n/a		

## 8. Air Speeds Limits

$V_{NE} = 155$  knots  
(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)

## 9. Rotor Speed Limits

Power on:	maximum	104 %
	minimum	95 %
Power off:	maximum	106 %
	minimum	80 % (up to 1900 kg)
	minimum	85 % (above 1900 kg)

- Transient: (see EASA approved RFM)
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
- 10.2 Temperature (see EASA approved RFM)
11. Operating Limitations VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 3
12. Maximum Masses 2720 kg /2835 kg (See note)
- Note:  
Operation of the aircraft with MTOW between 2720 kg and 2835 kg is only permitted in accordance with FMS 9.1-3 "Supplement for flights with gross mass above 2720 kg up to 2835 kg" and when SB EC135-11-003 is incorporated.
13. Centre of Gravity Range Longitudinal C.G Limits,  
maximum forward limit 4180 mm aft of DP at 1840 kg  
4219 mm aft of DP at 2720 kg  
4224 mm aft of DP at 2835 kg  
maximum rearward limit: 4570 mm aft of DP at 1500 kg  
4387 mm aft of DP at 2720 kg  
4369 mm aft of DP at 2835 kg  
Lateral C.G Limits,  
maximum deviation on right / left: 100 mm
14. Datum Longitudinal: 2160 mm forward of the levelling point in the front door frame  
Lateral: fuselage median plane
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads 1130 kg with maximum loading 600 kg/m<sup>2</sup>
20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU) n/a
22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres Skid type landing gear



#### **IV. Operating and Service Instructions**

- |  |   |
|--|---|
| 1. Flight Manual                         | EC135 T1(CPDS), firstly LBA approved on 26.05.1999, or later LBA/ EASA approved revision, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.  |
| 2. Maintenance Manual                    | a. EC135 Master Servicing Manual<br>b. EC135 Aircraft Maintenance Manual<br>c. Wiring Diagram Manual, latest revision<br>d. Engine documents as per EASA Engine TCDS No. E.029  |
| 3. Structural Repair Manual              | EC135 Structural Repair Manual  |
| 4. Weight and Balance Manual             | see above   |
| 5. Illustrated Parts Catalogue           | EC135 Illustrated Parts Catalogue   |
| 6. Service Letters and Service Bulletins | safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets |
| 7. Required Equipment                    | special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.   |

#### **V. Notes**

1. Eligible serial numbers: 0028, 0092 and upwards
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
3. Ditching  
The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.  
The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
  - survival type emergency locator transmitter
  - life raft installation
  - life preserver

## **SECTION 8: EC635 T1(CPDS)**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type	EC135
1.2 Model	EC635 T1
1.3 Variant	(CPDS)

#### 2. Airworthiness Category

Small Rotorcraft

#### 3. Manufacturer

EUROCOPTER DEUTSCHLAND GmbH

#### 4. EASA Certification Application Date\*

10 August 2001

Note\* (Primary Certification Authority certification application date for Grandfathered products)

#### 5. National Certifying Authority

Luffahrt-Bundesamt, Germany

#### 6. National Authority Type Certificate Date

31 August 2001 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 10 August 2001

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations
29.1331 (b)	Instruments using power supply
29.1351 (d)(2)	Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS 27.1(a) in connection with CS 27.2(b)(2)(i) to have a maximum weight up to 3175 kg

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

1. Type Design Definition - EC135 Basic Master List Drawing No. L000M0007051  
- Drawing No. L000M0009051 and following modifications  
- EC635 Kit (Drawing No. W530M0700051)
2. Description  
Main rotor: bearingless, 4 blades  
Tail rotor: Fenestron, 10 blades  
Fuselage: metal-composite structure with Skid-type landing gear  
Power plant: Two independent freewheel turbines
- Note: The variant EC635 T1 (CPDS) corresponds to the EC135 T1 (CPDS) plus structural reinforcement of cabin structure according to the drawing W530M0700051.

