TYPE-CERTIFICATE

DATA SHEET

NO. EASA.BA.517

for
FREE MANNED HOT AIR BALLOONS

Type Certificate Holder
ULTRAMAGIC, S.A.

Aerodrom Igualada-Odena s/n
08711 ODENA
Spain

For models: Type F-Series Ultramagic Special Shape Envelopes

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CONTENTS

SECTION 1 : GENERAL

I. General (applicable to all models)
II. Certification basis
III. Common data to all models

SECTION 2 : SPECIAL SHAPE (F-Models)

2.1. General
2.2. Burners and Baskets for Special Shape models
2.3. Notes

SECTION 3 : NOTES

SECTION 4 : ADMINISTRATIVE ISSUES

SECTION 1: GENERAL (applicable to all models)

I. GENERAL

1. Data Sheet No: EASA.BA.517	Issue Date: 15 March 2024
2. Type / Variant or Model	
(a) Type:	Ultramagic Special Shape Types (F Models)
(b) Variant or Model	Refer to Section 2
3. Category:	Free manned Hot Air Balloon
4. Type Certificate Holder:	ULTRAMAGIC, S.A. Aerodrom Igualada-Odena s/n 08711 ODENA Spain
5. Manufacturer:	ULTRAMAGIC, S.A. Aerodrom Igualada-Òdena s/n 08711 ODENA Spain
6. National certification date:	Various, refer to Section 2
7. DGAC-ES application date:	Various, refer to Section 2
8. EASA certification date:	19 January 2006
9. TCDS History:	This EASA TCDS replaces the Spanish TCDS Nr. 54, Rev. 20 issued by the DGAC-ES. Between 19 January 2006 and 17 July 2008 special shape balloons were embraced by EASA.BA.014.

II. CERTIFICATION BASIS

This Type Certificate has initially been issued according to the requirements of la Dirección General de Aviación Civil (DGAC) following 14 CFR Part 31 corresponding to Manned Hot Air Balloons Part 31, Amdt. 4, 14 October 1980. The models F-4 and F-5 to F13 correspond to this Amdt. 4.

For models F-14 to F-24 the applied rule corresponds to 14 CFR Part 31, Amdt. 5, 18 August 1990.

For models F-25, F-26 and F-29 to F-35 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996.

Alternative means of compliance concerning 14 CFR Part 31 paragraph 31.47(d) (Amdt. 7, 24 May 1996) were applied to the burner models MK-2, MK-2 Super and MK-10. A special test programme was established to ensure the equivalent level of safety.

For models F-26 and F-29 to F-32 the applied rule corresponds to CS-31HB draft (see EASA NPA 07/2006)

For models F-33 to F-35 the applied rule corresponds to CS 31HB (February 2009)

For models F-36 to F-41, F-43 and F-44 the applied rule corresponds to CS 31HB Amdt.1

III. COMMON DATA TO ALL MODELS

Equipment:	for FAR Part 31:
	- 1 Altimeter
	- 1 Rate of climb/descent indicator (variometer)
	- 1 Remaining fuel quantity gauge for each fuel cell
	
	for CS 31HB (draft February 2007) in addition:
	- 1 Fuel pressure gauge for each burner
	
	for CS 31HB, February 2009, and CS 31HB/1, December 2011 in addition:
	- 1 Fuel pressure gauge for each burner
	- 1 Rate of climb/descent indicator (variometer), if Flight Manual limitations specify a rate of climb or descent
	- 1 'Kit' if tethering components, if the balloon is specifically approved for tethered operations
	
	for all balloons:
	- Alternative means for burner ignition (lighter or similar)
	- 1 Envelope limit temperature indicator
	- Fire extinguisher
	- Flight Manual, EASA approved
	
