



## European Aviation Safety Agency

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### EASA TYPE CERTIFICATE DATA SHEET

#### BB-S

#### *Special Shape Manned Free Hot-Air Balloon*

**Type Certificate Holder:**

**BALÓNY KUBÍČEK spol. s r.o.**  
Francouzská 81  
602 00 Brno  
CZECH REPUBLIC

**Manufacturer:**

**BALÓNY KUBÍČEK spol. s r.o.**  
Francouzská 81  
602 00 Brno  
CZECH REPUBLIC

For Variants: Special Shape Hot Air Balloon Type

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## **SECTION A1 GENERAL, BB-S Type Design**

### **A1.I. General**

- |                                  |  |
|----------------------------------|--|
| 1. Data Sheet No: EASA.BA.017    | Issue: 23, Date: 06 June 2018                                |
| 2. Type / Variant or Model       |  |
| - Type:                          | BB-S   |
| - Variant or Model:              | Refer to Section A2  |
| 3. Airworthiness Category:       | Normal   |
| 4. Type Certificate Holder:      | BALÓNY KUBÍČEK spol. s r.o.<br>Francouzská 81<br>602 00 Brno |
| 5. Manufacturer:                 | BALÓNY KUBÍČEK spol. s r.o.<br>Francouzská 81<br>602 00 Brno |
| 6. National Certification Date:  | N/A  |
| 7. CAA Application Date:         | N/A  |
| 8. EASA Application Date:        | 11.09.2006   |
| 9. EASA Type Certification Date: | 02.03.2007   |

### **A1.II. Certification Basis**

- |  |   |
|--|---|
| 1. Reference Date for determining the applicable requirements: | Refer to Section A2, see Tables 1, 2 and 3  |
| 2. CAA CZ Type Certificate Data Sheet No:                      | N/A   |
| 3. EASA Certification Basis:                                   | See CRI A-01, dated – refer to Section A2, Tables 1, 2 and 3  |
| 4. Airworthiness Requirements:                                 | Refer to Section A2, see Tables 1, 2 and 3  |
| 5. Special Conditions:   | Lights for Manned Balloons Flights at Night, date 22 Oct 2012   |
| 6. Reversion and Exemptions:                                   | None  |
| 7. Equivalent Safety Findings:                                 | - FAR 31.47 (d) endurance test for KOMET DUO burner from S/N 105<br>- CRI E-01, issue 2, dated February 15, 2007: FAR § 31.47 (d) ) endurance test for IGNIS burner |

### **A1.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: Refer to Section A2
2. Description: The free hot-air balloon with the non-conventional shaped envelopes of 1,000-6,000 m<sup>3</sup> volume, vertical or horizontal constructions with 8-32 gores. The parachute, paralite or Smart Vent is used for closing of the vent aperture. As option, the envelope can be equipped with rotation vent. The single backed up, double or triple burner is the heat source for the envelope. The basket is cane-work connected with the envelope by means of stainless-steel wires and karabiners with a screw gate. Preference of the basket and burner type should be provide with respect to the envelope size. Stainless, duralumin or titanium fuel cylinders (approved models are listed in the approved Flight Manual) fixed in the basket, the equipment and instruments are fixed on the inner side of the basket.
3. Equipment:
  - Altimeter
  - A rate of climb indicator (variometer)
  - Melting link for the envelope overheating check
  - Fuel quantity gauge
  - Double ignition equipment
  - Drop line
  - Fire extinguisher
  - Heat-resistant cloth
4. Envelope: Refer to Section A2, see Table 1, 4 and 5
5. Burner: Refer to Section A2, see Table 2, 4 and 5
6. Basket: Refer to Section A2, see Table 3, 4 and 5
7. Fuel Cylinder: Refer to Section A2, see Table 6
8. Mass: Maximum take-off weight: Refer to Section A2, see Table 1
9. Envelope temperature: In accordance with the used fabric as follows:
  - Nylon, Polyurethane coated  
Hot Air Balloons fabric max. 110°C
  - Polyester, Polyurethane or Acrylic coated  
Hot Air Balloons fabric max. 124°C
  - Max. admissible air temperature in the envelope REPLIKA is max. 120°C
10. Minimum Flight Crew: 1 Pilot
11. Maximum number of persons on board: In accordance with approved Flight Manual
12. Other Limitations:
  - For BB-S, single-unit burner type must not be used. It is applicable for bulletin No. BB/22b-1 too (see Section V. Notes 1.)
  - The TC covers the S/N 8 of the REPLIKA envelope models only
  
