TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.103

for

Model K-1200

Type Certificate Holder

Kaman Aerospace Corporation

P.O. Box 2, Old Windsor Road
Bloomfield, Connecticut 06002
U.S.A.

For Model: Model K-1200 (K-MAX®)

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SECTION 1: Model K-1200

I. General

1.	Type/ Model/ Variant	
	1.1 Type	Model K-1200
	1.2 Model	Model K-1200
	1.3 Variant	---
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Kaman Aerospace Corporation P.O. Box 2, Old Windsor Road Bloomfield, Connecticut 06002 U.S.A.
4.	Type Certification Application Date	to FAA: 30 July 1990 (State of Design Authority) to LBA: 6 May 1996 to ACG: 12 August 1999
5.	State of Design Authority	Federal Aviation Administration (FAA), USA
6.	Type Certificate Date	by FAA: 30 August 1994 by LBA: 15 November 1996 by ACG: 31 March 2000
7.	Type Certificate n°	by FAA: TR7BO by LBA: 3069 by ACG: DF 010 – ACG
8.	Type Certificate Data Sheet n°	by FAA: TR7BO by LBA: 3069 by ACG: DF 010 – ACG
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 748/2012, Article 3, 1., (a), 2nd bullet, 2nd indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	30 July 1990
2.	Airworthiness Requirements	

FAR Part 27 effective 1 February 1965 and Amdts. 27-1 through 27-28.
Maximum mass of 3 175 kg (7 000 lb) without external load, approved 23 June 2005:
FAR Part 27, effective 1 February 1965 and Amdts. 27-1 through 27-37, except FAR 27.561 (c), 27.865 (b)(3)(ii) and 27.1365 (c).
Compliance with instrument flight rules (IFR) operational requirements of Appendix B to FAR 27.
Personnel carrying device system (PCDS):
applicable portions of FAR 27.865, Amdt. 27-36 for human external cargo (HEC).

Avionics, Loud Hailer, Anti-Collision Lights, and Lateral and Longitudinal Trim Actuators Replacement:
CS 27 Amdt. 4: 27.1309 (a)(b)(c), 27.1316 (a)(1)(2)(b), 27.1317 (a)(1)(2)(3)(4)(b)(c)(d)(1)(2)(3), and, CS A27.4 effective at s/n A94-0039, and subsequent.
Parking Brake Replacement:
CS 27 Amdt. 4: 27.1309 (a)(c) effective at s/n A94-0039, and subsequent.

3.	Special Conditions	none
4.	Exemptions	Grant of Exemption from FAR 27.1 (a), Exemption n° 6433 (Regulatory Docket n° 009SW), dated 25 April 1996 (maximum weight 2 948 kg (6 500 lb)
5.	Deviations	none

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6.	Equivalent Safety Findings	FAR 29.173 (b)
7.	Requirements elected to comply	Compliance with the falling and blowing snow requirement of FAR 27.1093 (b)(1)(ii) has been established
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	ICAO Annex 16, Volume I, Amdt. 4. Neither Chapter 8 nor 11 are applicable because this helicopter is specifically designed and used for agricultural, fire-fighting or external load-carrying purposes. Therefore, there are no noise certification levels for this product and there is no need to issue a TCDSN.
	8.2 Emission Requirements	ICAO, Annex 16, Volume II, Amdt. 3, Part II for the prevention of intentional fuel venting
9.	Operational Suitability Data (OSD)	see SECTION 2 below

