

European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

ULTRAMAGIC HOT AIR BALLOONS

Manned Free Hot Air Balloons

Type Certificate Holder: **ULTRAMAGIC, S.A.**
Aerodrom Igualada-Odena s/n
08711 ODENA
Spain

Manufacturer: **ULTRAMAGIC, S.A.**
Aerodrom Igualada-Odena s/n
08711 ODENA
Spain

For Variants: H Series
S Series
T Series
V Series
M Series
N Series
Z Series

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III. COMMON DATA TO ALL MODELS

Equipment:	<p>for FAR Part 31:</p> <ul style="list-style-type: none">- 1 Altimeter- 1 Rate of climb/descent indicator (variometer)- 1 Remaining fuel quantity gauge for each fuel cell <p>for CS 31HB (draft February 2007) in addition:</p> <ul style="list-style-type: none">- 1 Fuel pressure gauge for each burner <p>for CS 31HB, February 2009, and CS 31HB/1, December 2011 in addition:</p> <ul style="list-style-type: none">- 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' of tethering components, if the balloon is specifically approved for tethered operations <p>for all balloons:</p> <ul style="list-style-type: none">- Alternative means for burner ignition (lighter or similar)- 1 Envelope limit temperature indicator- Fire extinguisher- Flight Manual, EASA approved <p>Additional operational equipment may be required by national legislation</p>
Fuel:	<p>Commercial LPG, usually propane, except if burner is configured for butane</p>
Minimum crew:	<p>1 pilot</p>
Compatibility with approved parts of other manufacturers:	<p>See approved Supplements to Ultramagic Flight Manual. Only listed approved configurations shall be used. The latest Service Instructions of the other manufacturer's parts shall be used for maintenance</p>
Maintenance schedule:	<p>Annual or 100 hours inspections, whichever applies earlier one and following the Flight Manual and Maintenance Manual corresponding to the specific balloon configuration</p>
Operation and Service Instructions:	<p>Flight Manual for Ultramagic Balloons and applicable Supplements – or later approved revisions</p> <p>Maintenance Manual for Ultramagic Balloons and applicable Supplements - or later accepted revisions</p> <p>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 inspection schedule - Maintenance Manual for Ultramagic Balloons and applicable Supplements or later EASA accepted revision refers</p>

SECTION 2 : SERIES H

Former DGAC-ES Type Certificate Data Sheet reference: 03

2.1. General

Model	H-31	H-42	H-56	H-65	H-77
Approved	18 Feb 2000	1 Oct 1992	15 Oct 1987	1 Mar 1985	1 Mar 1985
Technical Description					
Volume [m ³]	900	1200	1590	1840	2190
Number of gores	12	12	12	12	12
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	12.5	13.8	15.5	16.3	17.3
Total height [m]	16.2	17.3	19.0	19.9	21.0
MTOM [kg]	307	416	549	638	756
Drawing number	1012	1035	1007	1003	1002
Serial numbers eligible	31-01 & up	42-01 & up	56-01 & up	65-01 & up	77-01 & up
Fuel cylinder quantity					
Worthington 4100-U4-27	1	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	1	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	1	2 or more	2 or more	2 or more	2 or more
UM Type T-25	1	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	1	2 or more	2 or more	2 or more	2 or more
Notes on 2.3	1)* & 2)*, 3)*	1)*, 3)*	1)*, 3)*	3)*	3)*

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

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

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

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

2.2. Burners and Baskets for H models

BURNER								
Model	MK-1	MK-2/SUPER		MK-10		MK-21		MK-21/ELEC
Units	double	single	double	single	double	single	double	option
Drawing	2001	2003/2005	2002/2006	2011	2012	2021	2022	2022/0100-0000-0200
H-31		X		X		X		
H-42		X		X		X		
H-56		X	X	X	X	X	X	X
H-65	X	X	X	X	X	X	X	X
H-77	X	X	X	X	X	X	X	X

BURNER (contd.)		
Model	BMK-008	
Units	single	double
Drawing	2031	2032
H-31	X	
H-42	X	
H-56	X	X
H-65	X	X
H-77	X	X