  - VFR operations only (see A V. Note 3 for details)

#### **A1.IV. Operating and Service Instructions**

1. Applicable to the balloons up-to S/N 639 included:  
Flight Manual for use with the Hot Air Balloon (Document No.: B.0102)
  - Revision 11 or later EASA approved revision see Section A2, Table 1.OR  
Flight Manual for use with the hot air balloon (Document No.: B.3102)
  - initial issue or later EASA approved revision
  
2. Applicable to the balloons up to S/N 639 inclusive and burners up to S/N 470 inclusive:  
Maintenance Manual for use with the hot air balloon (Document No.: B.0202)
  - Revision 5 or later EASA accepted revision, see Section A2, Table 1OR  
Maintenance Manual for use with the hot air balloon (Document No.: B.3202)
  - initial issue or later EASA approved revision
  
3. Applicable to the balloons from S/N 640:  
Flight Manual for use with the hot air balloon (Document No.: B.2102)
  - initial issue or later EASA approved revision, see Section A2, Table 1OR  
Flight Manual for use with the hot air balloon (Document No.: B.3102)
  - initial issue or later EASA approved revision
  
4. Applicable to the balloons from S/N 640 and burners from S/N 471:  
Maintenance Manual for use with the hot air balloon (Document No.: B.2202)
  - initial Issue or later EASA approved revision, see Section A2, Table 1OR  
Maintenance Manual for use with the hot air balloon (Document No.: B.3202)
  - initial issue or later EASA approved revision
  
5. Flight manual Supplement for use with the special shaped hot-air balloon (Document No.: refer to Section A2, see Table 1)
  - issue refer to Section A2, see Table 1 or later EASA approved revision
  
6. Flight Manual for use with the hot air balloon REPLIKA special shaped (Document No.: FM REPLIKA), see Section A2, Table 1
  - issue 0 or later EASA approved revision
  - Applicable for balloon S/N 8 only.

#### **A1.V. Notes**

1. Applicable range of balloon parts or equipment from the other manufacturers – see the Optional Bulletin No. BB/22b-1.
  
2. The master documents of the Operating and Service Instructions listed in the section A.IV are issued in English language. Other languages may be provided by the Type Certificate holder.

3. The BB-S balloons are limited to VFR day flights unless an approved set of position lights and the appropriate supplement to the Flight Manual are used:
  - Applicable to the balloons up to S/N 639 inclusive: FMS Night Flying (Document No. B.0102-NF)
  - Applicable to the balloons from S/N 640: FMS Night Flying (Document No. B.2102-NF)