	Additional operational equipment may be required by national legislation

Fuel:	Commercial LPG, usually propane, except if burner is configured for butane
Minimum crew:	1 pilot
Compatibility with approved parts of other manufacturers:	See approved Chapter 8 of Ultramagic Flight Manual and Supplements. Only listed approved configurations shall be used. The latest Service Instructions of the other manufacturer's parts shall be used for maintenance
Maintenance schedule:	Annual or 100 hours inspections, whichever applies earlier one and following the Flight Manual and Maintenance Manual corresponding to the specific balloon configuration
Operation and Service Instructions:	Flight Manual for Ultramagic Balloons and applicable Supplements – or later approved revisions Maintenance Manual for Ultramagic Balloons and applicable Supplements – or later accepted revisions Operation and Service Instructions specific to aircraft registration or constructors number with an issue date prior to 28 September 2003 may continue to be used. Inspection shall be in accordance with the latest issue of the inspections schedule – Maintenance Manual for Ultramagic Balloons and applicable Supplements or later EASA accepted revision refers.

SECTION 2 : SPECIAL SHAPE (F-Models)

2.1. General

Model	F-4 TXORI	F-6 JAMBON	F-7BOTE	F-8 CARTUJA	F-9 BOTELLA DE AGUA	F-10 TXORI
Approval date	**3 Jun 1991**	**20 Mar 1991**	**17 Sep 1991**	**28 Apr 1992**	**3 Mar 1993**	**28 Apr 1994**
Technical description						
Volume (m³)	2 200	2 500	2 600	4 497	2 200	2 009
Number of gores	24	12	16	----	24	24
Disposition	20.5	16.9	----	19.4	----	17.30
Max diameter (m)	----	----	13.0	----	10.2	----
Total height (m)	27.0	17.7	25.4	23.1	36.1	26.3
MTOM (kg)	770	875	910	1 391	770	645
Drawing number	F4-figs.	F6-figs.	F7-figs.	F8-figs.	F9-figs.	F10-figs.
Serial numbers eligible	F4-01 & up	F6-01 & up	F7-01 & up	F8-01 & up	F9-01 & up	F10-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Model	F-11 MONT-GOLFIERE	F-12 PAQUETE	F-13 FAIRY	F-14 JARRA DE CERVEZA	F-15 BOTE HUCHA	F-16 CAJA 2
Approval date	**26 Aug 1993**	**30 Aug 1995**	**30 Aug 1995**	**15 Apr 1996**	**15 Apr 1996**	**27 Dec 1996**
Technical description						
Volume (m³)	3 000	2 500	3 511	3 000	3 000	2 000
Number of gores	24	18	24	20	20	20
Disposition	----	14.8	22.2	17.8	17.1	13.2
Max diameter (m)	17.1	----	----	----	----	----
Total height (m)	24.5	27.7	22.7	25.5	25.0	25.0
MTOM (kg)	1 035	670	1 032	850	850	630
Drawing number	F11-figs.	F12-figs.	F13-figs.	F14-figs.	F15-figs.	F16-figs.
Serial numbers eligible	F11-01 & up	F12-01 & up	F13-01 & up	F14-01 & up	F15-01 & up	F16-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Model	F-17 OVNI	F-18 PIZZA	F- 19 CAVA	F-20 BEETLE	F-21 CEPSA	F-22 TORRE
Approval date	**5 Mar 1997**	**26 Jun 1997**	**13 Jun 1998**	**4 Sep 1998**	**24 Dec 1998**	**31 Oct 2000**
Technical description						
Volume (m³)	3 000	4 450	2 500	3 000	2 840	2 900
Number of gores	24	24	28	24	24	24