BASKET								
Model	C0	CT-01 (see Sec. 9, Note 3)	CT-02 (see Sec. 9, Notes 4, 5)	C1	C2	C3	C4	C10
Size [m]	0.7x0.8	0.8x1.0	1.0x1.2	1.0x1.2	1.0x1.0	1.1x1.3	1.2x1.6	1.15x1.45
Drawing	3000	3200	3202	3001	3002	3003	3004	3010
H-31	307	307	----	----	307	----	----	----
H-42	373	416	416	416	416	----	----	----
H-56	399	527	549	549	549	----	----	----
H-65	----	536	638	638	638	638	----	638
H-77	----	540	756	756	756	756	756	756
* Compatibility and maximum mass in [kg]								

BOTTOM ENDS		
Model	SOLO	DUO
Size	----	-----
Drawing	5001	5002
H-31	300	300
H-42	300	400
H-56	----	450
H-65	----	-----
H-77	----	-----
* Compatibility and maximum mass in [kg]		

2.3 Notes

1)*

Fuel cylinder quantity	H-31	H-42	H-56
With DUO	2	2	2
With SOLO	1	1	---
For all approved cylinders			

2)* Approved optional modifications (exclusively for Model H-31)

Basket Cameron/Thunder&Colt with burner incorporated, model SKYCHARIOT according drawing SC2-002 for basket and drawing CB8711 for the burner.

Maximum Weight: 250 kg, or that one permitting the flight with the continuous temperature lower than 120°C, whatever is less.
See Load Chart in Flight Manual Chap. 5.

Basket Cameron/Thunder&Colt with burner incorporated, Model CLOUDHOPPER MILLENIUM according drawing CB8320 for basket and drawings n° CB8327 and CB8337 for the burner.

Maximum Weight: 250 kg, or that one permitting the flight with the continuous temperature lower than 120°C, whatever is less.
See Load Chart in Flight Manual Chap. 5.

3)*

External mounting of fuel cylinders approved for basket model CT-01 if equipped with an MK-21 single, a Single MK-21/Elec (not for H-31 and H-42) or a Single BMK-008 burner and with one of these fuel cylinders combinations (see Flight Manual Supplement No. 39, Issue 2 or later):
two Worthington 4100-U4-27, two UM Type M-20/M-20D, two UM Type M-30/M-30D, four Worthington 4100-U4-27, four UM Type M-20/M-20D, four UM Type M-30/M-30D, two Worthington 4100-U4-27 plus two UM Type M-20/M-20D, two Worthington 4100-U4-27 plus two UM Type M-30/M-30D, two UM Type M-20/M-20D plus two UM Type M-30/M-30D.

SECTION 3 : SERIES S

Former DGAC Spain Type Certificate Data Sheet reference: 18

3.1. General

Model	S-50	S-70	S-90	S-105	S-130	S-160
Approved	5 Feb 2010	25 Feb 2013	22 Dec 1988	15 Oct 1987	3 Jul 1989	16 Jan 1992
Technical Description						
Volume [m ³]	1 415	1 982	2 550	2 950	3 680	4 550
Number of gores	16	16	16	16	16	16
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	14.7	16.2	18.1	19.1	20.6	22.1
Total height [m]	18.3	15.8	21.9	22.9	24.5	26.2
MTOM [kg]	500	650	878	1 032	1 365	1 569
Drawing number	1062	1063	1013	1014	1015	1016
Serial numbers eligible	50-01 & up	70-01 & up	90-01 & up	105-01 & up	130-01 & up	160-01 & 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
Notes on 3.3	1)*	1)*				

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

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

Burner: See § 3.2 : Burners and Baskets for S models

Basket: See § 3.2 : Burners and Baskets for S models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 3.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

3.2. Burners and Baskets for S models

BURNER								
Model	MK-2/SUPER		MK-10		MK-21			MK-21/ELEC
Units	double	triple	double	triple	single	double	triple	option
Drawing	2002/2006	2004/2007	2012	2013	2021	2022	2023	2022/0100-0000-0200
S-50	----	----	----	----	X	----	----	----
S-70	----	----	----	----	X	X	----	----
S-90	X		X		X	X		X
S-105	X	X	X	X	X	X	X	X
S-130	X	X	X	X		X	X	X
S-160	X	X	X	X		X	X	X

