

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

R00002RD
REVISION 12
AGUSTA
AB139
AW139
November 25, 2013

TYPE CERTIFICATE DATA SHEET NO. R00002RD

This data sheet which is a part of Type Certificate No.R00002RD prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder

AGUSTA S.p.A.
Via Giovanni Agusta, 520
21017 – Cascina Costa di Samarate Varese ITALY
(See NOTE 9 for changes to the Agusta name)

I. Model AB139 (S/N 31001 through S/N 31054) and Model AW139 (S/N 31055 onwards). See NOTE 9.

(Transport Helicopter: Category A, Approved April 10, 2006; Category B, Approved December 20, 2004.)

Engine. Two (2) Pratt and Whitney Canada Inc. PW PT6C-67C, Type Certificate No. E00068EN
Free turbine turboshaft engines with FADEC.

Fuel. For all temperatures:
Jet A-1, JP5, JP8, JP8+100, GOST 10227, GOST 10227 RT

Oil. For all temperatures:
MIL-PRF-83282 Hydraulic Oil
Alternative for low temperatures MIL-PRF-5606

MIL-PRF-23699F Transmission Oil
For engine oils see Engine Maintenance Manual

For detailed information see Section I
of the approved Rotorcraft Flight Manual

Page No.	1	2	3	4	5	6	7	8
Rev. No.	12	1	8	9	12	9	12	12

Installed Engine Limits.

	Max torque	Max ITT	Max gen Speed	Max Output Shaft speed
	% (Lbft)	°C	rpm	rpm
OEI 2 ½ min	160% (400)	835	40500	21000 (21420)*
OEI Continuous	140% (350)	775	39100	21000 (21420)*
Take Off 5 min	110% (275)	775	39100	21000 (21420)*
Maximum continuous	100% (250)	735	38200	21000 (21420)*

(*) For Category-A take off / landings below 90 KIAS and for external load operations.

Transmission limits.

	Power (hp) @ 100% NR
MCP Max Continuous OEI	1400
2 ½ min OEI	1600
MCP Max Continuous AEO	1000 (x 2)
TOP Take-Off AEO	1100 (x 2)

Rotor Limits. Power OFF: 90% < Nr < 116%
Power ON: 95% < Nr < 106%

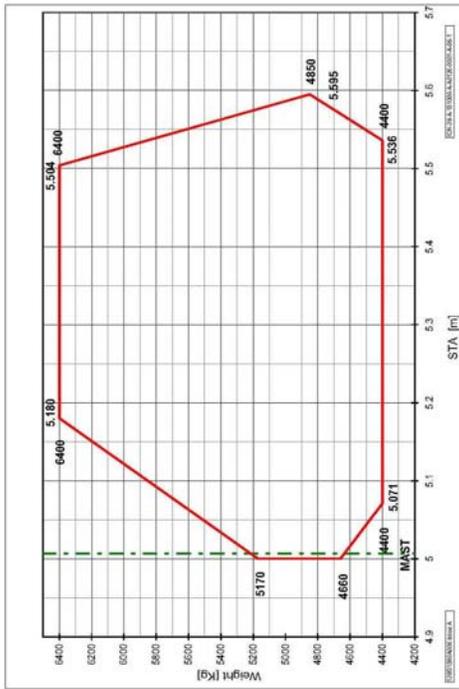
Air Speed Limits.

V_{NE} Power On = 167 KIAS. See approved Rotorcraft Flight Manual for variations with density altitude.

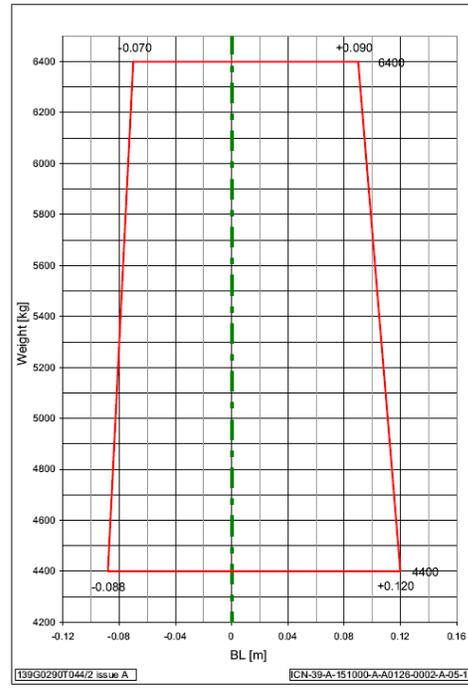
V_{LE}/V_{LO} (gear extended/gear operating) = 150 KIAS/150 KIAS

OEI/Power Off = 147 KIAS. See approved Rotorcraft Flight Manual for variations with density altitude.

