



TYPE-CERTIFICATE DATA SHEET

No. EASA.A.607

for
BS 115

Type Certificate Holder
BLACKSHAPE S.P.A.

Strada Statale 16 KM 841+900
70043 Monopoli (BA)
ITALY

For models: BS 115
BK 160



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SECTION A: BS 115

A.I. General

1. Type/ Model /Variant	
1.1 Type	BS 115
1.2 Model	BS 115
1.3 Variant	--
2. Airworthiness Category	Normal
3. Manufacturer	Blackshape SPA SS 16 KM 841+900 Z.I. 70043 Monopoli (BA) Italy
4. EASA Type Certification Application Date	14 March 2013
5. State of Design Authority	N/A
6. State of Design Authority Type Certificate Date	N/A
7. EASA Type Certification Date	03 April 2017

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	15 September 2014
2. Airworthiness Requirements	CS-VLA Amdt. 1, 5 May 2009
3. Special Conditions	none
4. Exemptions	none
5. (Reserved) Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	CS-36 Amdt. 2 dated 31 August 2009, subpart C with reference to ICAO Annex 16, Volume 1, Chapter 10, Amdt. 9 dated 30 July 2009.



A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition Document No. "TDDCR-BS115-001" Type Design Data Configuration Report, latest applicable issue.
2. Description Single-engine low wing monoplane, tandem two-seater configuration. Equipped with retractable landing gear and variable pitch constant speed propeller. Airframe made by composite material carbon fibre reinforced epoxy (CFRP).
3. Equipment Equipment list as reported in BCV-00-38-00 "BS115 Airplane Flight Manual" Section 6
4. Dimensions
- | | | |
|-----------|----------------------|-------------|
| Span | 9.000 m | 29.53 ft |
| Length | 7.437 m | 24.40 ft |
| Height | 2.455 m | 8.05 ft |
| Wing area | 10.31 m ² | 111.00 sqft |
5. Engine
- 5.1. Model Lycoming IO-320-D1B
- 5.2 Type Certificate TCDS no. US 1E12
- 5.3 Limitations Max Take-off Power: 160 shp
Max Continuous Power: 160 shp
Other limitations are listed in BCV-00-38-00 "BS115 Airplane Flight Manual" Section 2
6. Load factors
- | | Flap UP | Flap DOWN |
|--------------|---------|-----------|
| Max positive | +5 | +2.0 |
| Max negative | -2.5 | 0 |
7. Propeller
- 7.1 Model Hartzell Raptor series
Hub: 3C1-L675A1
Governor: S-1-78
Blades: 76C03-7
- 7.2 Type Certificate TCDS No. IM.P.137
- 7.3 Number of blades 3
- 7.4 Diameter 1.75 m (69 in)
- 7.5 Sense of Rotation Clockwise (pilot's view)



8. Fluids

8.1 Fuel Refer to AFM, Section 2 for engine fuels

8.2 Oil Refer to AFM, Section 2 for engine oil

8.3 Coolant N/A

9. Fluid capacities

9.1 Fuel 2 tanks, 64 litres (17 USG) each. Total usable capacity: 113.5 litres (30 USG).

9.2 Oil

Total: 7.57 litres (8 quart)

Minimum: 3.78 litres (4 quart)

9.3 Coolant system capacity N/A

10. Air Speeds

Never Exceed Speed V_{NE} : 172 KCAS

Max. structural cruising speed V_{NO} : 150 KCAS

Operating Manoeuvring speed V_A : 123 KCAS

Max. speed with landing gear extended: V_{LE} : 90 KCAS

Max. speed for landing gear operation V_{LO} : 90 KCAS

Max. speed with flaps fully deployed V_{FE} : 90 KCAS

11. Maximum Operating Altitude

11500 ft – Density Altitude

12. Approved Operations Capability

Day VFR

Flights in known icing conditions is prohibited

13. Maximum Masses

Max. Take-off: 750 kg (1653 lbs)

Max. Landing 750 kg (1653 lbs)

14. Centre of Gravity Range

23% MAC 31% MAC at 750 Kg

16.5% MAC 31% MAC at 712 Kg

Mean Aerodynamic Chord: 1360.26 mm

15. Datum

800 mm aft of composite bulkhead.

165 mm up from airplane fuselage centreline.