BURNER (contd.)		
Model	BMK-008	
Units	single	double
Drawing	2031	2032
S-50	X	----
S-70	X	X
S-90	X	X
S-105	X	X
S-130	----	X
S-160	----	X

BASKET							
Model	C0	CT-01 (see Sec. 9, Notes 3), 5)	CT-02 (see Sec. 9, Notes 4), 5)	C1	C2	C3	C4
Size [m]	0.7x0.8	0.8x1.0	1.0x1.2	1.0x1.2 m	1.0x1.0	1.1x1.3	1.2x1.6
Drawing	3000	3200	3202	3001	3002	3003	3004
S-50	372	500	500	500	500	----	----
S-70	385	515	650	650	650	----	----
S-90	----	----	768	878	878	878	878
S-105	----	----	777	1 032	----	1 032	1 032
S-130	----	----	----	1 235	----	1 365	1 365
S-160	----	----	----	----	----	----	1 569

* Compatibility and maximum mass in [kg]

BASKET					BOTTOM END
Model	C5	C6	C7	C10	DUO
Size [m]	1.4x2.2	1.3x1.8	1.4x2.0	1.15x1.45	-----
Drawing	3005	3006	3007	3010	5002
S-50	----	----	----	878	450
S-70	----	----	----	----	450
S-90	----	----	----	878	----
S-105	----	----	----	1 032	----
S-130	1 365	1 321	1 365	1 205	----
S-160	1 569	1 333	1 569	1 227	----

* Compatibility and maximum mass in [kg]

3.3 Notes

1) *

Fuel cylinder quantity	S-50	S-70
With DUO	2	2
For all approved cylinders		

2)* (moved – see Sec. 9, Notes 3), 5))

SECTION 4 : SERIES T

Former DGAC Spain Type Certificate Data Sheet reference: 247

4.1. General

Model	T-150	T-180	T-210
Approved	15 Jan 2003	14 Feb 2002	15 Oct 2002
Technical Description			
Volume [m ³]	4 245	5 100	6 000
Number of gores	20	20	20
Disposition	horizontal	horizontal	horizontal
Max diameter [m]	20.9	22.2	24.3
Total height [m]	25.0	27.3	28.6
MTOM [kg]	1 465	1 754	2 070
Drawing number	1 059	1 045	1 046
Serial numbers eligible	150-01 & up	180-29 & up	210-20 & up
Fuel cylinder quantity			
Worthington 4100-U4-27	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
UM Type M-30 or M-30D	2 or more	2 or more	2 or more
UM Type T-25	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

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

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

Burner: See § 4.2 : Burners and Baskets for T models

Basket: See § 4.2 : Burners and Baskets for T models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 4.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

4.2. Burners and Baskets for T models

BURNER									
Model	MK-2 / SUPER			MK-10			MK-21		
Units	double	triple	quad	double	triple	quad	double	triple	quad
Drawing	2002/2006	2004/2007	2008	2012	2013	2014	2022	2023	2024
T-150	----	----	----	X	X	----	X	X	----
T-180	----	X	X	X	X	X	X	X	X
T-210	----	X	X	----	X	X	X	X	X

BURNER (contd.)			
Model	MK-21 / ELEC	BMK-008	BMK-050
Units	option	double	double
Drawing	2022/0100-0000-0200	2032	2052
T-150	X	X	----
T-180	X	X	X
T-210	X	X	X

BASKET									
Model	C3	C4	C5	C6	C7	C8	C9	C10	C11
Size [m]	1.1x1.3	1.2x1.6	1.4x2.2	1.3x1.8	1.4x2.0	1.5x2.6	1.6x3.0	1.15x1.45	1.7x3.5
Drawing	3003	3004	3005	3006	3007	3008	3009	3010	3011
T-150	1 465	1 465	1 465	1 355	1 465	----	----	1 256	----
T-180	----	----	1 754	1 372	1 611	1 754	1 754	----	----
T-210	----	----	1 930	----	1 626	2 070	2 070	----	2 070
* Compatibility and maximum mass in [kg]									