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	K-1200 Engineering Description
2.	Description	Single gas turbine engine; two 2-bladed main rotors based on the “Kaman Intermeshing System”, driven by twin shafts of a single transmission; empennage without tail rotor; fuselage of metal-composite structure with tricycle-type landing gear.
3.	Equipment	The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification. In addition, the following approved RFM is required: Kaman K-1200 Helicopter Rotorcraft Flight Manual (see Section IV number 1). Furthermore the national regulations have to be taken into account and built in before registration. Additionally all equipment is certified when: - it is mentioned in an FAA-approved Rotorcraft Flight Manual Supplement to the under section IV mentioned Rotorcraft Flight Manual, and, - the certification basis is met, and, - it is FAA-approved before, or EASA-approved, after 1 December 2006. See also the K-1200 Master Minimum Equipment List (MMEL) in Section 2 No. II.1.
4.	Dimensions	
	4.1 Fuselage	Length: 12.70 m Width hull: 3.80 m Height: 4.10 m
	4.2 Main Rotors	Diameter (each): 14.70 m
	4.3 Tail Rotor	None
5.	Engine	
	5.1 Model	Honeywell (former: Textron Lycoming, Allied Signal) 1 x Model T5317A-1

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5.2 Type Certificate

FAA TC/TCDS n°: E17EA
LBA TC/TCDS n°: 7027
EASA TC/TCDS n°: n/a

5.3 Limitations

5.3.1 Installed Engine Limits

	Engine torque pressure [hPa (psi)]	Gas generator speed limits* [rpm (%)]	Exhaust Gas Temperature (T_9) [°C]
TKOF (5 min)	4 482 (65)	26 400 (105.0)	648
MCP	4 206 (61)	25 400 (101.0)	626
		* 25 150 rpm = 100%	

5.3.2 Transmission Torque Limits (torque pressure)

	No external load [hPa (psi)]	With external load [hPa (psi)]
TKOF	2 758 (40)	3 999 (58) for 0 – 25 KIAS 3 103 (45) for >25 KIAS
MCP	2 758 (40)	3 103 (45) for 0 – 80 KIAS

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Grades JP-4, JP-5 and JP-8.
Jet A, Jet A-1 and Jet B.
See Note 1 and Note 2.

6.2 Oil

Engine: Type MIL-L-7808 or MIL-L-23699 (see Note 3)
Transmission: Dexron II or Dexron III

6.3 Additives

See Note 2

7. Fluid capacities

7.1 Fuel

Fuel tank capacity: 865 litres (228.5 US gal)
Usable fuel: 830 litres (219.5 US gal)
at 4 111 mm (161.83 in) behind datum (see Note 4).

7.2 Oil

Engine: 12.1 litres (3.21 US gal)
Transmission: 12.1 litres (3.21 US gal)

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

8.1 Air Speed Limits

$V_{NE\ PWR\ ON}$: no external load:
100 KIAS, sea level to 5 000 ft (1 524 m) DA[1];
90 KIAS, sea level to 8 000 ft (2 438 m) DA[2],
(IFR, see Note 5)
with external load:
80 KIAS, sea level to 5 000 ft (1 524 m) DA[1];
70 KIAS, sea level to 5 000 ft (1 524 m) DA[1],
(with HEC, see Note 6)
$V_{NE\ PWR\ OFF}$: 80 KIAS, sea level to 5 000 ft (1 524 m) DA[1]
Footnote [1,2]: see 'SECTION: ADMINISTRATIVE'

8.2 Ground Speed Limits

Maximum with nose wheel:
locked 25 kts
unlocked 10 kts

9. Rotor Speed Limitations

Power on:
Maximum 105% N_r (273 rpm)
100% N_r (260 rpm)
for ground extended operations
Minimum 100% N_r (260 rpm)
for MTOW ≤ 3 175 kg (7 000 lb)
104% N_r (270 rpm)
for MTOW > 3 175 kg (7 000 lb)
104% N_r (270 rpm)
for MTOW > 3 175 kg (7 000 lb)
above 10 000 ft (3 048 m) DA
Power off:
Maximum 100% N_r (260 rpm)
Minimum 75% N_r (195 rpm)

10. Maximum Operating Altitude and Temperature

10.1 Altitude

15 000 ft (4 572 m) VFR day and night
12 000 ft (3 658 m) IFR

10.2 Temperature

-32°C (-25.6°F) to +48.9°C (120°F)

11. Operating Limitations

- VFR day and night,
- IFR, applicable operating rules have to be followed,

for s/n limitations see Note 5.