**SECTION A2: BB-S Type Definition and Certification Data**

**Table 1: Envelopes**

Model	Volume [m³]	Gores [pcs.]	MTOM [kg]	Reference date	Certification basis	Airworthiness requirements	AFM/MM applicable revision from:		Flight Manual Supplement	Drawing No.
							up to S/N 639	from S/N 640		
CUBE	3400	16 Z-type	950	11.9.2006	<u>CRI A-01</u> 11.12.2006	FAR 31, Amdt. 31-7, May 24, 1996	10/8	---	<u>B.0102-CUBE</u> Issue 1 5.2.2007	<u>55-053440</u> 1.11.2006
FORKLIFT	3400	18 Z-type	900	25.1.2007	<u>CRI A-01</u> 9.3.2007	FAR 31, Amdt. 31-7, May 24, 1996	10/8	---	<u>B.0102-FORKLIFT</u> Change 0 29.3.2007	<u>55-053450</u> 20.2.2007
SILO	3400	16 Z-type	950	6.4.2007	<u>CRI A-01</u> 15.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-SILO</u> Change 0 30.7.2007	<u>55-053460</u> 20.4.2007
ICE	2850	20 Z-type	800	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-ICE</u> Change 0 10.12.2007	<u>55-053530</u> 26.7.2007
BEAR	3000	20 Z-type	800	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-BEAR</u> Change 0 10.12.2007	<u>55-053560</u> 26.7.2007
DHL	2600	24 Z-type	850	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-DHL</u> Change 0 10.12.2007	<u>55-053540</u> 26.7.2007
JUPOL	2500	16 Z-type	650	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-JUPOL</u> Change 0 10.12.2007	<u>55-053520</u> 26.7.2007
JAG	2400	14 Z-type	650	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-JAG</u> Change 0 10.12.2007	<u>55-053490</u> 26.7.2007
BEMB	3600	20 Z-type	950	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-BEMB</u> Change 0 10.12.2007	<u>55-053510</u> 26.7.2007
JAGER	1800	14 Z-type	450	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-JAGER</u> Change 0 10.12.2007	<u>55-053500</u> 26.7.2007
KRIGL	2600	14 Z-type	700	23.5.2007	<u>CRI A-01</u> 29.5.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-KRIGL</u> Change 0 10.12.2007	<u>55-053550</u> 26.7.2007
HEART	2400	18 Z-type	700	30.5.2007	<u>CRI A-01</u> 28.6.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-HEART</u> Change 0 10.12.2007	<u>55-053480</u> 26.7.2007
JAGER 28	2800	14 Z-type	800	14.5.2007	<u>CRI A-01</u> 12.8.2007	FAR 31, Amdt. 31-7, May 24, 1996	11/8	---	<u>B.0102-JAGER</u> 28 Change 0 10.12.2007	<u>55-053470</u> 20.6.2007
SANTA	3600	20 Z-type	995	3.4.2008	<u>CRI A-01</u> 11.04.2008	FAR 31, Amdt. 31-7, May 24, 1996	14/9	---	<u>B.0102-SANTA</u> Change 0 22.7.2008	<u>55-053600</u> 24.04.2008
RABBIT	4390	24 Z-type	995	13.2.2009	<u>CRI A-01</u> 24.03.2009	FAR 31, Amdt. 31-7, May 24, 1996	---	1/0	<u>B.2102-RABBIT</u> Change 0 20.4.2009	<u>55-053700</u> 18.02.2009
REPLIKA	2400	32 N-type	600	5.5.2009	<u>CRI A-01</u> 4.06.2009	FAR 31, Amdt. 31-4, Sept 11, 1980	0/10	---	---	<u>55-053710</u> 6.1.1991
MONTGOLFIERE	2850	20 Z-type	900	19.8.2009	<u>CRI A-01</u> 9.09.2009	FAR 31, Amdt. 31-4, Sept 11, 1980	---	5/1	<u>B.2102-MONTGOLFIERE</u> Change 0 18.1.2010	<u>55-053720</u> 28.8.2009

