

## Suspension line calculation

Inspection certification number: **CCC\_026.2021** [kg] [daN]  
 Manufacturer name: **Flow Paragliders** Maximum weight: **95** **93.1**  
 Model name and size: **Spectra2 XS**  
 Report valid for the other sizes of model: **n/a**

### Line specification and line breaking strength after bending in [daN] (strongest to weakest value) <sup>(1)</sup>

|    | Manufacturer | Type no.  | Breaking strength [daN] |
|----|--------------|-----------|-------------------------|
| 1  | Edelrid      | 8000U-360 | 195.8                   |
| 2  | Edelrid      | 8000U-190 | 99.6                    |
| 3  | Edelrid      | 8000U-130 | 57.8                    |
| 4  | Edelrid      | 8000U-090 | 41.8                    |
| 5  | Edelrid      | 8000U-070 | 23.9                    |
| 6  | Edelrid      | 8000U-050 | 28                      |
| 7  | Edelrid      | 8000U-025 | 22.3                    |
| 8  | Liros        | PPSL-160  | 106.8                   |
| 9  |              |           |                         |
| 10 |              |           |                         |
| 11 |              |           |                         |
| 12 |              |           |                         |

| Line number                | Manufacturer | Type no. | Breaking strength [daN] |
|----------------------------|--------------|----------|-------------------------|
| Handle knot <sup>(2)</sup> | Edelrid      | 10N-200  | 109.1                   |

### Line breaking strength, theoretical calculation (see details on the following pages) <sup>(3)</sup>

|                                  |         | [daN]   | [g]   |
|----------------------------------|---------|---------|-------|
| Sum<br>A+B+C+D+<br>Stabilo lines | Level 1 | 1594.40 | 17.13 |
|                                  | Level 2 | 1327.20 | 14.26 |
|                                  | Level 3 | 1656.40 | 17.79 |
|                                  | Level 4 | 2546.40 | 27.35 |
|                                  | Level 5 | 2826.40 | 30.36 |

|                                     |         | [daN]  |
|-------------------------------------|---------|--------|
| Sum each<br>level of brake<br>lines | Level 1 | 218.20 |
|                                     | Level 2 | 199.20 |
|                                     | Level 3 | 168.00 |
|                                     | Level 4 | 267.60 |
|                                     | Level 5 | 579.80 |

A, B and C, the sum of each level must be equal or exceed 2300daN or 23g

Result **NEGATIVE**

The break lines strength sum of each level must be equal or exceed 150 [daN] and the handle knot shall have a minimum breaking strength of 75 [daN]

Result **POSITIVE**

Place of inspection:

Date of issue:

Inspector:

**Villeneuve**

**06.10.2021**

**Andrea Wigger**



The validation of this test report is given by the signature of the test manager on the inspection certificate 91.20

Air Turquoise SA has thoroughly tested the suspension line samples of the paraglider mentioned above, and calculated the overall strength. It certifies its conformity with the standards EN 926-1:2015 | NFL 2-565-20