Center of Gravity (C. G.) Range:



Weight And Longitudinal Cg Envelope



Weight And Lateral Cg Envelope

Empty weight Center of Gravity Range.

None

Ambient Temperature Limitations.



<u>Datum.</u>	Longitudinal station 0 (datum) is 3160 mm forward of the front jack point. Lateral station 0 (datum) is ± 905 mm inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.
<u>Levelling Means.</u>	Plumb line from ceiling reference point to index plate on floor of passenger cabin located at STA=5055 mm and BL=750 mm (LHS).
<u>Maximum weights.</u>	6400 kg (see NOTE 11)
- (Taxi and ramp)	6450 kg (see NOTE 11)
- (Take-off)	6400 kg (see NOTE 11)
- (Landing)	6400 kg (see NOTE 11)
<u>Minimum Crew.</u>	One (1) for VFR; Two (2) for IFR. (See also " <u>Equipment</u> " and NOTE 5.)
	For NVG operations, two (2) pilots or one (1) pilot and one (1) crewmember are required. Both pilots (or pilot and crew member) must be equipped with appropriate Night Vision Goggles. (see NOTE 12)
<u>Number of Seats.</u>	17 (2 crew – 15 passengers maximum)
<u>Maximum Baggage.</u>	200 kg (440 lb)
	Baggage compartment max pressure load 300 kg/m ² (61 lb/sq. ft)
	Baggage compartment max tied-up load 200 kg (440 lb) (See NOTE 10)
<u>Fuel Capacity.</u>	Total: 1588 liters Unusable for tank: 10 liters
<u>Engine Oil Capacity (single).</u>	8.45 U.S. Quarts (8.0 liters)
<u>Maximum Altitude for take off and landing.</u>	14,000 ft pressure altitude or density altitude, whichever is lower
<u>Maximum Operating Altitude.</u>	20,000 ft pressure altitude or density altitude, whichever is lower 10,000 ft pressure altitude in icing conditions (see NOTE 13)
<u>Rotor Blades and Control Movements.</u>	For rigging information, refer to the AB139/AW139 Maintenance Manual.
<u>Import Requirements.</u>	To be considered eligible for operation in the United States, each aircraft manufactured under this Type Certificate must be accompanied by a Certificate of Airworthiness for Export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states the following (in the English language): "The rotorcraft covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. R00002RD and to be in condition for safe operation." The only aircraft eligible for import into the United States are those aircraft with the 4-displays configuration defined in Agusta Report No. 139G0000P005/02, "AB139 Type Design Definition – 4 Display Configuration," and Report No. 139G0000P005/03, "AW139 Type Design Definition – Long Nose Configuration." Agusta reports 139G0000P005/02 and 139G0000P005/03 are volumes 2 and 3 of the basic Agusta report 139G0000P005, "AB139- Type Design Definition," Rev. H, dated June 7, 2007. (See NOTE 5).

Aircraft with a Laser Arm Interlock Panel installed are not eligible for import. (See Note 14).

Certification Basis:

- (1) 14 CFR 21.29 and Part 29, Amendments 29-1 through 29-45.
- (2) Appendix B to Part 29, Amendment 29-40.
- (3) 14 CFR 36, Appendix H, Amendment 36-1 through Amendment 36-25.
- (4) Special Condition is made in accordance with 14 CFR 21.16 as follows:
Special Condition No. 29-0010-SC, High Intensity Radiated Fields (HIRF), dated Feb. 19, 2004.
- (5) Equivalent Level of Safety Findings issued against:
 - (a) 14 CFR 29.1305, as documented in AB139 FAA Memo dated Dec. 20, 2004.
 - (b) 14 CFR 29.1321, as documented in AB139 FAA Memo dated Dec. 20, 2004.
- (6) Special Condition No. 29-027-SC for Search and Rescue Automatic Flight Control System (See Note 16)

The Italian Civil Aviation Authority, ENAC, originally type-certificated this rotorcraft under its Type Certificate Number A415. The FAA validated this product under U.S. Type Certificate Number R00002RD. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this rotorcraft on behalf of ENAC, under EASA Type Certificate Number R.006.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the helicopter for certification.

See Agusta Report No. 139G0840W002 - Equipment List or No. 139G0840W005 - Equipment List (Long Nose Configuration).