Model	Volume [m <sup>3</sup> ]	Gores [pcs.]	MTOM [kg]	Reference date	Certification basis	Airworthiness requirements	AFM/MM applicable revision from:		Flight Manual Supplement	Drawing No.
							up to S/N 639	from S/N 640		
BURGER KING	3400	24 Z-type	995	5.11.2009	<u>CRI A-01</u> 14.12.2009	FAR 31, Amdt. 31-4, Sept 11, 1980	---	7/2	<u>B.2102-BKING</u> <u>Change 0</u> 9.3.2010	<u>55-053730</u> <u>23.11.2009</u>
GNOME	3400	20 Z-type	999	6.5.2010	<u>CRI A-01</u> 15.6.2010	FAR 31, Amdt. 31-4, Sept 11, 1980	---	7/2	<u>B.2102-GNOME</u> <u>Change 0</u> 2.8.2010	<u>55-053740</u> <u>11.05.2010</u>
BALL	2700	24 Z-type	800	1.9.2010	<u>CRI A-01</u> 06.09.2010	FAR 31, Amdt. 31-4, Sept 11, 1980	---	8/3	<u>B.2102-BALL</u> <u>Change 0</u> 27.10.2010	<u>55-053750</u> <u>13.09.2010</u>
VOSTOK	4300	24 Z-type	1300	11.1.2011	<u>CRI A-01</u> 24.01.2011	FAR 31, Amdt. 31-4, Sept 11, 1980	---	10/4	<u>B.2102-VOSTOK</u> <u>Change 0</u> <u>30.3.2011</u>	<u>55-053760</u> <u>18.1.2011</u>
FISH	3000	24 Z-type	850	14.3.2011	<u>CRI A-01</u> 01.04.2011	FAR 31, Amdt. 31-4, Sept 11, 1980	---	10/4	<u>B+.2102-FISH</u> <u>Change 0</u> 24 June.2011	<u>55-053770</u> <u>11.4.2011</u>
CUP	2800	20 Z-type	850	7.1.2013	<u>CRI A-01</u> <u>24.1.2013</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	17/7	<u>B.2102-CUP</u> <u>Change 0</u> 19.4.2013	<u>53790.00</u> <u>11.1.2013</u>
PHARE	3000	20 Z-type	900	28.11.2012	<u>CRI A-01</u> <u>4.1.2013</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	18/7	<u>B.2102-PHARE</u> <u>Change 0</u> 4.6.2013	<u>53780.00</u> <u>18.3.2013</u>
SHIP	3600	28 Z-type	1100	7.6.2013	<u>CRI A-01</u> <u>24.6.2013</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	19/9	<u>B.2102-SHIP</u> <u>Change 0</u> 30.10.2013	<u>53810.00</u> <u>9.7.2013</u>
SKYBALLS	3000	20 Z-type	900	6.10.2015	<u>CRI A-01</u> <u>14.10.2015</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	22/11	<u>B.2102-SKYBALLS</u> <u>Change 0</u> 20.1.2016	<u>53820.00</u> <u>12.10.2015</u>
WURST	4000	24 Z-type	1300	8.12.2015	<u>CRI A-01</u> <u>17.12.2015</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	23/11	<u>B.2102-WURST</u> <u>Change 0</u> 19.4.2016	<u>53830.00</u> <u>11.12.2015</u>
BALL 105	3000	24 Z-type	900	10.05.2016	<u>CRI A-01</u> <u>18.05.2016</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	23/12	<u>B.2102-BALL 105</u> <u>Change 0</u> 16.10.2016	<u>53840.00</u> <u>10.05.2016</u>
POLAR BEAR	2400	20 Z-type	750	22.11.2017	<u>CRI A-01</u> <u>30.11.2017</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	2/0	<u>B.3102-POLAR BEAR</u> <u>Change 0</u> 12.04.2018	<u>53850.00</u> <u>10.01.2018</u>
VILSA	3200	20 Z-type	900	24.1.2018	<u>CRI A-01</u> <u>7.2.2018</u>	FAR 31, Amdt. 31-4, Sept 11, 1980	---	2/0	<u>B.3102-VILSA</u> <u>Change 0</u> 06.06.2018	<u>53860.00</u> <u>26.2.2018</u>

**Table 2: Burners**

Model	Reference date	Certification basis	Airworthiness requirements	Drawing No.	Applicable burner frames
H3-D	8.7.1992	---	FAR 31, Amdt. 31-4 September 11, 1980	80-050306 7.3.1994	Fixed Frame - H3 - type
HB2	8.7.1992	---	FAR 31, Amdt. 31-4, September 11, 1980	80-050450 12.1.1999	Fixed Frame - H7 type
KOMET DUO up to S/N 104 including	8.7.1992	---	FAR 31, Amdt. 31-4 September 11, 1980	81-050676 16.4.1999	Fixed Frame - basic
KOMET DUO from S/N 105	8.7.1992	---	FAR 31, Amdt. 31-7 April 24, 1996	81-050676 Modification No. 99BB 22.7.2002	Fixed / Vario Frame - basic, K25P



Model	Reference date	Certification basis	Airworthiness requirements	Drawing No.	Applicable burner frames
IGNIS	16.11.2005	<u>CRI A-01</u> 15.2.2007	FAR 31, Amdt. 31-7, April 24, 1996	84-053115.00 84-053128.00 84-053241.00	Fixed / Vario Frame - basic