- HEC (see Note 6),
- Flights under icing conditions are prohibited,
- Acrobatic manoeuvres are prohibited.

12. Maximum Mass

No external load:
3 175 kg (7 000 lb), see Note 7, 8 and 12.
With external load:
5 443 kg (12 000 lb)

13. Centre of Gravity Range

C.G. behind STA 0 [mm (in)]	Gross Mass [kg (lb)]	Lateral C.G. limit [mm (in)]
4 242 (167.0)	2 268 - 5 443 (5 000 - 12 000)	± 32 (1.25)
4 305 (169.5)	5 443 (12 000)	
4 343 (171.0)	3 175 (7 000)	
4 369 (172.0)	2 722 - 2 268 (6 000 – 5 000)	

Note: Straight-line variation between points

14. Datum

The datum line (STA 0) is located at 159 mm (6.265 in) forward of nose.

15. Levelling Means

No levelling plate.
Level at cockpit door sill per instructions in Section 08-00-00 of Kaman Model K-1200 K-MAX Maintenance and Servicing Instructions, Manual KMM.

16. Minimum Flight Crew

1 pilot, at 2 743 mm (108.0 in) behind datum

17. Maximum Passenger Seating Capacity

n/a, (single seater)

18. Passenger Emergency Exit

none, (single seater)

19. Maximum Baggage/ Cargo Loads

Baggage compartment:
226 kg (500 lb)
Cargo floor loading:

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		488 kg/m² (100 lb/ft²)
20.	Rotor Blade Control Movement	For rigging information, refer to Section 67-00-00 of Kaman Model K-1200 K-MAX Maintenance and Servicing Instructions, Manual KMM.
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	Refer to Chapter 04 “Airworthiness Limitations” of Kaman Model K-1200 K-MAX Maintenance and Servicing Instructions, Manual KMM.
23.	Wheels and Tyres	3-wheel tricycle landing gear (1 nose, 2 main)

IV. Operating and Service Instructions

1.	Flight Manual	Kaman K-1200 Helicopter Rotorcraft Flight Manual, FAA-approved 30 August 1994, or subsequent approved[3] revisions. Kaman K-1200 EASA approved Rotorcraft Flight Manual Supplement No. 2, Baseline Issue, or subsequent EASA-approved revisions. Footnote[3]: see ‘SECTION: ADMINISTRATIVE’
2.	Maintenance Manual	Kaman Model K-1200 K-MAX Maintenance and Servicing Instructions, Manual KMM.
3.	Structural Repair Manual	none
4.	Weight and Balance Manual	Section 07 of Kaman K-1200 Helicopter Rotorcraft Flight Manual, FAA-approved 30 August 1994, or subsequent approved[3] revisions. Footnote[3]: see ‘SECTION: ADMINISTRATIVE’
5.	Illustrated Parts Catalogue	Kaman Model K-1200 K-MAX Parts Catalogue
6.	Miscellaneous Manuals	K-MAX Wiring Diagram Manual, Rev. 1, dated 1 December 2011.
7.	Service Letters and Service Bulletins	As published by K-1200 K-Max Publication List
8.	Required Equipment	Section 07 of Kaman K-1200 Helicopter Rotorcraft Flight Manual lists removable items. All other equipment is required. FAA-approved 30 August 1994 or subsequent approved[3] revisions. Footnote[3]: see ‘SECTION: ADMINISTRATIVE’

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V. Notes

1. See Section 10 of the approved[3] Rotorcraft Flight Manual for the complete listing of approved Jet A, Jet A-1, Jet B, MIL-T-5624 and all equivalent fuels. Equivalent fuel:
   - MIL-T-83133, Grade JP-8, may also be used.
   - Use of kerosene fuels (JP-4 or JP-5) should be avoided when starting at ambient temperatures below -12°C (10°F).
   - Commercial fuels made to conform to ASTM Specification D 1655 do not contain anti-icing additives unless specified by bulk purchaser. Care must be taken with these fuels with respect to water contamination and flight conditions.

