




# INSPECTION REPORT

## PARAGLIDERS RESCUE SYSTEMS | EMERGENCY PARACHUTE

Inspection report number: **EP\_133.2015**

### SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative: **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Model name: **Fluffy**  
 Model size: **110**  
 Manufacturer max load [kg]: **110**  
 Manufacturers serial number flight (EP1, EP2, EP4, EP6) : **flu-0010415**  
 Manufacturers serial number load (EP3, EP5) : **flu-0020415**  
 Date of reception: **22.05.2015**  
 Date of reception: **22.05.2015**  
 Date of issue: **29.09.2015**  
 Place of declaration: **Villeneuve**  
 Director management : **Alain Zoller**  
 Signature: 

Air Turquoise SA, having thoroughly assessed the sample mentioned hereunder, declare it was found conform with all requirements defined by the following directives:

**EN 12491 | 2001 and LTF NFL II 91/09 chapter 6 Paraglider rescue systems**  
LTF Ref chapter: 6.1.1 to 6.1.19, exclusion 6.1.10

Present declaration's scope only extends to the conformity of a given sample, on a given date and in a given place – as mentioned here above.

This inspection report contain the following test and is complet with the test report number EP1 to EP6

TESTS	RESULTS	INSPECTORS	PLACES	DATES
<b>1. Deployment system strength test (inner container)</b>				
Minimum 700 N strength required during min 10 [s]:	<b>POSITIVE</b>	AZ	Villeneuve	23.02.2015
<b>2. Descent rate and stability test - ref. A and B</b>				
Sink rate EN standard	<b>POSITIVE</b>	AZ	Villeneuve	15.07.2015
Sink rate LTF standard	<b>POSITIVE</b>	AZ	Villeneuve	15.07.2015
Speed opening	<b>POSITIVE</b>	AZ	Villeneuve	15.07.2015
Stability	<b>POSITIVE</b>	AZ	Villeneuve	15.07.2015
<b>3. Strength test opening shock</b>				
Test 1   40 [m/s]	<b>POSITIVE</b>	AZ	Illarsaz	26.06.2015
Test 2   40 [m/s]	<b>POSITIVE</b>	AZ	Illarsaz	26.06.2015
Test 3   40 [m/s]	<b>POSITIVE</b>	AZ	Illarsaz	12.08.2015
<b>4. Interaction and stability test (piloted) - ref. C</b>				
the emergency parachute is deployed from a paraglider in normal straight flight.	<b>N/A</b>	n/a	n/a	x
the pilot shall take no action while the behaviour of the parachute and paraglider are observed 200 metres.	<b>N/A</b>	n/a	n/a	x
the pilot take action while the behaviour of the parachute and paraglider are observed 200 metres.	<b>N/A</b>	n/a	n/a	x
<b>5. Connecting strap</b>				
Minimum load capacity of 2400 [daN]	<b>POSITIVE</b>	AZ	Villeneuve	23.02.2015
<b>6. Measurement</b>				
According to manufacturer user manual	<b>POSITIVE</b>	AZ	Villeneuve	08.07..2015

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## Deployment system strength

EP PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 1

Test report number: EP\_133.2015

#### SAMPLE DATA

Manufacturer name: Vital Parachute Inc.  
 Representative: Mr. Sujan Shakya  
 Street: 4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin  
 Post code / place: Seoul 143-848  
 Country: Korea Republic  
 Rescue systems manufacturers name: Fluffy  
 Rescue systems manufacturers Size: 110  
 Rescue systems manufacturers max load (kg): 110  
 Manufacturers serial number flight : flu-0010415  
 Date of sample received: 22.05.2015  
 Place of test: Villeneuve  
 Date of test: 23.02.2015  
 Directive: EN 12491 | 2001 chapter 5.3.2 and LTF 91/09 chapter 6  
 Inspector: Alain Zoller  
 Results: POSITIVE

Signature:



#### ATMOSPHERE AGL

[C°] 21.6  
 RH [%] 35  
 [hPa] 1037.2

The deployment system is loaded at min 700 [N] during 10 secondes min. The deployment system is loaded until breaking. Each component is tested.