Disposition	----	----	----	31.0	----	----
Max diameter (m)	27.5	28.0	11.7	----	13.8	19.0
Total height (m)	16.7	23.7	41.2	21.1	27.9	27.6
MTOM (kg)	570	1 000	570	740	810	570
Drawing number	F17-figs.	F18-figs.	F19-figs.	F20-figs.	F21-figs.	F22-figs.
Serial numbers eligible	F17-01 & up	F18-01 & up	F19-01 & up	F20-01 & up	F21-01 & up	F22-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Model	F-24 FLYING-MAN	F-25 FUTBOL	F-26 HEART	F-29 MOVISTAR	F-30 EGG	F-31 MAZORKA DEKALB
Approval date	**5 Mar 2003**	**23 Feb 2004**	**3 Mar 2008**	**23 Oct 2008**	**22 Jan 2009**	**12 Mar 2009**
Technical description						
Volume (m³)	3 580	3 000	2 995	3 510	2 200	4 744
Number of gores	20	24	24	24	24	24
Disposition	14.4	----	----	----	----	----
Max diameter (m)	----	18.1	----	19.5	14.6	24.62
Total height (m)	32.4	21.0	30.8 (24.1)*****	20.7	23.8	24.3
MTOM (kg)	950	980	950	750	700	990
Drawing number	F24-figs.	F25-figs.	F26-figs.	1129	1130	1131
Serial numbers eligible	F24-01 & up	F25-01 & up	F26-01 & up	F29-01 & up	F30-01 & up	F31-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Model	F-32 BEIRAO BOTTLE	F-33 PHAROX LAMP	F-34 METTEN	F-35 R4TS	F-36 PXMART	F-37 BADGE
Approval date	**24 Apr 2009**	**20 July 2009**	**7 Feb 2011**	**4 Jul 2012**	**9 June 2017**	**12 July 2017**
Technical description						
Volume (m³)	2 500	3 458	3 892	3 700	2674	2875
Number of gores	16	20	24	14	16	20
Disposition	----	---	horizontal	horizontal	----	----
Max diameter (m)	13.1	16.1	26.4	20.1	19.07	23.5
Total height (m)	37.4	31.3	19.9	39.8	29.77	32.1
MTOM (kg)	700	990	1 173	995	995	990
Drawing number	1132	1133	1134	1135	1136	1137
Serial numbers eligible	F32-01 & up	F33-01 & up	F34-01 & up	F35-01 & up	F36-01 & up	F37-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Model	F-38 HELMET	F-39 HEART XL	F-40 HEAD	F-41 EINSTEIN	F-43 MAZU	F-44 DRUM
Approval date	**26 June 2020**	**17 Dec 2020**	**09 July 2020**	**05 August 2021**	**18 April 2023**	**22 Jan 2024**
Technical description						
Volume (m³)	2 704	4100	3940	3500	3500	3000
Number of gores	24	24	32	24	24	16
Disposition	----	----	----	----	----	----
Max diameter (m)	22.8	27.03	22.8	27.5	20.6	14.0
Total height (m)	23.3	26.61	28.4	22.3	29.9	25.6
MTOM (kg)	980	1 400	1 032	1 173	1 050	975
Drawing number	1138	1139	1140	1141	1143	1144
Serial numbers eligible	F38-01 & up	F39-01 & up	F40-01 & up	F41-01 & up	F43-01 & up	F44-01 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	2 or more	2 or more	2 or more	2 or more	2 or more	2 or more

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt.

Envelope Temperature: 1) Not exceed by any concept 130ºC
2) Max. continuous temperature 120ºC

Burner: See § 2.2 : Burners and Baskets for F models

Basket: See § 2.2 : Burners and Baskets for F models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120ºC, or according to the basket/equipment used based on § 2.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

Note: ***** total height (m) without inflated appendices (hands)