3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model Turbomeca Arrius 2B1/2B1A/2B1A\_1

5.2 Type Certificate E.029

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	54706 [101,1]	104	895
AEO-MCP	2 x 69	53406 [98,7]	104	855
<b>One Engine Inoperative</b>				
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1)	1 x 100	56113 [103,7]	104	945
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A)	1 x 119,8			
2 <sup>1</sup> / <sub>2</sub> min OEI-TOP (2B1A_1)	1 x 128			
OEI-MCP	1 x 86	54706 [101,1]	104	895

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

7. Fluid capacities

7.1 Fuel	<i>with standard fuel tank</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with modified fuel tank</i>	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	<i>with self sealing fuel tank</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits  $V_{NE} = 155$  knots

(see EASA approved RFM for reduction in  $V_{NE}$  with altitude and other speed limitations)

9. Rotor Speed Limits Power on: maximum 104 %  
minimum 95 %

	Power off:	maximum 106 % minimum 80 % (up to 1900 kg) minimum 85 % (above 1900 kg)
	Transient:	(see EASA approved RFM)
10. Maximum Operating Altitude and Temperature		
10.1 Altitude		6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
10.2 Temperature		(see EASA approved RFM)
11. Operating Limitations		VFR Day and Night, No flight in icing condition; for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS) for Ditching see Note 3
12. Maximum Masses		2720 kg /2835 kg (See note) Note: Operation of the aircraft with MTOW between 2720 kg and 2835 kg is only permitted in accordance with FMS 9.1-3 "Supplement for flights with gross mass above 2720 kg up to 2835 kg" and when SB EC135-11-003 is incorporated.
13. Centre of Gravity Range		Longitudinal C.G Limits, maximum forward limit   4180 mm aft of DP at 1840 kg 4219 mm aft of DP at 2720 kg 4224 mm aft of DP at 2835 kg  maximum rearward limit: 4570 mm aft of DP at 1500 kg 4387 mm aft of DP at 2720 kg 4369 mm aft of DP at 2835 kg  Lateral C.G Limits, maximum deviation on right / left: 100 mm
14. Datum		Longitudinal: 2160 mm forward of the levelling point in the front door frame  Lateral: fuselage median plane
15. Levelling Means		(see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew		one pilot, right side
17. Maximum Passenger Seating Capacity		six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit		two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads		1130 kg with maximum loading 600 kg/m <sup>2</sup>
20. Rotor Blade control movement		(see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU)		n/a
22. Life- limited parts		(Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres		Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC635 T1(CPDS), firstly LBA approved on 31.08.2001, in the latest revision. The RFM was firstly released as a combination from the actual RFM of EC135 T1(CPDS) and Flight Manual Appendix FMA 11-10 which includes the EC635 Kit, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.
2. Maintenance Manual
  - a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No.E.029
3. Structural Repair Manual EC135 Structural Repair Manual
4. Weight and Balance Manual see above
5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
7. Required Equipment special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0173 and upwards
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
3. Ditching  
The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.  
The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
  - survival type emergency locator transmitter
  - life raft installation
  - life preserver

## **SECTION 9: EC135 T2(CPDS)**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type EC135

1.2 Model T2

1.3 Variant (CPDS)

2. Airworthiness Category Small Rotorcraft

3. Manufacturer EUROCOPTER DEUTSCHLAND GmbH

4. EASA Certification Application Date\* 05 February 2002

Note\* (Primary Certification Authority certification application date for Grandfathered products)

5. National Certifying Authority Luftfahrt-Bundesamt, Germany

6. National Authority Type Certificate Date 09 August 2002 (TC No. 3061)

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements 05 February 2002

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:
  - 29.861 (a) Fire Protection of Structure, controls, and other parts
  - 29.901 (c) Powerplant: Installation
  - 29.903 (b),(c),(e) Engines
  - 29.908 (a) Cooling fans
  - 29.917 (b),(c)(1) Rotor Drive System: Design
  - 29.927 (c)(1) Additional tests
  - 29.953 (a) Fuel system independence
  - 29.1027 (a) Transmission and gearboxes
  - 29.1045 (a)(1),(b),(c),(d),(f) Climb cooling test procedures
  - 29.1047 (a) Take-off cooling test procedures
  - 29.1181 (a) Designated fire zones: regions included
  - 29.1189 (c) Shutoff means
  - 29.1191 (a)(1) Firewalls
  - 29.1193 (e) Cowling and engine compartment covering
  - 29.1305 (a)(6),(b) Powerplant instruments
  - 29.1309 (b)(2)(i), (d) Equipment, systems and installations
  - 29.1331 (b) Instruments using power supply
  - 29.1351 (d)(2) Electrical systems and equipment: General

- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993
- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- n/a

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | - EC135 Basic Master List Drawing No. L000M0007051<br>- Drawings No. L000M0009051 + L710M0012054 and following modifications  |
| 2. Description            | Main rotor: bearingless, 4 blades<br>Tail rotor: Fenestron, 10 blades<br>Fuselage: metal-composite structure with Skid-type landing gear<br>Power plant: Two independent freewheel turbines |



3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model Turbomeca Arrius 2B2

5.2 Type Certificate E.029

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 75	54117 [100]	104	897
AEO-MCP	2 x 69	53576 [99]	104	879
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	56823 [105.0]	104	1024
2 min OEI-TOP	1 x 125	56011 [103.5]	104	994
OEI-MCP	1 x 86	54821 [101.3]	104	942

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

7. Fluid capacities

7.1 Fuel:	<i>with standard fuel tank (up to S/N 249)</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with self sealing fuel tank (up to S/N 249)</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l
	<i>with modified fuel tank (from S/N 250 or S/B EC135-28-007)</i>	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	<i>with self sealing fuel tank (from S/N 250)</i>	total fuel:	701.0 l maximum
		useable fuel:	691.6 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits  $V_{NE} = 155$  knots

	(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)
9. Rotor Speed Limits	Power on: maximum 104 % minimum 97 %  Power off: maximum 106 % minimum 80 % (up to 1900 kg) minimum 85 % (above 1900 kg)  Transient: (see EASA approved RFM)
10. Maximum Operating Altitude and Temperature	
10.1 Altitude	6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
10.2 Temperature	(see EASA approved RFM)
11. Operating Limitations	VFR Day and Night, No flight in icing condition; for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS) for Ditching see Note 3
12. Maximum Masses	2835 kg
13. Centre of Gravity Range	Longitudinal C.G Limits, maximum forward limit 4180 mm aft of DP at 1840 kg 4224 mm aft of DP at 2835 kg  maximum rearward limit: 4570 mm aft of DP at 1500 kg 4369 mm aft of DP at 2835 kg  Lateral C.G Limits, maximum deviation on right / left: 100 mm
14. Datum	Longitudinal: 2160 mm forward of the levelling point in the front door frame  Lateral: fuselage median plane
15. Levelling Means	(see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew	one pilot, right side
17. Maximum Passenger Seating Capacity	six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit	two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads	1130 kg with maximum loading 600 kg/m <sup>2</sup>
20. Rotor Blade control movement	(see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU)	n/a
22. Life- limited parts	(Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres	Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC135 T2(CPDS), firstly LBA approved on 09.08.2002, or later LBA/ EASA approved revision, including the supplements for Special Operations FMS 9.1 and Optional Equipment FMS 9.2.
2. Maintenance Manual
  - a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No E.029
3. Structural Repair Manual EC135 Structural Repair Manual
4. Weight and Balance Manual see above
5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
7. Required Equipment  
special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0243 and upwards  
Upgraded EC135 T1 model according to Service Bulletin EC135-71-023
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
3. Ditching  
The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.  
The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
  - survival type emergency locator transmitter
  - life raft installation
  - life preserver

## **SECTION 10: EC135 T2+**

### **I. General**

1. Type/ Variant or Model	
1.1 Type	EC135
1.2 Model	T2
1.3 Variant	+
2. Airworthiness Category	Small Rotorcraft
3. Manufacturer	EUROCOPTER DEUTSCHLAND GmbH and Eurocopter ESPANA S.A., Poligono de los Llanos, Carretera de las Penas (CM3203), Km 5.3, 02006 Albacete, ESPANA
4. EASA Certification Application Date*	08 February 2005
<i>Note* (Primary Certification Authority certification application date for Grandfathered products)</i>	
5. National Certifying Authority	Luftfahrt-Bundesamt, Germany
6. National Authority Type Certificate Date	21 February 2006