#### RESULTS

Minimum strength required during min 10s [kN]: 700.00  
 Strength of 700 N duration each components no1 [s]: 1 24.46  
 Strength of 700 N duration each components no2 [s]: 2 19.8  
 Strength of 700 N duration each components no3 [s]: 3 N/A  
 Uncertainty 95% [kN]: 0.017  
 INSPECTION RESULTS MINIMUM Time [s]: 19.8  
 Max strength components [kN]:  
 Max strength components no1 [kN]: 1 2.622  
 Max strength components no2 [kN]: 2 1.807  
 Max strength components no3 [kN]: 3 N/A  
 Uncertainty 95% [kN]: 0.017  
 Max strength [kN]: 1.807

# Deployment system strength

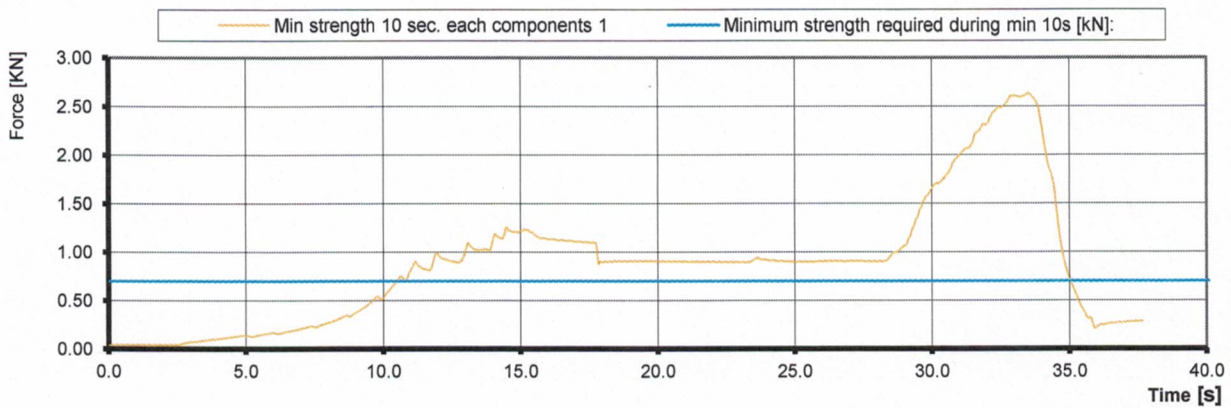
PARAGLIDERS RESCUE SYSTEMS

## TEST REPORT EP 1

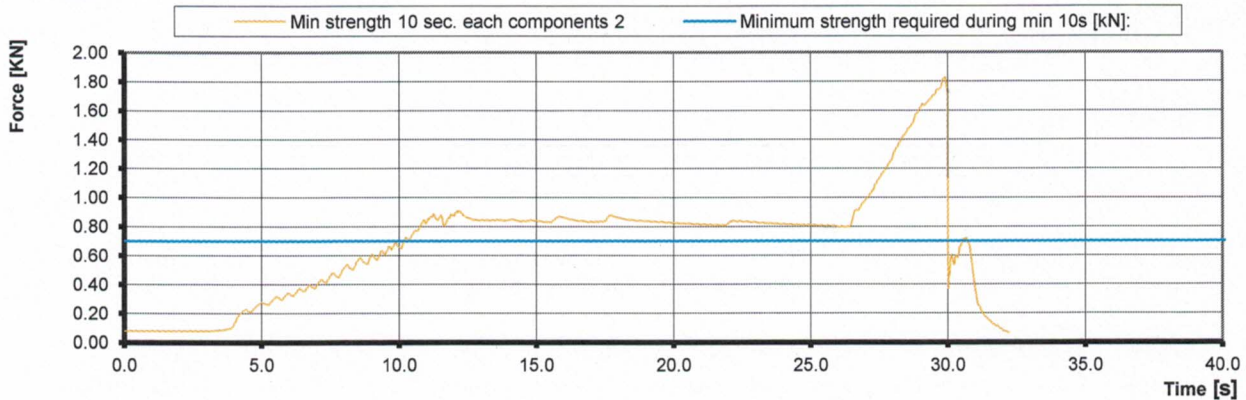
Test report number: EP\_133.2015

Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Deployment system strength test	Load Cell (axial)	11.06.2016	Burster / MTS	8431-10000	1185483
Deployment system strength test	USB interface	11.06.2016	Burster / MTS	9205-V001	10000469
Deployment system strength test	Winch	06.01.2017	Arwin	300/600	n/a
Weather	Geos n° 11 Skywat	08.05.2017	JDC elec.	Geos n° 11	22

