



TYPE-CERTIFICATE DATA SHEET

NO. EASA.IM.A.679

For

Y12F

Type Certificate Holder

Harbin Hafei Aviation industry Co., Ltd.

Northeast side of Jiangnanzhonghuan Road,
Nancheng second road of Hanan Industrial Park,

Post Code: 150060

Harbin, Heilongjiang

People's Republic of China

For models: Y12F





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SECTION A: MODEL A DESIGNATION

A.I. General

1. Type/ Model/ Variant

1.1 Type	Y12F
1.2 Model	Y12F
2. Airworthiness Category	CS-23, Commuter Category
3. Manufacturer	Harbin Hafei Aviation industry Co., Ltd.
4. EASA Type Certification Application Date	07 December 2016
5. State of Design Authority	CAAC, China
6. State of Design Authority Type Certificate Date	10 December 2015
7. EASA Type Certification Date	13 July 2023

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements 11 December 2012

2. Airworthiness Requirements CS-23 Amendment 3, 13 July 2012.
CS 23.1306 at Amendment 4, dated 15.07.2015
CS 23.1308 at Amendment 4, dated 15.07.2015
CS-ACNS, . **Note 1**
CS-MMEL, dated 31 January 2014
CS-FCD, dated 31 January 2014

3. Special Conditions None.

4. Exemptions None.

5. Deviations None.

6. Equivalent Safety Findings

IMA circuit protection

Storage Battery Design and Installation



ASI flap marking

Marking of Aircraft Powerplant Instruments (Displays)

Landing gear handle Design and Installation

Probes OFF Caution

7. Environmental Protection

CS-34 Amendment 2, 12 January 2016.

CS-36 Amendment 4, 12 January 2016.



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A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition YF000002H000001 Rev.A and later approved revisions , Design configurations of Y12F are as follows:

No.	File name	Document number	Remarks
1	Y12F Basic Type Configuration	YF000002H000001	Basic configuration
2	Maritime Surveillance System	YF008002H000051	Optional configuration
3	Air Condition System	YF210002H101051	Optional configuration
4	Heating System	YF214002H001051	Optional configuration
5	Cabin Seat	YF252212H000051	Optional configuration
6	Cabin Luxury Interior	YF252312H000051	Optional configuration
7	Cabin General Interior	YF252332H000051	Optional configuration
8	Pressure Refueling System	YF282602H100051	Optional configuration
9	Anti-Skid Braking System	YF325802H000051	Optional configuration
10	Distance Measuring Equipment	YF345602H001051	Optional configuration
11	Protobale Oxygen Supply System	YF350002H002051	Optional configuration (POST TC approval by EASA required)
12	Centralized Oxygen Supply System	YF350002H101051	Optional configuration (POST TC Approval by EASA required)
13	Trim Runaway design Change	YF2204030P	Basic Configuration
14	CAS messages	YF2307002P	Basic Configuration
15	Electrical Hydraulic Pump design Change	YF2204031P	Basic Configuration

Trim Runaway Design Change Ref YF2204030P , CAS messages Design Change Ref YF2307002P , Electrical Hydraulic Pump design Change Ref YF2204031P shall be installed before any individual aircraft entry into service in an EASA Member State.

2. Description High wing, twin turboprop, commuter category aircraft of all metal construction, unpressurised with retractable tricycle undercarriage. Upto 19 Passengers.

3. Dimensions

Wing span	19.888 m /783.0 in
Height	6.035 m /237.6 in
Length	16.470 m /648.4 in
Max. height, fuselage	2.200 m /86.6 in
Max. width, fuselage	2.100 m /82.7 in
Horizontal tail span	7.300 m /287.4 in