16. Control surface deflections

Aileron (Left / Right)	Up: $28^{\circ} \pm 2^{\circ}$ Down: $23^{\circ} \pm 2^{\circ}$
Elevator	Up: $29^{\circ} \pm 1^{\circ}$ Down: $8^{\circ} \pm 1^{\circ}$
Rudder	Left: $25^{\circ} \pm 2^{\circ}$ Right: $25^{\circ} \pm 2^{\circ}$
Elevator trim	UP: $25^{\circ} \pm 1^{\circ}$ Down: $15^{\circ} \pm 1^{\circ}$
Flap	Take-off: $15^{\circ} \pm 1^{\circ}$ Landing: $30^{\circ} \pm 1^{\circ}$

17. Levelling Means

18. Minimum Flight Crew

19. Maximum Passenger Seating Capacity

20. Baggage/ Cargo Compartments

21. Wheels and Tyres

22 Serial Numbers Eligible

Baggage compartment surface

1 pilot seated in the front seat

1

33 kg capacity, 2.5 m aft of datum

Nose Landing Gear: 5.00-5"

Main Landing Gear: 4.00-5"

For approved tyres and ratings, see AMM

s/n BCV.001 and subsequent



A.IV. Operating and Service Instructions

- | | |
|--------------------------------|--|
| 1. Flight Manual | BCV-00-38-00 "BS115 Aircraft Flight Manual", Issue 1 |
| 2. Maintenance Manual | BCV-00-39-00 "Aircraft Maintenance Manual", Issue 0 |
| 3. Structural Repair Manual | N/A |
| 4. Weight and Balance Manual | included in the AFM |
| 5. Illustrated Parts Catalogue | N/A |

A.V. Notes

N/A



SECTION B: BK 160

B.I. General

1. Type/ Model / Variant	
1.1 Type	BS 115
1.2 Model	BK 160 (refer to B.V. Note 1)
1.3 Variant	--
2. Airworthiness Category	Normal
3. Manufacturer	Blackshape SPA SS 16 KM 841+900 Z.I. 70043 Monopoli (BA) Italy
4. EASA Type Certification Application Date	14 March 2013
5. State of Design Authority	N/A
6. State of Design Authority Type Certificate Date	N/A
7. EASA Type Certification Date	03 April 2017

B.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	15 September 2014
2. Airworthiness Requirements	CS-VLA Amdt. 1, 5 May 2009
3. Special Conditions	SC-CVLA-div01-02 "CS-VLA Aeroplanes with MTOM of more than 750 Kg" SC-OVLA.div03-02 – Night VFR Operation with VLA
4. Exemptions	none
5. (Reserved) Deviations	none
6. Equivalent Safety Findings	ESF to SC-OVLA.div-03-02 SC 1143 and SC 1147 ESF to CS VLA.161 (b)(2)(ii)Amdt 1
7. Environmental Protection	CS-36 Amdt. 2 dated 31 August 2009, subpart C with reference to ICAO Annex 16, Volume 1, Chapter 10, Amdt. 9 dated 30 July 2009.



B.III. Technical Characteristics and Operational Limitations

- 1. Type Design Definition Document No. "TDDCR-BS115-004" Type Design Data Configuration Report, latest applicable issue.
- 2. Description Single-engine low wing monoplane, tandem two-seater configuration. Equipped with retractable landing gear and variable pitch constant speed propeller. Airframe made by composite material carbon fibre reinforced epoxy (CFRP).
- 3. Equipment Equipment list as reported in BCV-00-38-00 BS115 Airplane Flight Manual Section 6
- 4. Dimensions

Span	9.000 m	29.53 ft
Length	7.437 m	24.40 ft
Height	2.455 m	8.05 ft
Wing area	10.31 m ²	111.00 sqft

5. Engine

- 5.1. Model Lycoming IO-320-D1B
- 5.2 Type Certificate TCDS no. US 1E12
- 5.3 Limitations Max Take-off Power: 160 shp
Max Continuous Power: 160 shp
Other limitations are listed in BCV-00-38-00 "BS115 Airplane Flight Manual" Section 2

6. Load factors

	Flap UP	Flap DOWN
Max positive	+4.4	+2.0
Max negative	-2.0	0

7. Propeller

- 7.1 Model Hartzell Raptor series
Hub: 3C1-L675A1
Governor: S-1-78
Blades: 76C03-7
- 7.2 Type Certificate TCDS No. IM.P.137
- 7.3 Number of blades 3
- 7.4 Diameter 1.75 m (69 in)
- 7.5 Sense of Rotation Clockwise (pilot's view)

8. Fluids

- 8.1 Fuel Refer to AFM, Section 2 for engine fuels
- 8.2 Oil Refer to AFM, Section 2 for engine oil
- 8.3 Coolant N/A



9. Fluid capacities

9.1 Fuel 2 tanks, 64 litres (17 USG) each. Total usable capacity: 113.5 litres (30 USG).

9.2 Oil

Total: 7.57 litres (8 quart)
Minimum: 3.78 litres (4 quart)