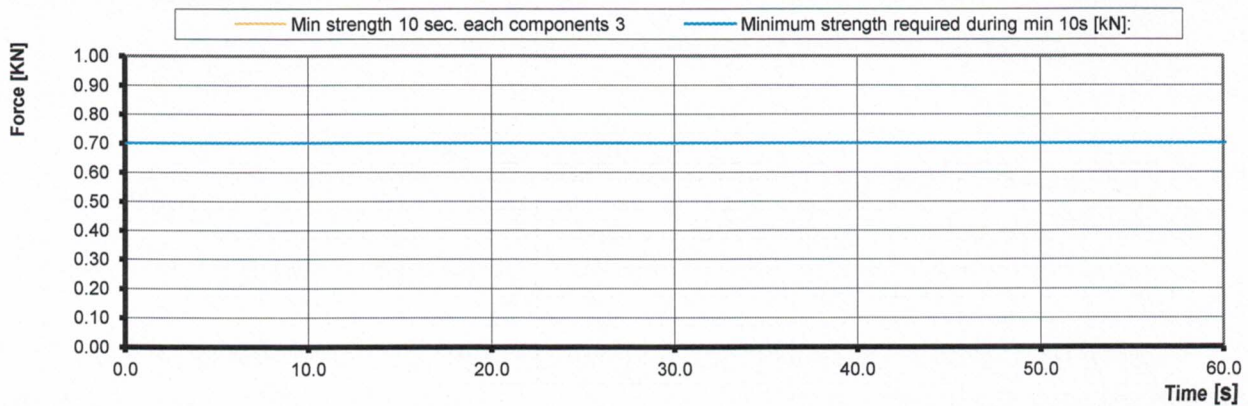
### Min strength 10 sec. each components 1



### Min strength 10 sec. each components 2



### Min strength 10 sec. each components 3




## Descent rate and stability test - ref. A and B

EP PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 2

 Test report number: **EP\_133.2015**

#### SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative: **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Rescue systems manufacturers name: **Fluffy**  
 Rescue systems manufacturers Size: **110**  
 Rescue systems manufacturers max load [kg]: **110**  
 Manufacturers serial number flight : **flu-0010415**  
 Date of sample received: **22.05.2015**  
 Place of test: **Villeneuve**  
 Date of test: **15.07.2015**  
 Directive: **EN 12491 | 2001 chapter 5.3.4 and 5.3.3 and LTF 91/09 chapter 6**  
 Inspector: **Alain Zoller**  
 Signature: 

ATMOSPHERE AGL	Test no1	ATMOSPHERE AGL	Test no2
[C°]	<b>16</b>	[C°]	<b>24</b>
RH [%]	<b>75</b>	RH [%]	<b>61</b>
[hPa]	<b>976.7</b>	[hPa]	<b>976</b>
Wind [m/s]	<b>0.2</b>	Wind [m/s]	<b>0.2</b>

The rescue system is dropped from a paraglider in straight flight at 8 [m/s] +-1 [m/s]. The paraglider is released as the rescue system begins to open, minimum 100 [m] descent. Wink link 200 [N] is used to measure the speed opening.