SECTION 5 : SERIES V

Former DGAC Spain Type Certificate Data Sheet reference: 03 (models V-65, V-77)
Former DGAC Spain Type Certificate Data Sheet reference: 04 (models V-56, V-90, V-105)

5.1. General

Model	V-25	V-56	V-65	V-77	V-90	V-105
Approved	12 May 2006	15 Sep 1989	1 Mar 1985	1 Mar 1985	15 Oct 1989	25 Jun 1989
Technical Description						
Volume [m ³]	708	1 650	1 840	2 190	2 550	2 950
Number of gores	24	24	24	24/32	24	24
Disposition	vertical	vertical	vertical	vertical	vertical	vertical
Max diameter [m]	11.5	15.2	16.0	17.0/16.6	17.9	18.8
Total height [m]	14.6	19.0	19.9	20.9/21.0	21.9	22.9
MTOM [kg]	250	549	638	756	878	1 032
Drawing number	1060/010	1008	1004	1001/1017	1018	1019
Serial numbers eligible	25-01 & up	56-01 & up	65-01 & up	77-04 & up	90-01 & up	105-10 & up
Fuel cylinder quantity						
Worthington 4100-U4-27	1	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-20 or M-20D	1	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-30 or M-30D	1	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type T-25	1	2 or more	2 or more	2 or more	2 or more	2 or more
UM Type M-40 or M-40D	1	2 or more	2 or more	2 or more	2 or more	2 or more
Notes on 5.3	1)*	2)*	1)*, 2)*	2)*		

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

Burner: See § 5.2 : Burners and Baskets for V models

Basket: See § 5.2 : Burners and Baskets for V models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 5.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

5.2. Burners and Baskets for V models

BURNER										
Model	MK-1	MK-2 / SUPER			MK-10			MK-21		
Units	double	single	double	triple	single	double	triple	single	double	triple
Drawing	2001	2003/2005	2002/2006	2004/2007	2011	2012	2013	2021	2022	2023
V-25	----	----	----	----	----	----	----	X	----	----
V-56	----	X	X	----	X	X	----	X	X	----
V-65	X	X	X	----	X	X	----	X	X	----
V-77	X	X	X	----	X	X	----	X	X	----
V-90	----	----	X	----	----	X	----	--	X	----
V-105	----	----	X	X	----	X	X	--	X	X

BURNER (contd.)			
Model	MK-21 / ELEC	BMK-008	
Units	option	single	double
Drawing	2022/0100-0000-0200	2031	2032
V-25	X	X	----
V-56	X	X	X
V-65	X	X	X
V-77	X	X	X
V-90	X	X	X
V-105	X	X	X

BASKET							
Model	C0	CT-01 (see Sec. 9, Notes 3), 5)	CT-02 (see Sec. 9, Notes 4), 5)	C1	C2	C3	C4
Size [m]	0.7x0.8	0.8x1.0	1.0x1.2	1.0x1.2	1.0x1.0	1.1x1.3	1.2x1.6
Drawing	3000	3200	3202	3001	3002	3003	3004
V-25	----	----	----	----	----	----	----
V-56	402	530	549	549	549	----	----
V-65	----	536	638	638	638	638	----
V-77	----	540	756	756	756	756	756
V-90	----	----	770	878	878	878	----
V-105	----	----	782	1 032	----	1 032	----
* Compatibility and maximum mass in [kg]							

BOTTOM END				
Model	C4	C10	SOLO	DUO
Size	1.2x1.6	1.15x1.45	-----	-----
Drawing	3004	3010	5001	5002
V-25	----	----	250	----
V-56	----	----	----	450
V-65	----	638	----	----
V-77	----	756	----	----
V-90	878	878	----	----
V-105	1 032	1 032	----	----
* Compatibility and maximum mass in [kg]				

5.3 Notes

1) *

Fuel cylinder quantity	V-25	V-56
With DUO	----	2
With SOLO	1	----
For all approved cylinders		

2)* (moved – see Sec. 9, Notes 3), 5))