The installation of the following is mandatory for Category-A operations:

- Service Bulletin P&WC S.B. 41020; and
- Honeywell Primus EPIC software P/N MM7030191-004 or later approved software.

The installation of the following is mandatory for Single Pilot VFR operations:

- Traffic Advisory System (TCAS), RFM Supplement 25
- Quick Reference Handbook (QRH), Agusta Publication Code 502500032, latest issue; and
- Map / QRH Holder, P/N 4G2510F00111, P/N 4G2510F00113, or equivalent.

The installation of the following is mandatory for Night Vision Goggle Operations:

- NVIS compatible lighting systems P/N 4G3360F00111; and
- Honeywell Primus EPIC software version 4.8 or later approved software.

The installation of the following is mandatory for operating in icing conditions:

- Full Ice Protection System kit (P/N 4G3000F00211)

Refer to approved Rotorcraft Flight Manual for other approved mandatory and optional equipment.

Service information.

Agusta Service bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, and overhaul and maintenance manuals, which contain a statement that the document is (ENAC/EASA) approved, are accepted by the FAA and are considered FAA approved. These approvals pertain to the approved type design only.

Flight Manual.

ENAC/EASA approved Rotorcraft Flight Manual (4-Display Configuration), 139G0290X002, dated November 25, 2004, or later approved revision (See NOTE 5).

Maintenance Manual.

Maintenance Planning Information 39-A-AMPI-00-P
Maintenance Publication 39-A-AMP-00-P.

NOTES:

NOTE 1 Current weight and balance report including loading instructions and list of equipment included in the certificated empty weight, must be provided for each helicopter at the time of original airworthiness certification.

NOTE 2 All placards indicated in the approved Rotorcraft Flight Manual must be installed in the appropriate location.

NOTE 3 Information essential to the proper maintenance of the helicopter is contained in the Manufacturer's Maintenance Manual provided with each helicopter. Life limited components and associated retirement times are presented in Chapter 4 and must be replaced in accordance therewith.

NOTE 4 The model AB139/AW139 rotorcraft employs electronic engine controls, commonly named Full authority Digital Engine Controls (FADEC), that are recognized to be more susceptible to Electromagnetic Interference (EMI) than rotorcraft that have non-electronic controls. (EMI may be the result of radiated or conducted interference.) For this reason modifications that add or change systems that have the potential for EMI, must either be qualified to a standard acceptable to the FAA or tested at the time of installation for interference with the FADEC. This type of testing must employ the particular FADEC diagnostic techniques and external diagnostic techniques. The test procedure must be FAA approved.

NOTE 5 The FAA Rotorcraft Flight Manual (RFM) is identical to the ENAC/EASA approved RFM with exceptions for Minimum Flight Crew limitations and identification of Noise Characteristics. Unique FAA approved pages are marked as "FAA Approved" and must be included in the FAA manual to reflect the differences noted below:

1. Section 1, LIMITATIONS, MINIMUM FLIGHT CREW:
Requires two pilots for VFR and two pilots for IFR. For Single Pilot VFR operations, refer to RFM Supplement 32.
2. Section 4, Performance Data, NOISE CHARACTERISTICS:

Model: AB139 Engine Pratt and Whitney PT6C-67C Gross Weight 6400 kg					
Configuration	Level Flyover EPNL (EPNdB)	Take Off EPNL (EPNdB)		Approach EPNL (EPNdB)	
		100 % NR	102 % NR	100 % NR	102 % NR
Clean aircraft No external kits Installed	89.5	90.4	90.9	92.7	93.2

NOTE 6 The Agusta Model AB139/AW139 incorporates an integrated avionics system using software-based line replaceable units (LRU) which share a digital signal transmission bus. The software configuration of the AB139/AW139, as delivered from production, is critical to the proper operation of the avionics and cockpit instrumentation system. Modification to the LRU software supplied with the AB139/AW139, replacement of an LRU with a different LRU, addition of new LRU, or alteration of an LRU interface could adversely affect the airworthiness of the certified software. No changes to the integrated avionics system should be made without coordination with the FAA Aircraft Certification Office (ACO) having jurisdiction over the modifier.