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements      08 February 2005
2. Airworthiness Requirements
  - JAR 27, first issue 06 September 1993.
  - For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
  - Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993. Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations
29.1331 (b)	Instruments using power supply
29.1351 (d)(2)	Electrical systems and equipment: General

- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993
- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS27.25 (a) (1) and CS27.143 (c) (1), Amdt 2; the provisions of CS27.143(c)(1) are demonstrated as a function of altitude and temperature: ECD is taking advantage of this possibility which is being provided from Amdt 1 of CS27 and later.

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | - EC135 Basic Master List Drawing No. L000M0007051<br>- Drawings of EC135 T2 (CPDS) + L000M0021051 and following modifications  |
| 2. Description            | Main rotor: bearingless, 4 blades<br>Tail rotor: Fenestron, 10 blades<br>Fuselage: metal-composite structure with Skid-type landing gear<br>Power plant: Two independent freewheel turbines |

3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model Turbomeca, Arrius 2B2

5.2 Type Certificate E.029

5.3 Limitations

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 78	54117 [100]	104	897
AEO-MCP	2 x 69	53576 [99]	104	879
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	56823 [105.0]	104	1024
2 min OEI-TOP	1 x 125	56011 [103.5]	104	994
OEI-MCP	1 x 89,5	54821 [101.3]	104	942

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel see EASA approved RFM

6.2 Oil see EASA approved RFM

6.3 Additives see EASA approved RFM

7. Fluid capacities

7.1 Fuel:	<i>with standard fuel tank (up to S/N 249)</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with self sealing fuel tank (up to S/N 249)</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l
	<i>with modified fuel tank (from S/N 250 or S/B EC135-28-007)</i>	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	<i>with self sealing fuel tank (from S/N 250)</i>	total fuel:	701.0 l maximum
		useable fuel:	691.6 l

7.2 Oil see EASA approved RFM

7.3 Coolant system capacity n/a

8. Air Speeds Limits  $V_{NE} = 155$  knots

- (see EASA approved RFM for reduction in VNE with altitude and other speed limitations)
9. Rotor Speed Limits
- Power on: maximum 104 %  
minimum 97 %
- Power off: maximum 106 %  
minimum 80 % (up to 1900 kg)  
minimum 85 % (above 1900 kg)
- Transient: (see EASA approved RFM)
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
- 10.2 Temperature (see EASA approved RFM)
11. Operating Limitations
- VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 3
12. Maximum Masses
- 2910 kg /2950 kg (See note)
- Note:  
Operation of the aircraft with MTOW up to 2950 Kg is only permitted in accordance with FMS 9.1-5, FMS 9.1-6 and FMS 9.1-7 from S/N 1055 and subsequent or after SB EC135-62-028
13. Centre of Gravity Range
- Longitudinal C.G Limits,  
maximum forward limit 4180,0 mm aft of DP at 1840 kg  
4227,3 mm aft of DP at 2910 kg  
4229,3 mm aft of DP at 2950 kg
- maximum rearward limit 4570,0 mm aft of DP at 1500 kg  
4369,0 mm aft of DP at 2910 kg  
4362,6 mm aft of DP at 2950 kg
- Lateral C.G Limits,  
maximum deviation on right / left: 100 mm
14. Datum
- Longitudinal: 2160 mm forward of the levelling point in the front door frame
- Lateral: fuselage median plane
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity  
six (or seven if the kit described in FMS 9.2-31 is installed and operated)
18. Passenger Emergency Exit two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads  
1130 kg with maximum loading 600 kg/m<sup>2</sup>

- 20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
- 21. Auxiliary Power Unit (APU) n/a
- 22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
- 23. Wheels and Tyres Skid type landing gear

#### **IV. Operating and Service Instructions**

- 1. Flight Manual EC135 T2+, firstly EASA approved on 21.02.2006, in the latest revision, including the supplements for Special Operations FMS 9.1 and for Optional Equipment FMS 9.2.
- 2. Maintenance Manual
  - a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No.E.029
- 3. Structural Repair Manual EC135 Structural Repair Manual
- 4. Weight and Balance Manual see above
- 5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
- 6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
- 7. Required Equipment special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

- 1. Eligible serial numbers: 0506 and upwards  
Upgraded EC135 T2 model according to Service Bulletin EC135-71-033
- 2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.
- 3. Ditching The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.