SECTION 6 : SERIES M

Former DGAC Spain Type Certificate Data Sheet reference: 03

6.1. General

Model	M-42	M-56	M-56C	M-65	M-65C	M-77	M-77C
Approved	22 Apr 2003	6 Feb 1998	8 Jul 1999	25 Mar 1988	4 Mar 1997	25 Mar 1988	30 Apr 2001
Technical Description							
Volume [m ³]	1 200	1 590	1 590	1 840	1 840	2 200	2 200
Number of gores	24	24	24	24	24	24	24
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	13.6	14.9	13.8	16.0	14.7	16.9	15.5
Total height [m]	17.5	18.8	17.3	19.8	21.3	21.0	24.0
MTOM [kg]	414	550	550	638	635	756	756
Drawing number	1038/010	1034	1056	1020	1054	1009	1057
Serial numbers eligible	42-08 & up	56-14 & up	56-15 & up	65-19 & up	65-63 & up	77-17 & up	77-190 & 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	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	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	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	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	2 or more
Notes on 6.3	1)*, 2)*	1)*, 2)*	2)*	2)*	2)*	2)*	2)*

Model	M-90	M-105	M-120	M-130	M-145	M-160
Approved	4 Mar 1997	10 Jun 1988	23 Feb 1999	30 Nov 1994	21 Feb 1995	15 Oct 1987
Technical Description						
Volume [m ³]	2 550	2 950	3 400	3 680	4 105	4 550
Number of gores	24	24	24	24	24	24
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	17.4	18.8	19.2	20.2	20.4	21.6
Total height [m]	21.6	23.1	23.4	24.6	24.7	26.3
MTOM [kg]	880	1 032	1 173	1 365	1 436	1 569
Drawing number	1040	1010	1055	1021	1036	1011
Serial numbers eligible	90-15 & up	105-03 & up	120-01 & up	130-05 & up	145-01 & up	160-01 & 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 and limited inflated artwork as required.

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

Burner: See § 6.2 : Burners and Baskets for M models

Basket: See § 6.2 : Burners and Baskets for M models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 6.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

6.2. Burners and Baskets for M models

BURNER									
Model	MK-2 / SUPER			MK-10			MK-21		
Units	single	double	triple	single	double	triple	single	double	triple
Drawing	2003/2005	2002/2006	2004/2007	2011	2012	2013	2021	2022	2023
M-42	----	----	----	X	----	----	X	----	----
M-56	X	X	----	X	X	----	X	X	----
M-56C	X	X	----	X	X	----	X	X	----
M-65	X	X	----	X	X	----	X	X	----
M-65C	X	X	----	X	X	----	X	X	----
M-77	X	X	----	X	X	----	X	X	----
M-77C	X	X	----	X	X	----	X	X	----
M-90	----	X	----	----	X	----	X	X	----
M-105	----	X	X	----	X	X	X	X	X
M-120	----	X	X	----	X	X	----	X	X
M-130	----	X	X	----	X	X	----	X	X
M-145	----	X	X	----	X	X	----	X	X
M-160	----	X	X	----	X	X	----	X	X

BURNER (contd.)			
Model	MK-21 / ELEC	BMK-008	
Drawing	2022/0100-0000-0200	2031	2032
M-42	----	X	----
M-56	X	X	X
M-56C	X	X	X
M-65	X	X	X
M-65C	X	X	X
M-77	X	X	X
M-77C	X	X	X
M-90		X	X
M-105	X	X	X
M-120	X	X	X
M-130	X	----	X
M-145	X	----	X
M-160	X	----	X

BASKET									
Model	C0	CT-01 (see Sec. 9, Note 3)	CT-02 (see Sec. 9, Notes 4), 5)	C1	C2	C3	C4	C5	C6
Size [m]	0.7x0.8	0.8x1.0	1.0x1.2	1.0x1.2	1.0x1.0	1.1x1.3	1.2x1.6	1.4x2.2	1.3x1.8
Drawing	3000	3200	3202	3001	3002	3003	3004	3005	3006
M-42	382	414	414	414	414	----	----	----	----
M-56	399	527	550	550	550	----	----	----	----
M-56C	399	531	550	550	550	----	----	----	----
M-65	----	537	638	638	638	638	638	----	----
M-65C	----	541	635	638	638	638	638	----	----
M-77	----	539	756	756	756	756	756	----	----
M-77C	----	545	756	756	756	756	756	----	----
M-90	----	----	772	878	878	878	878	----	----
M-105	----	----	784	1 032	----	1 032	1 032	----	----
M-120	----	----	----	1 173	----	1 173	1 173	1 173	1 173
M-130	----	----	----	1 235	----	1 365	1 365	1 365	1 321
M-145	----	----	----	----	----	1 436	1 436	1 436	1 333
M-160	----	----	----	----	----	----	1 569	1 569	1 346