Wheel track	3.200 m /126.0 in
Wheel base	5.750 m /226.4 in
5. Engine	
5.1. Model	2 Pratt & Whitney Canada PT6A-65B.
5.2 Type Certificate	EASA Engine Type Certificate: EASA.IM.E.078
5.3 Limitations	Refer to Approved Aircraft Flight Manual and to latest revision of TCDS IM.E.078 Pratt & Whitney Canada PT6A-41 Series Engines.
6. Propeller	
7.1 Model	2 Hartzell Propeller HC-B5MP-3D/M10876ANSK
7.2 Type Certificate	EASA.IM.P.129
7.3 Number of blades	five bladed aluminum constant speed, full feathering reversible propeller with electric deice boots
7.4 Diameter	Diameter: 2.824m(111.2 inches) Minimum Allowable For Repair 2.812m (110.7 inches)
7.5 Sense of Rotation	Right as viewed in flight direction.
7.6 Limitations	As defined in Approved Aircraft Flight Manual.
8. Fluids	
8.1 Fuel	Commercial grades: International Jet A, Jet A-1 and Jet B, Chinese No.3 Jet fuel Military grades: International JP-4,JP-5,JP-8 Emergency commercial aviation gasoline: Specification All usable aviation gasoline (NOTE 2) other approved fuel see Aircraft Flight Manual and P&WC S.B. NO.13044
8.2 Oil	Per P&WC SB 13001: Mobil Jet Oil Type II and Mobile Jet Oil 254
8.3 Coolant	N/A
9. Fluid capacities	
9.1 Fuel	Left tank 1,252kg (1584.5 litre,418.6 gal)



- Right tank 1,252kg (1584.5 litre,418.6 gal)
 Each tank unusable fuel 25kg (31.5 litre, 8.3 gal).
 (Fuel Density:0.79kg/litre)
- 9.2 Oil 11.7 litre (12.3 US quart) each engine
 Each engine unusable oil 4.08 litre (4.3 US quart)
10. Air Speeds
 V_O (Operation Maneuvering Speed) 144 knots(267 km/h)(CAS)
 V_{FE} (Flap Extended Speed) 130 knots (241 km/h)(CAS)
 V_{LO} (Maximum Speed For Landing Gear Operation) 137 knots (254 km/h)(CAS)
 V_{LE} (Maximum Speed For Landing Gear Extension) 137 knots (254 km/h)(CAS)
 V_{MCA} (Minimum Control Speed In the Air) 87 knots (161 km/h)(CAS)
 V_{MO} (Maximum Operating Speed) 209 knots (387 km/h)(CAS)
11. Flight Envelope 3,048 m (10,000 ft)
12. Approved Operations Capability
 VFR, IFR, Day, Night,
13. Maximum Masses
 Max Ramp Weight 8,450 kg (18,630 lb)
 Max Take-off Weight 8,400 kg (18,520 lb)
 Max Landing Weight 8,000 kg (17,640 lb)
14. Centre of Gravity Range
 7.800m(307.09 in) to 8.007m (315.24 in)(25.00%~35.00%MAC)at8,400 kg(18,520 lb)
 7.766m(305.76 in)to 8.007m (315.24 in)(23.36%~35.00%MAC)at8,000kg(17,640 lb);
 7.613m(299.72 in) to 8.007m (315.24 in)(16.00%~35.00%MAC)at6,200kg (13,668 lb);
 7.593m(298.94 in) to 8.007m (315.24 in)(15.00%~35.00%MAC) below5,700kg (12,566 lb).
 Straight line variation between points given.
15. Datum Located at 1.0m(39.37 inches)in front of the airplane nose in X axis
 Located at the symmetric center line of airplane in the Y axis.
 Located at horizontal plane, 0.75m(29.53 inches) above cabin floor in the Z axis.
16. Control surface deflections



FlapsPositions:	0°(±0.5°), 10°(±0.5°), 20°(±0.5°)
Elevator	Up 24°(+2°,0°) Down 15°(+1°,-0.5°)
Elevator Trim Tab	Up 16°(+1°,0°) Down 11.5°(+2°,0°)
Rudder	Left 20 °(0,-0.5°) Right 20 °(0,-0.5°)
Rudder Trim Tab	Left 12 °(±1°) Right 12°(±1°)
Aileron	Up 30°(±1°) Down 20°(±1°)
Aileron Trim Tab	Up 20°(±1°) Down 20°(±1°)
17. Levelling Means	See Leveling Diagram:YF082101H003151
18. Minimum Flight Crew	2
19. Maximum Passenger Seating Capacity	19
20. Baggage/Cargo Compartments	
	Front baggage compartment 50 kg (110 lb)
	Rear baggage compartment 250 kg (550 lb)
21. Wheels and Tyres	Nose,twin LW-141 wheels and 505T08-1 tyres. Main, single wheel LS-170 with 982T26G1 tyre
22. Serial Numbers	Note 3