RESULTS	EN	LTF
Sink rate results:	<b>POSITIVE</b>	<b>POSITIVE</b>
Stability results:	<b>POSITIVE</b>	<b>POSITIVE</b>
Speed opening results:	<b>POSITIVE</b>	<b>POSITIVE</b>
Max sink rate test requirements [m/s]	<b>5.50</b>	<b>6.80</b>
Sink rate test 1 [m/s]	<b>5.43</b>	<b>5.43</b>
Sink rate test 2 [m/s]	<b>4.47</b>	<b>4.47</b>
Behavior during descent		
Stability test 1	<b>1 Stable</b>	<b>Stable</b>
Stability test 2	<b>2 Stable</b>	<b>Stable</b>
Requirement time from the instant of free drop until a load of 200 [N] is sustained [s]	<b>5.00</b>	<b>5.00</b>
Speed opening test 1 [s]	<b>3.03</b>	<b>3.03</b>
Speed opening test 2 [s]	<b>3.95</b>	<b>3.95</b>

Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Deployment system strength test	Weak links	2030	Tost	n/a	n/a
Descent rate and stability test	Line 30 meters	2020	Air Turquoise	n/a	n/a
Descent rate and stability test	Camecorder	2020	CANON	Legria HF G10	463440300907
Weather	Geos n° 11 Skywatch	08.05.2017	JDC elec.	Geos n° 11	22



## Descent rate and stability test - ref. A and B

PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 2

Test report number: EP\_133.2015

A. At horizontal airspeed 8 m/s and vertical speed 1.5 m/s

B. Formula to be used for correcting the test mass of differences from ICAO standard atmosphere

$$m_{corr} := m_{dec} \cdot \frac{p \cdot T_0}{p_0 \cdot T}$$

#### Sink rate test 1

Ground level atmospheric pressure at test location: (p)	976.7 [hPa]	RH [%]	75
ICAO standard atmospheric pressure at MSL: (po)	1013.25 [hPa]	Wind [m/s]	0.2
Ground level temperature at the test location: (T)	16 [C°]		
	289.15 [°K]		
ICAO standard temperature at MSL: (To)	15 [C°]		
	288.15 [°K]		
Total weight in flight: (mdec)	110 [kg]		
Corrected mass: (mcorr)	105.67 [kg]		
Corrected mass with uncertainty: (mcorr)	106.57 [kg]		
Time when pilot release rescue	9.6		
Time when weak link broke	12.48		
Speed opening (sec.):	3.03 [s]		
Time boil touch	12.28		
Time pilot touch	17.96		
Time between boil touch and pilot touch (30m)	5.53 [s]		
Sink rate:	5.4304 [m/s]		
Behaviour:	Stable		
Inspector:	AZ		
Date of test :	25.06.2015		

#### Sink rate test 2

Ground level atmospheric pressure at the test location: (p)	976 [hPa]	RH [%]	61
ICAO standard atmospheric pressure at MSL: (po)	1013.25 [hPa]	Wind [m/s]	0.2
Ground level temperature at the test location: (T)	24 [C°]		
	297.15 [°K]		
ICAO standard temperature at MSL: (To)	15 [C°]		
	288.15 [°K]		
Total weight in flight: (mdec)	110 [kg]		
Corrected mass: (mcorr)	102.75 [kg]		
Corrected mass with uncertainty: (mcorr)	103.65 [kg]		
Time when pilot release rescue	12.4		
Time when weak link broke	16.2		
Speed opening (sec.):	3.95 [s]		
Time boil touch	8.85		
Time pilot touch	15.72		
Time between boil touch and pilot touch (30m)	6.72 [s]		
Sink rate:	4.4688 [m/s]		
Behaviour:	Stable		
Inspector:	AZ		
Date of test :	15.07.2015		



## Descent rate and stability test - ref. A and B

PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 2

Test report number: EP\_133.2015

#### WINK LINKS 1

Picture



#### WINK LINKS 2

Picture





## Strength test opening shock

PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 3

Inspection report number: EP\_133.2015

#### TEST SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Rescue systems manufacturers name: **Fluffy**  
 Rescue systems manufacturers Size: **110**  
 Rescue systems manufacturers max load [kg]: **110**  
 Manufacturers serial number load : **flu-0020415**  
 Date of sample received: **22.05.2015**  
 Place of test: **Illarsaz**  
 Date of test: 1 | 2 | 3: **26.06.2015    26.06.2015    12.08.2015**  
 Directive: **EN 12491 | 2001 chapter 5.3.5 and LTF 91/09 chapter 6**  
 Inspector: **Alain Zoller**  
 Results: **POSITIVE**

Signature:

ATMOSPHERE AGL	Test no1	Test no2	Test no3
[C°]	22.4	22.4	28
RH [%]	57	57	76
[hPa]	980.8	980.8	979.5
Wind [m/s]	0.4	0.4	0.5

The drop test device is accelerated to a straight line velocity of 40 m/s. Speed of opening must be less than 5 seconds and shock not exceeded 15g.