* Compatibility and maximum mass [kg]

BOTTOM END				
Model	C7	C10	SOLO	DUO
Size	1.4x2.0	1.15x1.45	----	-----
Drawing	3007	3010	5001	5002
M-42	----	----	300	400
M-56	----	----	----	450
M-56C	----	----	----	----
M-65	----	638	----	----
M-65C	----	638	----	----
M-77	----	756	----	----
M-77C	----	756	----	----
M-90	----	878	----	----
M-105	----	1 032	----	----
M-120	1 173	1 173	----	----
M-130	1 365	1 205	----	----
M-145	1 311	1 227	----	----
M-160	1 569	1 240	----	----
* Compatibility and maximum mass [kg]				

6.3. Notes

1) *

Fuel cylinder quantity	M-42	M-56
With DUO	2	2
With SOLO	1	----
For all approved cylinders		

2)* (moved – see Sec. 9, Notes 3), 5))

SECTION 7 : SERIES N

Former DGAC Spain Type Certificate Data Sheet reference: 61

7.1. General

Model	N-180	N-210	N-250	N-300	N-355	N-425	N-500
Approved	26 Sep 1991	31 Oct 1991	22 Jun 1992	30 Apr 1998	10 Jun 1997	30 Apr 2001	16 Jun 2009
Technical Description							
Volume [m ³]	5 100	6 000	7 000	8 500	10 000	12 000	14 415
Number of gores	28	28	28	28	28	28	32
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	22.5	23.8	24.9	26.6	27.5	29.5	31.1
Total height [m]	27.3	28.9	30.3	32.4	33.3	35.5	36.2
MTOM [kg]	1 754	2 064	2 408	2 924	3 450	4 140	5 000
Drawing number	1031	1032	1033	1034	1053	1058	1061
Serial numbers eligible	180-01 & up	210-01 & up	250-01 & up	300-01 & up	355-01 & up	425-01 & up	500-01 & up
Fuel cylinder quantity							
Worthington 4100-U4-27	2 or more	2 or more	3 or more	3 or more	4 or more	4 or more	4 or more
UM Type M-20 or M-20D	2 or more	2 or more	3 or more	3 or more	4 or more	4 or more	4 or more
UM Type M-30 or M-30D	2 or more	2 or more	3 or more	3 or more	4 or more	4 or more	4 or more
UM Type T-25	2 or more	2 or more	3 or more	3 or more	4 or more	4 or more	4 or more
UM Type M-40 or M-40D	2 or more	2 or more	3 or more	3 or more	4 or more	4 or more	4 or more

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

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

Burner: See § 7.2 : Burners and Baskets for N models

Basket: See § 7.2 : Burners and Baskets for N models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 7.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

7.2. Burners and Baskets for N models

BURNER									
Model	MK-2 / SUPER		MK-10			MK-21			MK-21 / ELEC
Units	triple	quad	double	triple	quad	double	triple	quad	option
Drawing	2004/2007	2005/2008	2012	2013	2014	2022	2023	2024	2022/0100-0000-0200
N-180	X	X	X	X	X	X	X	X	X
N-210	X	X	----	X	X	X	X	X	X
N-250	----	X	----	----	X	----	X	X	X
N-300	----	X	----	----	X	----	X	X	X
N-355	----	X	----	----	X	----	----	X	X
N-425	----	X	----	----	X	----	----	X	X
N-500	----	----	----	----	----	----	----	X	X