The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:

- survival type emergency locator transmitter
- life raft installation
- life preserver

## **SECTION 11: EC635 T2+**

### **I. General**

#### 1. Type/ Variant or Model

1.1 Type	EC135
1.2 Model	EC635 T2
1.3 Variant	+

#### 2. Airworthiness Category

Small Rotorcraft

#### 3. Manufacturer

EUROCOPTER DEUTSCHLAND GmbH

#### 4. EASA Certification Application Date\*

17 July 2006

Note\* (Primary Certification Authority certification application date for Grandfathered products)

#### 5. National Certifying Authority

Luffahrt-Bundesamt, Germany

#### 6. National Authority Type Certificate Date

06 December 2006

### **II. Certification Basis**

#### 1. Reference Date for determining the applicable requirements 17 July 2006

#### 2. Airworthiness Requirements

- JAR 27, first issue 06 September 1993.
- For IFR Certification: JAR 27 Appendix B, first issue of 06 September 1993
- Category A Engine Isolation Requirements of JAR 29, first issue 05 November 1993.  
Applicable paragraphs, selected from Appendix C to JAR 27, are:

29.861 (a)	Fire Protection of Structure, controls, and other parts
29.901 (c)	Powerplant: Installation
29.903 (b),(c),(e)	Engines
29.908 (a)	Cooling fans
29.917 (b),(c)(1)	Rotor Drive System: Design
29.927 (c)(1)	Additional tests
29.953 (a)	Fuel system independence
29.1027 (a)	Transmission and gearboxes
29.1045 (a)(1),(b),(c),(d),(f)	Climb cooling test procedures
29.1047 (a)	Take-off cooling test procedures
29.1181 (a)	Designated fire zones: regions included
29.1189 (c)	Shutoff means
29.1191 (a)(1)	Firewalls
29.1193 (e)	Cowling and engine compartment covering
29.1305 (a)(6),(b)	Powerplant instruments
29.1309 (b)(2)(i), (d)	Equipment, systems and installations
29.1331 (b)	Instruments using power supply
29.1351 (d)(2)	Electrical systems and equipment: General
- For CAT A Certification:  
JAR27 Appendix C, first issue of 06 September 1993

- JAA Interim HIRF Policy (INT/POL/278.29-1 dated 01 June1997) applies for:
  - Dual Pilot IFR certification with 3-axis SAS, Pitch-Damper and Avionique Nouvelle CPDS and FCDS
  - Single Pilot/ Dual Pilot IFR certification with AFCS and Avionique Nouvelle CPDS and FCDS

### 3. Special Conditions

- Special Condition No. SC 1 "Primary Structures Designed with Composite Material"
- Special Condition No. SC 2 "Protection for Electrical and Electronic Systems from High Intensity Radiated Fields"  
This Special Condition applies only for VFR and IFR certification with conventional instruments and for VFR certification with EFIS EFS 40.
- Special Condition No. SC 3 "Electronic Flight Instrument Systems"
- Special Condition No. SC 4 "Protection of air intake of EC135 against ingestion of foreign objects (Rain and Hail/Bird strike)"

4. Exemptions n/a

5. (Reserved) Deviations n/a

### 6. Equivalent Safety Findings

- Equivalent Safety Finding for Dual Pilot IFR certification concerning JAR 27 Appendix B, Para. IV (c) "Static Longitudinal Stability"
- Equivalent Safety Finding concerning JAR 27.1549(b) related to the installation of the Vehicle and Engine Multifunction Display (VEMD) in the CPDS Variants.
- Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device for the Primary Quick Release Subsystem (Cyclic Stick) for the Double Cargo Hook System

### 7. Requirements elected to comply

- Elect to Comply with CS27.25 (a) (1) and CS27.143 (c) (1), Amdt 2; the provisions of CS27.143(c)(1) are demonstrated as a function of altitude and temperature: ECD is taking advantage of this possibility which is being provided from Amdt 1 of CS27 and later.