2.2. Burners and Baskets for F models

BURNER								
Model	MK-2/SUP	MK-10	MK-21		BMK-008		MK-32	BMK-050
Units	double	double	single	double	single	double	double	double
Drawing	2002/2006	2012	2021	2022	2031	2032	2062	2052
F-4 TXORI	X	X	-	X	X	X	X	-
F-6 JAMBON	X	X	-	X	X	X	X	-
F-7 BOTE	X	X	-	X	X	X	X	-
F-8 LA CARTUJA	X	X	-	X	-	X	X	-
F-9 BOTELLA DE AGUA	X	X	-	X	X	X	X	-
F-11 MONTGOLFIERE	X	X	-	X	X	X	X	-
F-10 TXORI	X	X	-	X	X	X	X	-
F-12 PAQUETE	X	X	-	X	X	X	X	-
F-13 FAIRY	X	X	-	X	X	X	X	-
F-14 JARRA DE CERVEZA	-	X	-	X	X	X	X	-
F-15 BOTE-HUCHA	-	X	-	X	X	X	X	-
F-16 CAJA 2	-	X	-	X	X	X	X	-
F-17 OVNI	-	X	-	X	X	X	X	-
F-18 PIZZA	-	X	-	X	-	X	X	-
F-19 CAVA	-	X	-	X	X	X	X	-
F-20 BEETLE	-	X	-	X	X	X	X	-
F-21 CEPSA	-	X	-	X	X	X	X	-
F-22 TORRE	-	X	-	X	X	X	X	-
F-24 FLYINGMAN	-	X	-	X	X	X	X	-
F-25 FUTBOL	-	X	-	X	X	X	X	-
F-26 HEART	-	-	-	X	X	X	X	-
F-29 MOVISTAR	-	X	-	X	X	X	X	-
F-30 EGG	-	X	X	X	X	X	X	-
F-31 MAZORCA DEKALB	-	X	-	X	-	X	X	-
F-32 BEIRAO BOTTLE	-	X	-	X	X	X	X	-
F-33 PHAROX LAMP	-	X	-	X	-	X	X	-
F-34 METTEN	-	-	-	X	-	X	X	-
F-35 R4TS	-	-	X	X	X	X	X	-
F-36 PXMART	-	-	-	X	X	X	X	-
F-37 BADGE	-	-	X	X	X	X	X	-
F-38 HELMET	-	-	-	X	X	X	X	-
F-39 HEART XL	-	X	-	X	-	-	X	-
F-40 HEAD	-	X	-	X	-	X	X	X
F-41 EINSTEIN	-	X	-	X	-	X	X	X
F-43 MAZU	-	-	-	X	-	X	X	X
F-44 DRUM	-	-	-	X	X	X	X	-