BURNER (contd.)				
Model	BMK-008	BMK-050		
Units	double	double	triple	quad
Drawing	2032	2052	2053	2054
N-180	X	X	----	----
N-210	X	X	----	----
N-250	----	X	X	----
N-300	----	X	X	----
N-355	----	----	X	X
N-425	----	----	X	X
N-500	----	----	----	X

BASKET								
Model	C5	C6	C7	C8	C9	C11	C12	C14
Size [m]	1.4x2.2	1.3x1.8	1.4x2.0	1.5x2.6	1.6x3.0	1.7x3.5	1.7x4.5	1.7x5.2
Drawing	3005	3006	3007	3008	3009	3011	3012	3014
N-180	1 745	1 368	1 607	1 754	1 754	----	----	----
N-210	1 936	----	1 632	2 064	2 064	2 064	----	----
N-250	1 959	----	----	2 199	2 408	2 408	----	----
N-300	1 986	----	----	2 226	2 680	2 924	2 924	----
N-355	2 010	----	----	2 250	2 704	3 216	3 450	----
N-425	2 010	----	----	2 250	2 814	3 332	3 712	4 140
N-500	----	----	----	----	----	----	3 813	5 000

* Compatibility and maximum mass in [kg]

SECTION 8 : SERIES Z

Former DGAC Spain Type Certificate Data Sheet reference: 147

8.1. General

Model	Z-90
Approved	23 Jan 1996
Technical Description	
Volume [m ³]	2 550
Number of gores	16
Disposition	diagonal
Max diameter [m]	18.2
Total height [m]	22.7
MTOM [kg]	894
Drawing number	1025
Serial numbers eligible	90-14 & up
Fuel cylinder quantity	
Worthington 4100-U4-27	2 or more
UM Type M-20 or M-20D	2 or more
UM Type M-30 or M-30D	2 or more
UM Type T-25	2 or more
UM Type M-40 or M-40D	2 or more

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

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

Burner: See § 8.2 : Burners and Baskets for Z models

Basket: See § 8.2 : Burners and Baskets for Z models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 8.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

8.2. Burners and Baskets for Z model

BURNER							
Model	MK-2 / SUPER	MK-10	MK-21		MK-21 / ELEC	BMK-008	
Units	double	double	single	double	option	single	double
Drawing	2002/2006	2012	2021	2022	2022/0100-0000-0200	2031	2032
Z-90	X	X	X	X	X	X	X

BASKET						
Model	C1	CT-02 <small>(see Sec. 9, Notes 4), 5)</small>	C2	C3	C4	C10
Size [m]	1.0x1.2	1.0x1.2	1.0x1.0	1.1x1.3	1.2x1.6	1.15x1.45
Drawing	3001	3202	3002	3003	3004	3010
Z-90	878	768	878	878	878	878
* Compatibility and maximum mass in [kg]						

SECTION 9 : 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	Data Sheets corresponding to former DGAC-ES TCs have been modified to include: <ul style="list-style-type: none">- Optional Electric Burner MK-21- Models SOLO and DUO, chair type gondola- New format of Data Sheet- Comprising exclusively standard envelope shapes
Note 3	Additional compatibility information: Basket CT-01 is approved for flight using the following burners: <ul style="list-style-type: none">- MK-21 Single (or MK-21/ELEC single)- BMK-008 Single
Note 4	Additional compatibility information: Basket CT-02 is approved for flight using the following burners: <ul style="list-style-type: none">- MK-21 Single- MK-21 Double- BMK-008 Single- BMK-008 Double
Note 5	Additional compatibility information: Baskets CT-01 and CT-02 are approved for flight using external mounting of fuel cylinders with one of these fuel cylinders combinations (see Flight Manual Supplement No. 39, Issue 4 or later approved revision): two Worthington 4100-U4-27, two UM Type M-20/M-20D, two UM Type M-30/M-30D, four Worthington 4100-U4-27, four UM Type M-20/M-20D, four UM Type M-30/M-30D, two Worthington 4100-U4-27 plus two UM Type M-20/M-20D, two Worthington 4100-U4-27 plus two UM Type M-30/M-30D, two UM Type M-20/M-20D plus two UM Type M-30/M-30D.

* * *