**Table 3: Baskets**

Model	Reference date	Dimension	Certification basis	Airworthiness requirements	Drawing document No.	Applicable burner frames
K7	8.7.1992	0.85x0.85 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	60-050072 10.3.1993	Fixed Frame - H3 type Fixed / Vario Frame - basic
K10	8.7.1992	0.85x1.00 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050097 10.3.1993	Fixed Frame - H3 type Fixed / Vario Frame - basic
K11	10.1.2008	0.98x1.16 m, height 1,10 m	<u>CRI A-1</u> 29.1.2008	FAR 31, Amdt. 31-7 April 24, 1996	61-054200 21.1.2008	Fixed / Vario Frame - basic
K12	8.7.1992	1.16x1.16 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050556 10.3.1993	Fixed / Vario Frame - basic
K12A	8.7.1992	1.16x1.16 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050586 10.3.1993	Fixed / Vario Frame - basic
K13	10.1.2008	0.98x1.25m height 1.03-1.14 m	<u>CRI A-1</u> 29.1.2008	FAR 31, Amdt. 31-7 April 24, 1996	61-054300 21.1.2008	Fixed / Vario Frame - basic
K13S	14.11.2008	0.95 x 1.26 m height 1.1 m	<u>CRI A-1</u> 17.3.2009	FAR 31, Amdt. 31-7 May 24, 1996	62-054450 1.4.2009	Fixed / Vario Frame - basic
K15	8.7.1992	1.16x1.25 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050111 10.3.1993	Fixed / Vario Frame - basic
K16	8.7.1992	1.16x1.40 m, height 1,10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050125 10.3.1993	Fixed / Vario Frame - basic
K17	10.1.2008	1.16x1.45m height 1.03-1.14 m	<u>CRI A-1</u> 29.1.2008	FAR 31, Amdt. 31-7 April 24, 1996	61-054400 21.1.2008	Fixed / Vario Frame - basic
K18	8.7.1992	1.16x1.55 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050135 10.3.1993	Fixed / Vario Frame - basic
K19	9.11.2015	1.16 x 1.55 m, height 1.10 m	<u>CRI A-1</u> 27.11.2015	CS-31HB Amdt 1 05/12/2011	57300.00 21.3.2016	Fixed / Vario Frame - basic
K19L	9.11.2015	1.16 x 1.62 m, height 1.10 m	<u>CRI A-1</u> 27.11.2015	CS-31HB Amdt 1 05/12/2011	57330.00 21.3.2016	Fixed / Vario Frame - basic
K22	8.7.1992	1.25x1.79 m, height 1.10 m	---	FAR 31, Amdt. 31-7 April 24, 1996	62-052680 19.7.2002	Fixed / Vario Frame - basic
K23	9.11.2015	1.25 x 1.8 m, height 1.10 m	<u>CRI A-1</u> 27.11.2015	CS-31HB Amdt 1 05/12/2011	57350.00 21.3.2016	Fixed Frame – K23 - type
K25P	8.7.1992	1.25x2.08 m, height 1.10 m P-Partition	---	FAR 31, Amdt. 31-7 May 24, 1996	62-052650 28.11.2001	Fixed Frame - K25P - type
K32T	4.10.2002	1.25x2.41m, height 1.15 m T-Partition	---	FAR 31, Amdt. 31-7 May 24, 1996	62-053050 30.7.2004	Fixed Frame - K32T - type
J1	23.6.1992	1.23x1.23 m, height 1.00 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>500 000</u> 17.2.1992	Fixed / Vario Frame - basic
J2	23.6.1992	1.23x1.35 m, height 1.00 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>500 000</u> 17.2.1992	Fixed / Vario Frame - basic



**Table 5: Approved combinations of envelopes and burners for BB-S models**

Envelope	Burner				
	H3-D	HB2	KOMET DUO up to 104	KOMET DUO 105+	IGNIS 2
CUBE					
FORKLIFT					
SILO					
ICE					
BEAR					
DHL					
JUPOL					
JAG					
BEMB					
JAGER					
KRIGL					
HEART					
JAGER 28					
SANTA					
RABBIT					
REPLIKA					
MONTGOLFIERE					
BURGER KING					
GNOME					
BALL					
VOSTOK					
FISH					
CUP					
PHARE					
SHIP					
SKYBALLS					
WURST					
BALL 105					
POLAR BEAR					
VILSA					

 = approved combination

**Table 6: Fuel Cylinders**

Model	Reference date	Volume	Pw	Certification basis	Airworthiness requirements	Drawing document No.
KB72L	16.7.2015	72l	15bar	CRI A-1 20.4.2016	FAR 31, Amdt. 31-7 May 24, 1996 CS-31HB Amdt 1 05/12/2011	55120.00 17.6.2016
KB97L	16.7.2015	97l	15bar	CRI A-1 20.4.2016	FAR 31, Amdt. 31-7 May 24, 1996 CS-31HB Amdt 1 05/12/2011	55120.00 17.6.2016