9.3 Coolant system capacity N/A

10. Air Speeds

Never Exceed Speed V_{NE} : 172 KCAS
Max. structural cruising speed V_{NO} : 148 KCAS
Operating Manoeuvring speed V_A : 122 KCAS
Max. speed with landing gear extended: V_{LE} : 90 KCAS
Max. speed for landing gear operation V_{LO} : 90 KCAS
Max. speed with flaps fully deployed V_{FE} : 90 KCAS

11. Maximum Operating Altitude

11500 ft – Density Altitude

12. Approved Operations Capability

Day/Night VFR
Flights in known icing conditions is prohibited

13. Maximum Masses

Max. Take-off: 850 kg (1874 lbs)

Max. Landing 850 kg (1874 lbs)

14. Centre of Gravity Range

23% MAC 31% MAC at 850 Kg
19% MAC 31% MAC at 765 Kg
Mean Aerodynamic Chord: 1360.26 mm

15. Datum

800 mm aft of composite bulkhead.
165 mm up from airplane fuselage centreline.



16. Control surface deflections

Aileron (Left / Right)	Up: $14^{\circ} \pm 1^{\circ}$ Down: $13^{\circ} \pm 1^{\circ}$
Elevator	Up: $25^{\circ} \pm 1^{\circ}$ Down: $8^{\circ} \pm 1^{\circ}$
Rudder	Left: $25^{\circ} \pm 2^{\circ}$ Right: $25^{\circ} \pm 2^{\circ}$
Elevator trim	DWN: $30^{\circ} \pm 2^{\circ}$ UP: $4^{\circ} \pm 1^{\circ}$
Flap	Take-off: $15^{\circ} \pm 1^{\circ}$ Landing: $30^{\circ} \pm 2^{\circ}$

17. Levelling Means

Baggage compartment surface

18. Minimum Flight Crew

1 pilot seated in the front seat

19. Maximum Passenger Seating Capacity

1

20. Baggage/ Cargo Compartments

33 kg capacity, 2.5 m aft of datum

21. Wheels and Tyres

Nose Landing Gear: 5.00-5"

Main Landing Gear: 4.00-5"

22. Serial Numbers Eligible

For approved tyres and ratings, see AMM

s/n BCV.21005 and subsequent
(refer to B.V. Note 2)



B.IV. Operating and Service Instructions

- | | |
|--------------------------------|---|
| 1. Flight Manual | BCV-00-38-00 "BS115 Aircraft Flight Manual", Issue 2 rev.0 or later approved revision |
| 2. Maintenance Manual | BCV-00-39-00 "Aircraft Maintenance Manual", Issue 1 rev.0 or later approved revision |
| 3. Structural Repair Manual | N/A |
| 4. Weight and Balance Manual | included in the AFM |
| 5. Illustrated Parts Catalogue | N/A |



B.V. Notes

- 1) BK 160 model consists of BS 115 model modified as per major changes MOD-BCV-17-020 “BS 115 weight increase to 850 kg” (EASA Approval 10071128), major change MOD-BCV-17-021 “Internal Muffler (EASA Approval 10071131) and MOD-BCV-17-026 “BS 115 Night-VFR” (EASA Approval 10071129).
- 2) Aircraft S/N BCV.21003 and S/N BCV.21004 were originally produced as BS 115 model with applied Major Changes see B.V. Note 1) resulting in conformity of these 2 aircraft with basic specifications of BK 160 model.



SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

Acronyms

AFM – Aircraft Flight Manual
AMM – Aircraft Maintenance Manual
CRI – Certification Review Item
CS – Certification Specification
VLA – Very Light Aircraft
EASA – European Aviation Safety Agency
ESF – Equivalent Safety Finding
ICAO – International Civil Aviation Organization
IPC – Illustrated Part Catalogue
KCAS – Knots Calibrated Air Speed
KOEL – Kind of Operations Equipment List
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
N-VFR – Night - Visual Flight Rules
Ft - feet

II. Type Certificate Holder Record

TC Holder	Period
Blackshape S.p.A. SS 16 KM 841+900 Z.I. 70043 Monopoli (BA) Italy	Effective



III. Change Record

Issue	Date	Changes	TC Issue No. & Date
Issue 01	03 April 2017	Initial Issue	Initial Issue, 03 April 2017
Issue 02	17 Dec 2018	Change to maximum operating altitude, definition of eligible serial numbers and elevator deflections.	Initial Issue, 03 April 2017
Issue 03	02 Oct. 2019	Added Variant <i>BK160 Gabriël</i> incorporating major changes: MOD-BCV-17-020, MOD-BCV-17-021 and MOD-BCV-17-026	Initial Issue, 03 April 2017
Issue 04	12 May 2020	Variant BK 160 transformed to a new separate model BK 160 – document general restructuring	Issue 01, 12 May 2020
Issue 05	18 March 2022	Administrative corrections in sections A.IV. and B.IV. performed based on the DOA audit.	Issue 01, 12 May 2020

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