- NOTE 7 The hydraulic fluids must conform to MIL-PRF-83282 or MIL-PRF-5606 which is an alternate for low Temperature operation - see LIMITATIONS Section of the approved Rotorcraft Flight Manual. The Landing Gear Shock Absorber must be filled only with MIL-PRF-5606.
- NOTE 8 Any changes to the type design of this helicopter by means of a amended type certificate (TC), supplemental type certificate (STC), or amended STC, requiring instructions for continued airworthiness (ICA's) must be submitted thru the project aircraft certification office (ACO) for review and acceptance by the Fort Worth -Aircraft Evaluation Group (FTW-AEG) Flight Standards District Office (FSDO) prior to the aircraft delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later as prescribed by Title 14 CFR 21.50. Type design changes by means of a field approval that require ICA's must have those ICA's reviewed by the field approving FSDO.
- NOTE 9 The AB139 and AW139 are two names of the same product. They identify two production batches manufactured in conformity with the same Type Design. Applicable serial numbers:
- S/N 31001 to 31054: AB139 designation, manufactured by Agusta S.p.A. in Italy.
 - S/N 31055 to 31200: AW139 designation, manufactured by Agusta S.p.A. in Italy.
 - S/N 31201 to 31999: AW139 Long Nose Configuration, manufactured by Agusta S.p.A. in Italy.
 - S/N 41001 to 41200: AW139 designation, manufactured by Agusta S.p.A. in Philadelphia.
 - S/N 41201 to 41999: AW139 Long Nose Configuration, manufactured by Agusta Aerospace Corporation (AAC) in Philadelphia under Production Certificate PC 120NE (effective 12 December 2008)
- Effective 01 June 2011, the Agusta S.p.A. name was changed to AgustaWestland S.p.A., and the Agusta Aerospace Corporation name was changed to AgustaWestland Philadelphia Corporation.
- Effective 02 December 2011, PC120NE was changed to reflect the Agusta Aerospace Corporation name change to AgustaWestland Philadelphia Corporation.
- Where not specifically declared, the content of this TCDS is applicable to both the AB139 and AW139.
- NOTE 10 The installation of the restraint net anchoring system (P/N 3G2550F00113) and the restraint net (P/N 3G2550F00311) permits the maximum load carried in the baggage compartment to be increased to 300 Kg. For detailed information, refer to Supplement 31 of the Rotorcraft Flight Manual.
- NOTE 11 Operation of the aircraft with a maximum gross weight up to 6800 kg is permitted provided kit (P/N 4G0000F0011) is installed, and the limitations and procedures within RFM 139G0290X002 Supplement 50 are adhered to.
- NOTE 12 Night Vision Goggle operations may be granted by the local civil aviation authority if the rotorcraft is operated according to the limitations and procedures within RFM 139G0290X002 Supplement 60. The rotorcraft configuration involving internal and external light emitting and reflecting equipment approved for use with NVGs is described in Report 139G3360A001 "AW139 NVG Compatibility Reference Handbook". Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with Agusta document 139G3360E001 "AW139 Helicopter NVG Policy".
- NOTE 13 Operation in known ice conditions is permitted according to RFM 139G0290X002 Supplement 71 if Ice Protection System kit (P/N 4G3000F00211) is installed. The aircraft configuration approved for use in icing conditions is described in Report 139G3000A001 "AW139 Icing compatibility Reference Handbook".
- NOTE 14 Class IIIa, IIIb or higher laser devices are not FAA approved. Therefore, the laser arm interlock panel installation is not approved for the following kits.
- SX-16 Nightsun Searchlight (reference supplement 29 of the Rotorcraft Flight Manual)
 - Sea FLIR II (reference supplement 36 of the Rotorcraft Flight Manual)
 - Star Safire Series FLIR (reference supplement 43 of the Rotorcraft Flight Manual)
 - FLIR Wescam MX 15 Series (reference supplement 52 of the Rotorcraft Flight Manual)
 - Talon FLIR (reference supplement 64 of the Rotorcraft Flight Manual)
- NOTE 15 The FAA approved installation of a Traffic Alert and Collision Avoidance System (TCAS II) only applies to the 3G3406P03611 TCAS II Climb RA Inhibit variant.

NOTE 16 The FAA has not certified the Search and Rescue (SAR) Automatic Flight Control System for Epic Phase 7 (listed as EB 7030191-00110 on the SYS CONFIG page of the MFD). Therefore, SAR modes must be disabled for helicopters equipped with Epic Phase 7. Reference the FAA Only page (“yellow page”) for Supplement 69.

The EPIC software version is verified via the MFD – set SYSTEM page, select SYS CONFIG and verify Top Level System Part Number. Reference the COCKPIT/ENGINE PRE-START CHECKS within the Normal Procedures section of the rotorcraft flight manual.

....END....