BASKET											
Model	CT-01	CT-02	CT-03	CV-06 (see Sec. 3 Note 3)	C1	C2	C3	C4	C6	C7	C10
Size	0.8x1.0 m	1.0x1.2 m	0.8x1.0m	1.5-2x1.4-1.6 m	1.0x1.2 m	1.0 x1.0 m	1.1x1.3 m	1.6x1.2 m	1.8x1.3 m	2.0x1.4 m	1.15x1.45 m
Drawing	3200	3202	3203	3106	3001	3002	3003	3004	3006	3007	3010
F-4 TXORI	-	-	-	-	770	-	-	-	-	-	-
F-6 JAMBON	-	-	-	875	875	-	-	-	-	-	-
F-7 BOTE	-	-	-	910	910	-	910	-	-	-	-
F-8 LA CARTUJA	-	-	-	1391	1 032	-	1 050	1 050	-	-	-
F-9 BOTELLA DE AGUA	401	650	488	-	770	756	770	770	-	-	770
F-11 MONTGOLFIERE	-	-	-	1035	-	-	-	1 035	-	-	1 035
F-10 TXORI	-	-	-		645	-	-	-	-	-	-
F-12 PAQUETE	-	-	-	670	670	-	670	-	-	-	-
F-13 FAIRY	-	-	-	1032	1 032	-	1 032	-	-	-	-
F-14 JARRA DE CERVEZA	-	-	-	850	850	850	850	850	-	-	850
F-15 BOTE-HUCHA	-	-	-	850	850	850	850	850	-	-	850
F-16 CAJA 2	-	-	-	-	630	630	630	-	-	-	-
F-17 OVNI	-	-	-	570	570	-	-	-	-	-	-
F-18 PIZZA	-	-	-	1000	-	-	-	-	1 000	-	-
F-19 CAVA	-	-	-	570	570	570	570	-	-	-	-
F-20 BEETLE	-	-	-	740	740	-	-	-	-	-	-
F-21 CEPSA	-	-	-	810	810	-	810	-	-	-	810
F-22 TORRE	-	-	-	570	570	-	-	-	-	-	-
F-24 FLYINGMAN	-	-	-	950	950	-	950	-	-	-	950
F-25 FUTBOL	-	-	-	980	980	-	980	980	-	-	980
F-26 HEART	-	-	-	950	950	-	950	950	-	-	950
F-29 MOVISTAR	-	-	-	750	750	750	750	-	-	-	750
F-30 EGG	-	-	-	-	700	700	700	-	-	-	700
F-31 MAZORCA DEKALB	-	-	-	990	990	-	990	-	-	-	990
F-32 BEIRAO BOTTLE	-	-	-	700	700	700	700	-	-	-	700
F-33 PHAROX LAMP	-	-	-	990	990	-	990	990	-	-	990
F-34 METTEN	-	-	-	-	1 173	-	1 173	1 173	-	-	1 173
F-35 R4TS	868	-	-	1173	995	-	995	995	-	-	995
F-36 PXMART	-	932	759	995	995	995	995	995	-	-	995
F-37 BADGE	691	954	782	990	990	990	990	-	-	-	990
F-38 HELMET	-	974	832	980	980	980	980	980	-	-	980
F-39 HEART XL	-	-	-	1400	1369	1088	1400	1400	1400	1400	1365
F-40 HEAD	-	1 012	-	1032	1 032	-	1 032	1 032	1 032	-	1 032
F-41 EINSTEIN	-	949	-	1173	1 173	-	1 173	1 173	1 173	-	1 173
F-43 MAZU	-	964	822	1050	1 050	-	1 050	1 050	1 050	-	1 050
F-44 DRUM	-	774	632	-	975	-	975	975	-	-	975

** Compatibility and maximum mass in kg

SECTION 3 : NOTES

Note 1	The system FDS of deflation can be installed optionally according to drawings 1031/72, 1031/75 and 1031/76 in all models.
Note 2	The new format of the data sheet was introduced for improved visibility. The Special Shape Type data was transferred from EASA.BA.014, Issue 5 to this TCDS. The date in Section 1 I.8. represents the initial date of publication of the TC EASA.BA.014 and remains valid.
Note 3	Rotation vents become mandatory on envelopes combined with the CV-06 Basket.

* * *

SECTION 4 : ADMINISTRATIVE ISSUES

I. Acronyms & Abbreviations

N/A

II. List of effective Pages

page	1	2	3	4	5	6	7	8	9
issue	15	9	15	8	1	14	13	15	15

III. Change Record

Issue	Date	Changes
Issue 01	18 July 2008	Initial Issue
Issue 02	24 April 2009	--------
Issue 03	20 July 2009	--------
Issue 04	07 February 2011	--------
Issue 05	04 July 2012	--------
Issue 06	23 April 2013	--------
Issue 07	01 Sept 2015	New model F-35 “R4TS”
Issue 08	09 June 2017	New model F-36 “PXMART”
Issue 09	12 July 2017	New model F-37 “BADGE”
Issue 10	05 April 2019	New basket-envelope combinations for F-7, F-11, F-16, F-19, F-21, F-24, F-25 and F-26 models.
Issue 11	10 July 2020	New models F-38 “HELMET” & F-40 “HEAD”
Issue 12	17 Dec 2020	New model F-39 “HEART-XL”
Issue 13	18 April 2023	New models F-41 “EINSTEIN” & F-43 “MAZU”
Issue 14	22 Jan 2024	New model F-44 “DRUM”
Issue 15	11 March 2024	New basket-envelope combination for CV-06 Basket

-END-