   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

2. Anti-icing, anti-corrosion and biocidal additives specified in Section 10 of the approved[3] Rotorcraft Flight Manual may be used singly or in any combination. The specified additives should not be added to fuel MIL-T-5624, Grades JP-4 and JP-5, or to fuel MIL-T-83133, Grade JP-8, since they are already present in these fuels.
   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

3. Approved engine oil brands are listed in Section 10 of the approved[3] Rotorcraft Flight Manual.
   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

4. Current weight-and-balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each type helicopter at the time of original certification.
   See approved[3] Rotorcraft Flight Manual loading section for fuel weight and moment-arm variations with fuel type and fuel quantity.
   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

5. Operation under the instrument flight rules (IFR) of Appendix B of FAR 27 approved 14 May 1999 for Serial Numbers A94-0002 through A94-0038 only.
   See approved[3] Rotorcraft Flight Manual for limitations, operational requirements, required equipment, and weight-and-balance considerations.
   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

6. A personnel carrying device system (PCDS) for carrying human external cargo (HEC) was approved 13 February 1998. The PCDS is limited to carriage of personnel that is a flight crewmember or a flight crewmember trainee or that performs an essential function in connection with the external-load operation or that is necessary to accomplish the work activity directly associated with that operation.
   See approved[3] Rotorcraft Flight Manual for limitations, operational requirement, and weight-and-balance considerations.
   Footnote[3]: see 'SECTION: ADMINISTRATIVE'

7. The helicopter is certificated for special operations of (approved 9 June 1995):
   - Agriculture as defined in the following paragraph:
     'Agricultural aircraft operation' means the operation of an aircraft for the purpose of (1) dispensing any economic poison, (2) dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control, or (3) engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.
   - Dispensing of firefighting materials; and
   - Carrying external loads as defined in the national applicable rules.

   The special purpose operations may be conducted at maximum weights above 2 722 kg (6 000 lb) up to and including 2 948 kg (6 500 lb).

8. Grant of Exemption n° 6433, dated 25 April 1996, allows increase in maximum gross weight from 2 722 kg (6 000 lb) to 2 948 kg (6 500 lb) while maintaining the original rotorcraft certification. The exemption is subject to the following conditions and limitations:
   - The design of the helicopter cannot be changed to add passengers as part of the gross weight increase.
   - Prior to exercising the privileges of the exemptions, each K-1200 helicopter (for which exemption is sought) and all modifications made to it, must meet the requirements established in the current

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V. Notes

certification basis, at the increased gross weight. This includes any special requirements for certification: i.e. equivalent levels of safety and special conditions that may have been issued to complete certification.

- All operations above 2 722 kg (6 000 lb) must be limited to agricultural operations as defined in Note 7; dispensing firefighting materials; or carrying external loads as defined in national applicable rules; unless a noise test is conducted prior to increasing the gross weight above 2 722 kg (6 000 lb).

9. The conduction of the engine air for the cab heating has to be modified according to Kaman K-1200 K-MAX Service Bulletin No. 044.

10. All placards required in the approved[3] Rotorcraft Flight Manual must be installed in the appropriate locations. The following placard must be displayed in front of and clear view of the pilot:
"THIS AIRCRAFT MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE APPROVED[3] FLIGHT MANUAL."
Footnote[3]: see 'SECTION: ADMINISTRATIVE'

11. Information essential to the proper maintenance of the helicopter is contained in the Kaman Model K-1200 K-MAX Maintenance and Servicing Instructions, Manual KMM, provided with each helicopter. The values of retirement (service) life contained in Chapter 04 or inspection intervals cannot be increased without official approval[3].
Footnote[3]: see 'SECTION: ADMINISTRATIVE'

12. Original certification basis limited maximum weight to 2 722 kg (6 000 lb) or less.
Special purpose operation (see Note 7) permitted operation to 2 948 kg (6 500 lb) pending Grant of Exemption n° 6433 (see Note 8).
FAR, Part 27, Amdt. 37, changed the maximum weight to 3 175 kg (7 000 lb) or less. Maximum weight of 3 175 kg (7 000 lb) without external load approved 23 June 2005 by FAA.