**Detailed line strength calculation by level**

|    | Level 1 |           |                         | Level 2 |           |                         | Level 3 |           |                         |      |          |                         |
|----|---------|-----------|-------------------------|---------|-----------|-------------------------|---------|-----------|-------------------------|------|----------|-------------------------|
|    | Name    | Type no.  | Breaking strength [daN] | Name    | Type no.  | Breaking strength [daN] | Name    | Type no.  | Breaking strength [daN] | Name | Type no. | Breaking strength [daN] |
| 1  | Amain   | 8000U-360 | 195.8                   | AI      | 8000U-190 | 99.6                    | A1      | 8000U-130 | 57.8                    |      |          |                         |
| 2  | Amain2  | 8000U-360 | 195.8                   | AII     | 8000U-190 | 99.6                    | A2      | 8000U-130 | 57.8                    |      |          |                         |
| 3  | Amain3  | 8000U-190 | 99.6                    | AIII    | 8000U-190 | 99.6                    | A3      | 8000U-130 | 57.8                    |      |          |                         |
| 4  | Cmain1  | 8000U-190 | 99.6                    | AIV     | 8000U-130 | 57.8                    | A4      | 8000U-130 | 57.8                    |      |          |                         |
| 5  | Cmain2  | 8000U-190 | 99.6                    | AVX     | 8000U-130 | 57.8                    | A5      | 8000U-090 | 41.8                    |      |          |                         |
| 6  | stabilo | PPSL-160  | 106.8                   | AVI     | 8000U-050 | 28                      | A6      | 8000U-090 | 41.8                    |      |          |                         |
| 7  |         |           |                         | CI      | 8000U-130 | 57.8                    | A7      | 8000U-090 | 41.8                    |      |          |                         |
| 8  |         |           |                         | CII     | 8000U-130 | 57.8                    | A8      | 8000U-090 | 41.8                    |      |          |                         |
| 9  |         |           |                         | C5      | 8000U-070 | 23.9                    | AV      | 8000U-130 | 57.8                    |      |          |                         |
| 10 |         |           |                         | C6      | 8000U-070 | 23.9                    | A11     | 8000U-050 | 28                      |      |          |                         |
| 11 |         |           |                         | Cmain3  | 8000U-130 | 57.8                    | A12     | 8000U-025 | 22.3                    |      |          |                         |
| 12 |         |           |                         |         |           |                         | A13     | 8000U-025 | 22.3                    |      |          |                         |
| 13 |         |           |                         |         |           |                         | C1      | 8000U-090 | 41.8                    |      |          |                         |
| 14 |         |           |                         |         |           |                         | C2      | 8000U-070 | 23.9                    |      |          |                         |
| 15 |         |           |                         |         |           |                         | C3      | 8000U-070 | 23.9                    |      |          |                         |
| 16 |         |           |                         |         |           |                         | C4      | 8000U-090 | 41.8                    |      |          |                         |
| 17 |         |           |                         |         |           |                         | c5      | 8000U-050 | 28                      |      |          |                         |
| 18 |         |           |                         |         |           |                         | c6      | 8000U-050 | 28                      |      |          |                         |
| 19 |         |           |                         |         |           |                         | c7      | 8000U-050 | 28                      |      |          |                         |
| 20 |         |           |                         |         |           |                         | c8      | 8000U-050 | 28                      |      |          |                         |
| 21 |         |           |                         |         |           |                         | CIII    | 8000U-050 | 28                      |      |          |                         |
| 22 |         |           |                         |         |           |                         | C9      | 8000U-050 | 28                      |      |          |                         |
| 23 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 24 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 25 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 26 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 27 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 28 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |
| 29 |         |           |                         |         |           |                         |         |           |                         |      |          |                         |



|                      |  |        |                      |  |        |                      |  |  |  |  |        |  |
|----------------------|--|--------|----------------------|--|--------|----------------------|--|--|--|--|--------|--|
| 30                   |  |        |                      |  |        |                      |  |  |  |  |        |  |
| 31                   |  |        |                      |  |        |                      |  |  |  |  |        |  |
| 32                   |  |        |                      |  |        |                      |  |  |  |  |        |  |
| <b>Total Level 1</b> |  | 1594.4 | <b>Total Level 2</b> |  | 1327.2 | <b>Total Level 3</b> |  |  |  |  | 1656.4 |  |