### 8. Environmental Protection Standards

- See EASA Type Certificate Data Sheet for Noise: TCDSN.R.009

## **III. Technical Characteristics and Operational Limitations**

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | - EC135 Basic Master List Drawing No. L000M0007051<br>- Drawings of EC135 T2 (CPDS) + L000M0021051 and following modifications<br>- EC635 Kit (Drawing No. W533M1700051)                    |
| 2. Description            | Main rotor: bearingless, 4 blades<br>Tail rotor: Fenestron, 10 blades<br>Fuselage: metal-composite structure with Skid-type landing gear<br>Power plant: Two independent freewheel turbines |

Note: The variant EC635 T2+ corresponds to the EC135 T2+ plus structural reinforcement of cabin structure according to the drawing W533M1700051

3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length	5,87 m
	Width	1,56 m
	Height	3,35 m
4.2 Main Rotor	4 blades, diameter	10,2 m
4.3 Tail Rotor	10 blades, diameter	1,0 m

5. Engine

5.1 Model	Turbomeca, Arrius 2B2
5.2 Type Certificate	E.029
5.3 Limitations	

Installed Engine Limits and Transmission Torque Limits:

	Torque Limits %	Gas generator rpm min <sup>-1</sup> [%]	Power turbine rpm %	Temperature TOT °C
<b>All Engine Operation</b>				
AEO-TOP (5 min)	2 x 78	54117 [100]	104	897
AEO-MCP	2 x 69	53576 [99]	104	879
<b>One Engine Inoperative</b>				
30 seconds OEI-TOP	1 x 128	56823 [105.0]	104	1024
2 min OEI-TOP	1 x 125	56011 [103.5]	104	994
OEI-MCP	1 x 89,5	54821 [101.3]	104	942

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	see EASA approved RFM
6.2 Oil	see EASA approved RFM
6.3 Additives	see EASA approved RFM

7. Fluid capacities

7.1 Fuel:	<i>with standard fuel tank (up to S/N 249)</i>	total fuel:	680 l maximum
		useable fuel:	670.5 l
	<i>with self sealing fuel tank (up to S/N 249)</i>	total fuel:	673.4 l maximum
		useable fuel:	664 l
	<i>with modified fuel tank (from S/N 250 or S/B EC135-28-007)</i>	total fuel:	710.0 l maximum
		useable fuel:	700.5 l
	<i>with self sealing fuel tank (from S/N 250)</i>	total fuel:	701.0 l maximum
		useable fuel:	691.6 l
7.2 Oil	see EASA approved RFM		

- 7.3 Coolant system capacity n/a
8. Air Speeds Limits  $V_{NE} = 155$  knots  
(see EASA approved RFM for reduction in VNE with altitude and other speed limitations)
9. Rotor Speed Limits
- |            |                         |                      |
|------------|-------------------------|----------------------|
| Power on:  | maximum                 | 104 %                |
|            | minimum                 | 97 %                 |
| Power off: | maximum                 | 106 %                |
|            | minimum                 | 80 % (up to 1900 kg) |
|            | minimum                 | 85 % (above 1900 kg) |
| Transient: | (see EASA approved RFM) |                      |
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude 6096 m [20,000 ft] (see EASA approved RFM for variation according to MTOW)
- 10.2 Temperature (see EASA approved RFM)
11. Operating Limitations VFR Day and Night, No flight in icing condition;  
for IFR, Category A Operation see additional equipment requirements and limitations in the relevant EASA approved RFMS)  
for Ditching see Note 3
12. Maximum Masses 2910 kg /2950 kg (See note)
- Note:  
Operation of the aircraft with MTOW up to 2950 Kg is only permitted in accordance with FMS 9.1-5, FMS 9.1-6 and FMS 9.1-7 from S/N 1055 and subsequent or after SB EC135-62-028
13. Centre of Gravity Range
- |                                    |  |
|------------------------------------|--|
| Longitudinal C.G Limits,           |  |
| maximum forward limit              | 4180,0 mm aft of DP at 1840 kg<br>4227,3 mm aft of DP at 2910 kg<br>4229,3 mm aft of DP at 2950 kg |
| maximum rearward limit             | 4570,0 mm aft of DP at 1500 kg<br>4369,0 mm aft of DP at 2910 kg<br>4362,6 mm aft of DP at 2950 kg |
| Lateral C.G Limits,                |  |
| maximum deviation on right / left: | 100 mm   |
14. Datum
- |               |  |
|---------------|--|
| Longitudinal: | 2160 mm forward of the levelling point in the front door frame |
| Lateral:      | fuselage median plane  |
15. Levelling Means (see Levelling Procedure document No. L082M0801X01)
16. Minimum Flight Crew one pilot, right side
17. Maximum Passenger Seating Capacity six (or seven if the kit described in FMS 9.2-31 is installed and operated)