A.IV. Operating and Service Instructions

- | | |
|--------------------------------|--|
| 1. Flight Manual | Y12F Aircraft Flight Manual Y12FTP-AFM |
| 2. Maintenance | Y12F Aircraft Maintenance Manual Y12FTP-AMM
Y12F Aircraft Airworthiness Limitations Y12FTP-ALS
Y12F Aircraft Scheduled Maintenance Requirements Y12FTP-SMR |
| 3. Structural Repair Manual | Y12F Aircraft Structural Repair Manual Y12FTP-SRM |
| 4. Weight and Balance Manual | Y12F Aircraft Weight and Balance Manual Y12F-WBM |
| 5. Illustrated Parts Catalogue | Y12F Aircraft Illustrated Parts Catalogue Y12FTP-AIPC |

A.V. Operational Suitability Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.637 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014. Operational Suitability Data must be available before entry into Service (EIS) in an EU Member State.

1 Master Minimum Equipment List

Required to be approved before EIS.

2 Flight Crew Data

Required to be approved before EIS.

3 Cabin Crew Data

Not applicable;

4 SIM Data

Not applicable;

5 Maintenance Certifying Staff Data

Required to be approved before EIS;

A.VI. Notes



- Note 1 Taking also into consideration the paragraph 21.A.101(b) regarding operations airworthiness standards that are not required for the issuance of a TC , compliance with CS-ACNS will need to be shown, before an individual aircraft enters into service in an EASA member state.
- Application of the appropriate sections of the CS-ACNS is intended to maintain a high level of safety of on-board Communication, Navigation and Surveillance systems, and ensure compliance with the European Commission regulations, with particular regard to the implementing regulations laying down the requirements for operating the aircraft in the Single European Sky. The applicable issue of CS-ACNS will be the one in force when the applicant will apply to EASA for showing compliance with them, in accordance with the statement of the previous paragraph.
- Note 2 Emergency AVGAS Limitations:
- a) Operation is limited to 150 hours between engine overhauls;
- b) The fuel system must be flushed after using 80 aviation gasoline;
- c) Before the flight, make sure that all the fuel booster pumps are operative.
- Note 3 Due to the applicant electing not to comply with CS-OSD and CS-ACNS , serial numbers will be listed once compliance with the previous requirements is shown. Individual S/N shall also demonstrate compliance with the Type Design definition before being listed in this TCDS.
- Note 4 Reserved



ADMINISTRATIVE SECTION

I. Acronyms

AFM – Aircraft Flight Manual
AMM – Aircraft Maintenance Manual
ASTM – American Society for Testing and Materials
CAAC – Civil Aviation Administration of China
CRI – Certification Review Item
CS – Certification Specification
EASA – European Union Aviation Safety Agency
In.- Inches
ICAO – International Civil Aviation Organization
IFR – Instrument Flight Rules
IPC – Illustrated Part Catalogue
KCAS – Knots Calibrated Air Speed
Kg - Kilograms
KOEL – Kind of Operations Equipment List
m - Metres
MAC – Mean Aerodynamic Chord
MLW – Maximum Landing Weight
MTOW – Maximum Take-Off Weight
MZFW – Maximum Zero Fuel Weight
TC – Type Certificate
TCDS – Type Certificate Data Sheet
VFR – Visual Flight Rules

II. Type Certificate Holder Record

TC Holder	Period
Harbin Hafei Aviation industry Co., Ltd. Northeast side of Jiangnanzhonghuan Road,	Effective



Nancheng second road of Hanan Industrial Park, Post Code: 150060 Harbin, Heilongjiang People's Republic of China.	

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
01	13 July 2023	Initial Issue	Is.01, 13 July 2023

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