13. Designation:
Kaman K-MAX® is used as marketing designation for Kaman K-1200 helicopters.

14. Manufacturer's eligible serial numbers: s/n A94-0002, A94-0004, and subsequent

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SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements

17 February 2014 (entry into force of CR (EU) no 69/2014)
6 April 2016 (application date at EASA)

I.2 MMEL - Certification Basis

Special Condition SC-CS-GEN-MMEL-Non-Complex-Helicopters, published November 2015

I.3 Flight Crew Data - Certification Basis

CS-FCD, Initial Issue, dated 31 January 2014

I.4 SIM Data - Certification Basis

n/a

I.5 Maintenance Certifying Staff Data - Certification Basis

n/a

II. OSD Elements

II.1 MMEL

Kaman Aerospace Corporation, K-1200 Helicopter, Master Minimum Equipment List, Report No. R-5181, Original Issue dated 28 August 2017

II.2 Flight Crew Data

K-1200 KMAX Helicopter, EASA OSD, Flight Crew Data (FCD), Type Rating Training, Revision 4, dated 6 October 2017

II.3 SIM Data

n/a

II.4 Maintenance Certifying Staff Data

n/a

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SECTION: ADMINISTRATIVE

I. Footnotes

* 'Primary Certification Authority' certification application date for grandfathered products.

[1] Decrease 3 kts (5.6 km/h) per 1 000 ft (305 m) above 5 000 ft (1 524 m) DA.

[2] Decrease 3 kts (5.6 km/h) per 1 000 ft (305 m) above 8 000 ft (2 438 m) DA.

[3] Approving Authority for the Rotorcraft Flight Manual, Rotorcraft Flight Manual Supplements and Chapter 04 "Airworthiness Limitations" of the Maintenance Manual is:
- before 28 September 2003, the FAA,
- from 28 September 2003 to 1 December 2006, the FAA and the EASA, and;
- after 1 December 2006 the EASA.
The Competent Authorities of the EU Member States (e.g. LBA, ACG) are also approving Authority for these documents before 28 September 2003.

II. Acronyms and Abbreviations

ACG	Austro Control, AT	Max	Maximum
Amdt.	Amendment	MCP	Maximum Continuous Power
ASTM	American Society for Testing and Materials	min	Minute
C.G.	Centre of Gravity	MMEL	Master Minimum Equipment List
CR	(European) Commission Regulation	MM	Maintenance Manual
DA	Density Altitude	OSD	Operational Suitability Data
DP	Datum Point	PA	Pressure Altitude
EU	European Union	PWR	Power
FAA	Federal Aviation Administration	s/n	Serial Number
HEC	Human External Cargo	sec	Seconds
IFR	Instrument Flight Rules	STA	Station
IPC	Illustrated Parts Catalogue	TKOF	Take-Off
KIAS	Knots Indicated Air Speed	VFR	Visual Flight Rules
LBA	Luftfahrt-Bundesamt (German Federal Aviation Office)	V_{NE} $V_{NE\ PWR\ ON}$ $V_{NE\ PWR\ OFF}$	Never Exceed Speed
LDG	Landing		

III. Type Certificate Holder Record

II.1 Type Certificate Holder	**Period**
Kaman Aerospace Corporation P.O. Box 2 Bloomfield, Connecticut 06002 U.S.A.	Since 30 August 1994

IV. Change Record

Issue	**Date**	**Changes**	**TC issue**
Issue 1	18 Dec 2014	Transfer of grandfathered FAA TCDS TR7BO into EASA format	Initial EASA Issue 18 Dec 2014
Issue 2	1 Sep 2017	Type Certification basis extended; minor corrections	- - -
Issue 3	23 Oct 2017	Addition of OSD Elements MMEL and FCD	- - -

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