| Level 4 |          |                         |      |          |                         | Level 5 |          |                         |      |          |                         |      |
|---------|----------|-------------------------|------|----------|-------------------------|---------|----------|-------------------------|------|----------|-------------------------|------|
| Name    | Type no. | Breaking strength [daN] | Name | Type no. | Breaking strength [daN] | Name    | Type no. | Breaking strength [daN] | Name | Type no. | Breaking strength [daN] |      |
| 1       | a1       | 8000U-090               | 41.8 | d1       | 8000U-025               | 22.3    | a1       | 8000U-090               | 41.8 | c4       | 8000U-090               | 41.8 |
| 2       | a2       | 8000U-090               | 41.8 | d2       | 8000U-025               | 22.3    | a2       | 8000U-090               | 41.8 | c5       | 8000U-050               | 28   |
| 3       | a3       | 8000U-090               | 41.8 | d3       | 8000U-025               | 22.3    | a3       | 8000U-090               | 41.8 | c6       | 8000U-050               | 28   |
| 4       | a4       | 8000U-090               | 41.8 | d4       | 8000U-025               | 22.3    | a4       | 8000U-090               | 41.8 | c7       | 8000U-050               | 28   |
| 5       | a5       | 8000U-090               | 41.8 | C7       | 8000U-050               | 28      | a5       | 8000U-090               | 41.8 | c8       | 8000U-050               | 28   |
| 6       | a6       | 8000U-090               | 41.8 | C8       | 8000U-050               | 28      | a6       | 8000U-090               | 41.8 | c9       | 8000U-050               | 28   |
| 7       | a7       | 8000U-070               | 23.9 | c13      | 8000U-050               | 28      | a7       | 8000U-070               | 23.9 | c10      | 8000U-050               | 28   |
| 8       | a8       | 8000U-070               | 23.9 | c14      | 8000U-050               | 28      | a8       | 8000U-070               | 23.9 | c11      | 8000U-050               | 28   |
| 9       | ab1      | 8000U-090               | 41.8 |          |                         |         | a9       | 8000U-050               | 28   | c12      | 8000U-050               | 28   |
| 10      | ab2      | 8000U-090               | 41.8 |          |                         |         | a10      | 8000U-050               | 28   | c13      | 8000U-050               | 28   |
| 11      | ab3      | 8000U-090               | 41.8 |          |                         |         | a11      | 8000U-050               | 28   | c14      | 8000U-050               | 28   |
| 12      | ab4      | 8000U-090               | 41.8 |          |                         |         | a12      | 8000U-050               | 28   | c15      | 8000U-025               | 22.3 |
| 13      | ab5      | 8000U-090               | 41.8 |          |                         |         | a13      | 8000U-050               | 28   | c16      | 8000U-025               | 22.3 |
| 14      | ab6      | 8000U-050               | 28   |          |                         |         | a14      | 8000U-050               | 28   | d1       | 8000U-025               | 22.3 |
| 15      | ab7      | 8000U-050               | 28   |          |                         |         | a15      | 8000U-025               | 22.3 | d2       | 8000U-025               | 22.3 |
| 16      | ab8      | 8000U-050               | 28   |          |                         |         | a16      | 8000U-025               | 22.3 | d3       | 8000U-025               | 22.3 |
| 17      | A9       | 8000U-050               | 28   |          |                         |         | ab1      | 8000U-090               | 41.8 | d4       | 8000U-025               | 22.3 |
| 18      | A10      | 8000U-050               | 28   |          |                         |         | ab2      | 8000U-090               | 41.8 |          |                         |      |
| 19      | a13      | 8000U-050               | 28   |          |                         |         | ab3      | 8000U-090               | 41.8 |          |                         |      |
| 20      | a14      | 8000U-050               | 28   |          |                         |         | ab4      | 8000U-090               | 41.8 |          |                         |      |
| 21      | a15      | 8000U-025               | 22.3 |          |                         |         | ab5      | 8000U-090               | 41.8 |          |                         |      |
| 22      | a16      | 8000U-025               | 22.3 |          |                         |         | ab6      | 8000U-050               | 28   |          |                         |      |
| 23      | c15      | 8000U-025               | 22.3 |          |                         |         | ab7      | 8000U-050               | 28   |          |                         |      |
| 24      | c16      | 8000U-025               | 22.3 |          |                         |         | ab8      | 8000U-050               | 28   |          |                         |      |
| 25      | c1       | 8000U-090               | 41.8 |          |                         |         | ab9      | 8000U-050               | 28   |          |                         |      |
| 26      | c2       | 8000U-090               | 41.8 |          |                         |         | c1       | 8000U-090               | 41.8 |          |                         |      |
| 27      | c3       | 8000U-090               | 41.8 |          |                         |         | c2       | 8000U-090               | 41.8 |          |                         |      |
| 28      | c4       | 8000U-090               | 41.8 |          |                         |         | c3       | 8000U-090               | 41.8 |          |                         |      |



|    |    |           |    |                      |        |  |  |  |  |  |                      |        |
|----|----|-----------|----|----------------------|--------|--|--|--|--|--|----------------------|--------|
| 29 | c5 | 8000U-050 | 28 |                      |        |  |  |  |  |  |                      |        |
| 30 | c6 | 8000U-050 | 28 |                      |        |  |  |  |  |  |                      |        |
| 31 | c7 | 8000U-050 | 28 |                      |        |  |  |  |  |  |                      |        |
| 32 | c8 | 8000U-050 | 28 |                      |        |  |  |  |  |  |                      |        |
|    |    |           |    | <b>Total Level 4</b> | 2546.4 |  |  |  |  |  | <b>Total Level 5</b> | 2826.4 |