18. Passenger Emergency Exit two (one on each side of the passenger cabin)
19. Maximum Baggage/ Cargo Loads  
1130 kg with maximum loading 600 kg/m<sup>2</sup>
20. Rotor Blade control movement (see EC135 Aircraft Maintenance Manual)
21. Auxiliary Power Unit (APU) n/a
22. Life- limited parts (Refer to EASA approved Chapter 4 of the EC135 Master Servicing Manual)
23. Wheels and Tyres Skid type landing gear

#### **IV. Operating and Service Instructions**

1. Flight Manual EC635 T2+, firstly EASA approved on 06.12.2006, in the latest revision, including the supplements for Special Operations FMS 9.1 and for Optional Equipment FMS 9.2.
2. Maintenance Manual
  - a. EC135 Master Servicing Manual
  - b. EC135 Aircraft Maintenance Manual
  - c. Wiring Diagram Manual, latest revision
  - d. Engine documents as per EASA Engine TCDS No.E.029
3. Structural Repair Manual EC135 Structural Repair Manual
4. Weight and Balance Manual see above
5. Illustrated Parts Catalogue EC135 Illustrated Parts Catalogue
6. Service Letters and Service Bulletins  
safety information notice (from October 2008 onwards, before: Alert Service Information), information notice (from October 2008 onwards, before: Service Information), Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets
7. Required Equipment special equipment and kits necessary for intended kind of operations as defined in the LBA/EASA-approved Flight Manual Supplements FMS 9.2 are permissible.

#### **V. Notes**

1. Eligible serial numbers: 0506 and upwards
2. Night Vision Goggles Operational Capability:  
Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement 9.2-86 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.  
  
Subsequent modifications and deviations to the NVG helicopter configuration are managed in accordance with ECD document ECD-TN-ETZN-025-2009.

### 3. Ditching

The emergency floatation system in accordance with RFMS 9.2-67, is certified as ditching provision in accordance with JAR27.

The helicopter may be certificated for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:

- survival type emergency locator transmitter
- life raft installation
- life preserver

## **SECTION: ADMINISTRATIVE**

### **I. Acronyms and Abbreviations**

CDS: Cockpit Display System

CPDS: Central Panel Display System

### **II. Type Certificate Holder Record**

EUROCOPTER DEUTSCHLAND GmbH

### **III. Change Record**

<b>Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC issue</b>
Issue 01	23 May 2006	Adaptation of LBA TCDS 3061 and Implantation of the EC135 P2+/T2+ variants	Initial Issue, 23 May 2006
Issue 02	06 December 2006	Implantation of the EC635 P2+/T2+ variants	Initial Issue, 17 April 2007.
Issue 03	10 October, 2008	Equivalent Safety Finding concerning CS 27.865(c) related to dual activation device (CRI D-4) and Manufacturer for. Eurocopter ESPANA S.A., Poligono de los Llanos, Carretera de las Penas (CM3203),	Initial Issue, 17 April 2007
Issue 04	Dd month YYYY	New EASA Template and MTOW for 2950 Kg for the EC135/EC635 T2+/P2+	Initial Issue, 17 April 2007

[insert rows as needed]

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