#### RESULTS

##### Speed of opening in max 5 secondes

Speed of opening test 1 [s] **POSITIVE**  
 Speed of opening test 2 [s] **POSITIVE**  
 Speed of opening test 3 [s] **POSITIVE**  
 Uncertainty 95% [s] **0.15**

##### Sample statut after shock

Strength test 40 m/s opening shock 1 **POSITIVE**  
 Strength test 40 m/s opening shock 2 **POSITIVE**  
 Strength test 40 m/s opening shock 3 **POSITIVE**  
 Uncertainty 95% [m/s] **1.73**

##### Wink link statut after shock

Wink link test 1 **POSITIVE**  
 Wink link test 2 **POSITIVE**  
 Wink link test 3 **POSITIVE**  
 Uncertainty 95% [%] **10**



# Strength test opening shock

## PARAGLIDERS RESCUE SYSTEMS TEST REPORT EP 3

Test report number: EP\_133.2015

Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Strength test 41 m/s opening shock	Helicopter	Air-Glacier	Air-Glacier	Air-Glacier	Air-Glacier
Strength test 41 m/s opening shock	Weight	2017	Air Turquoise	n/a	n/a
Strength test 41 m/s opening shock	Wink links	2020	Tost	n/a	n/a
Strength test 41 m/s opening shock	Camecorder	2017	CANON	Legria HF G10	463440300907
Weather	Geos n° 11 Skywatch	08.05.2017	JDC elec.	Geos n° 11	22

### WINK LINKS 15g 1

Picture







## Interaction and stability test (piloted) - ref. C

EP PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 4

Test report number: **EP\_133.2015**

#### TEST SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative: **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Rescue systems manufacturers name: **Fluffy**  
 Rescue systems manufacturers Size: **110**  
 Rescue systems manufacturers max load (kg): **110**  
 Manufacturers serial number flight : **flu-0010415**  
 Date of sample received: **22.05.2015**  
 Place of test: **x**  
 Date of test: **x**  
 Directive: **EN 12491 | 2001 chapter 5.3.6 and LTF 91/09 chapter 6**  
 Inspector: **x**  
  
 Results: **N/A**

Signature:

ATMOSPHERE AGL	Test no1	ATMOSPHERE AGL	Test no2
[C°]	x	[C°]	x
RH [%]	x	RH [%]	x
[hPa]	x	[hPa]	x
Wind [m/s]	x	Wind [m/s]	x

#### TEST RESULTS

- a the emergency parachute is deployed from a paraglider in normal straight flight. N/A
- b the pilot shall take no action while the behaviour of the parachute and paraglider are observed 200 metres. N/A
- c the pilot take action while the behaviour of the parachute and paraglider are observed 200 metres. N/A



## Connecting strap

EP PARAGLIDERS RESCUE SYSTEMS

### TEST REPORT EP 5

Test report number: **EP\_133.2015**

#### TEST SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative: **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Rescue systems manufacturers name: **Fluffy**  
 Rescue systems manufacturers Size: **110**  
 Rescue systems manufacturers max load (kg): **110**  
 Manufacturers serial number load : **flu-0020415**  
 Date of sample received: **22.05.2015**  
 Place of test: **Villeneuve**  
 Date of test: **23.02.2015**  
 Directive: **LTF 91/09 chapter 6**  
 Inspector: **Alain Zoller**

Results: **POSITIVE**

Signature: 