**Break detailed line strength calculation by level**

| Level 1 |          |                         | Level 3 |          |                         | Level 4              |          |                         | Level 5 |                      |                         |      |    |                      |       |
|---------|----------|-------------------------|---------|----------|-------------------------|----------------------|----------|-------------------------|---------|----------------------|-------------------------|------|----|----------------------|-------|
| Name    | Type no. | Breaking strength [daN] | Name    | Type no. | Breaking strength [daN] | Name                 | Type no. | Breaking strength [daN] | Name    | Type no.             | Breaking strength [daN] |      |    |                      |       |
| 1       | BR5.1    | 10N-200                 | 109.1   | BRI      | 8000U-050               | 28                   | BR1      | 8000U-025               | 22.3    | br1                  | 8000U-025               | 22.3 | 1  |                      |       |
|         |          | <b>Total Level 1</b>    | 218.2   | BRII     | 8000U-050               | 28                   | BR2      | 8000U-025               | 22.3    | br2                  | 8000U-025               | 22.3 | 2  |                      |       |
|         |          |                         |         | BRIII    | 8000U-050               | 28                   | BR3      | 8000U-025               | 22.3    | br3                  | 8000U-025               | 22.3 | 3  |                      |       |
|         |          |                         |         |          |                         |                      | BR4      | 8000U-025               | 22.3    | br4                  | 8000U-025               | 22.3 | 4  |                      |       |
|         |          |                         |         |          |                         |                      | BR5      | 8000U-025               | 22.3    | br5                  | 8000U-025               | 22.3 | 5  |                      |       |
|         |          |                         |         |          |                         |                      | BR6      | 8000U-025               | 22.3    | br6                  | 8000U-025               | 22.3 | 6  |                      |       |
|         |          |                         |         |          |                         |                      |          |                         |         | br7                  | 8000U-025               | 22.3 | 7  |                      |       |
|         |          |                         |         |          |                         |                      |          |                         |         | br8                  | 8000U-025               | 22.3 | 8  |                      |       |
|         |          |                         |         |          |                         |                      |          |                         |         | br9                  | 8000U-025               | 22.3 | 9  |                      |       |
|         |          |                         |         |          |                         |                      |          |                         |         | br10                 | 8000U-025               | 22.3 | 10 |                      |       |
| 1       | brmain   | 8000U-190               | 99.6    |          |                         |                      |          |                         |         | br11                 | 8000U-025               | 22.3 | 11 |                      |       |
| 2       |          |                         |         |          |                         |                      |          |                         |         | br12                 | 8000U-025               | 22.3 | 12 |                      |       |
| 3       |          |                         |         |          |                         |                      |          |                         |         | br13                 | 8000U-025               | 22.3 | 13 |                      |       |
| 4       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 14 |                      |       |
| 5       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 15 |                      |       |
| 6       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 16 |                      |       |
| 7       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 17 |                      |       |
| 8       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 18 |                      |       |
| 9       |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 19 |                      |       |
| 10      |          |                         |         |          |                         |                      |          |                         |         |                      |                         |      | 20 |                      |       |
|         |          | <b>Total Level 2</b>    | 199.2   |          |                         | <b>Total Level 3</b> | 168      |                         |         | <b>Total Level 4</b> | 267.6                   |      |    | <b>Total Level 5</b> | 579.8 |



## Line plan

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- (1) Suspension lines have been tested according to EN 926-1:2015, and for the calculation the lowest value out of 3 test specimen is used. The minimum breaking strength of any lines shall be greater than 200 N.
  - (2) Handle knot. The connection between the control (main handle) and the first level of line shall have a minimum breaking strength of 750 N
  - (3) Sum of each level for A, B, C, stabilo and brake suspension lines and value for the entire paragliding (part left and right (2X)). Subsequent levels are defined by each further line junction. First level is defined as the line attached to riser or main control handle.