#### ATMOSPHERE AGL

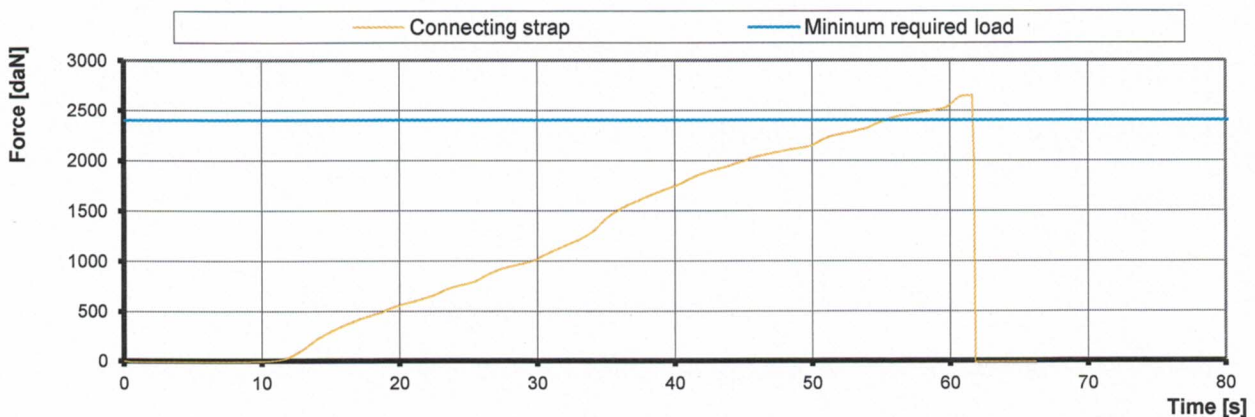
[C°] **21.1**  
 RH [%] **31**  
 [hPa] **1011.9**

The connecting strap is loaded at min 2400 [daN] and must not break.

#### RESULTS [daN]

Minimum required load **2400**  
 Load capacity 1 **2564**  
 Uncertainty 95% **42**  
 Max STRENGTH **2521.6**

#### GRAPHIQUE Connecting strap



Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Strap	Load Cell (axial)	11.06.20	Althen	SHK-D-3	20562
Atmosphere	Geos n° 11 Skywatch	08.05.20	JDC elec.	Geos n°	22



# Measurement 50 N

EP PARAGLIDERS RESCUE SYSTEMS

## MEASUREMENT REPORT EP 6

Teste report number: EP\_133.2015

### TEST SAMPLE DATA

Manufacturer name: **Vital Parachute Inc.**  
 Representative: **Mr. Sujan Shakya**  
 Street: **4th floor, Samjin bldg. / 696 Cheonho-daero, Gwnagjin**  
 Post code / place: **Seoul 143-848**  
 Country: **Korea Republic**  
 Rescue systems manufacturers name: **Fluffy**  
 Rescue systems manufacturers Size: **110**  
 Rescue systems manufacturers max load (kg): **110**  
 Manufacturers serial number flight : **flu-0010415**  
 Place of test: **Villeneuve**  
 Date of measurement: **08.07..2015**  
 Directive: **EN 12491 | 2001 chapter and LTF 91/09 chapter 6**  
 Inspector: **Alain Zoller**

According to manufacturer user manual **POSITIVE**

Signature:

### ATMOSPHERE AGL

[C°] **21.1**  
 RH [%] **47.7**  
 [hPa] **1009.3**

The rescue system lines are measured with 50[N] of tension. Center line and all types of mains lines are measured from attach point base until end of riser. Canopy dimensions are not measured. The rescue system is weighed with pod. Dimentions are compare with users manual.

### RESULTS

Center Line (average) [mm] **5025**  
 Main Line (average of 5 pcs) 1 [mm] **4745**  
 Main Line (average of 5 pcs) 2 [mm] **n/a**  
 Tolerance [mm] **25**  
 Number of center line : **1**  
 Number of lines: **16**  
 Weight [grame] **1230**

Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Line length measurements	laser distance meter	07.04.2017	Leica	DISTO D3a BT	911110352
Atmosphere	Geos n° 11 Skywatch	08.05.2017	JDC elec.	Geos n° 11	22