FORK TRUSS

# LIBERA FL105



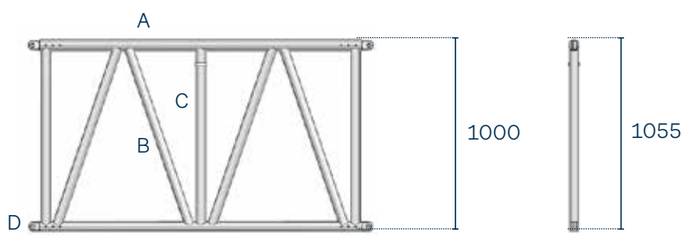
The top of the LIBERA range. Designed for Heavy-Duty applications, with high load capacity and long spans. LIBERA105 is primarily intended for outdoor use and is particularly suitable for roofing systems and large-scale structures.Itallows the construction of spans up to 30 metres in length with high load capacity

- 47 to 186 cm flat trusses
- Available in standard versions
- Ends with aluminium forks
- Universal four-way or male/female pass through connection

## LINEAR ELEMENTS

| Code | H (cm) | L (cm) | Code | H (cm) | L (cm) |
|---|---|---|---|---|---|
| FL105045V | flat section 105 | 45 | FL105136V | flat section 105 | 136 |
| FL105086V | flat section 105 | 86 | FL105186V | flat section 105 | 186 |

| Upper Chords A | Lower Chords A | Diagonals B | Braces C | Ends D | Connection systems |
|---|---|---|---|---|---|
| Extruded tube<br>Ø 60 × 5 mm<br>EN AW – 6082 T6 | Extruded tube<br>Ø 50 × 5 mm<br>EN AW – 6082 T6 | Extruded tube<br>Ø 50 × 4 mm<br>EN AW – 6082 T6 | Extruded tube<br>Ø 50 × 4 mm<br>EN AW – 6082 T6 | Forks connector<br>EN AW – 6082 T6 | KHLP: Cylindrical pin + safety R-clip KHLM+KHLF |




## Load table

| span | Unif. distributed load | | | Centre point load | | | Third point load | | | Quarter point load | | | Fifth point load | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Point load | Full load | Central deflection | Point load | Full load | Central deflection | Point load | Full load | Central deflection | Point load | Full load | Central deflection | Point load | Full load | Central deflection |
| [m] | [kg/m] | [kg] | mm | [kg] | [kg] | mm | [kg] | [kg] | mm | [kg] | [kg] | mm | [kg] | [kg] | mm |
| **5** | 499 | 2493 | 1 | 2491 | 2491 | 2 | 1246 | 2493 | 2 | 831 | 2493 | 2 | 623 | 2493 | 2 |
| **6** | 413 | 2477 | 2 | 2277 | 2277 | 3 | 1238 | 2477 | 3 | 826 | 2477 | 3 | 619 | 2477 | 3 |
| **7** | 351 | 2460 | 4 | 1996 | 1996 | 5 | 1230 | 2460 | 5 | 820 | 2460 | 5 | 615 | 2460 | 4 |
| **8** | 306 | 2444 | 6 | 1731 | 1731 | 6 | 1187 | 2373 | 7 | 815 | 2444 | 7 | 611 | 2444 | 7 |
| **9** | 270 | 2428 | 8 | 1524 | 1524 | 8 | 1114 | 2229 | 10 | 762 | 2285 | 9 | 607 | 2428 | 10 |
| **10** | 241 | 2412 | 11 | 1356 | 1356 | 10 | 1017 | 2034 | 12 | 678 | 2034 | 12 | 656 | 2260 | 12 |
| **11** | 218 | 2396 | 15 | 1217 | 1217 | 12 | 913 | 1826 | 15 | 609 | 1826 | 14 | 507 | 2029 | 15 |
| **12** | 183 | 2201 | 18 | 1101 | 1101 | 14 | 825 | 1651 | 18 | 550 | 1651 | 17 | 459 | 1834 | 18 |
| **13** | 154 | 201 | 21 | 1000 | 1000 | 17 | 750 | 1501 | 21 | 500 | 1501 | 20 | 417 | 1667 | 21 |
| **14** | 131 | 1827 | 24 | 914 | 914 | 20 | 685 | 1370 | 25 | 457 | 1370 | 23 | 381 | 1523 | 24 |
| **15** | 112 | 1674 | 28 | 837 | 837 | 23 | 628 | 1256 | 28 | 419 | 1256 | 26 | 349 | 1395 | 28 |
| **16** | 96 | 1538 | 32 | 769 | 769 | 26 | 577 | 1154 | 32 | 385 | 1154 | 30 | 321 | 1282 | 32 |
| **17** | 83 | 1417 | 36 | 708 | 708 | 30 | 531 | 1063 | 36 | 354 | 1063 | 34 | 295 | 1181 | 36 |
| **18** | 73 | 1307 | 40 | 653 | 653 | 34 | 490 | 980 | 41 | 327 | 980 | 38 | 272 | 1089 | 40 |
| **19** | 64 | 1207 | 45 | 603 | 603 | 38 | 453 | 905 | 45 | 302 | 905 | 43 | 251 | 1006 | 45 |
| **20** | 56 | 1115 | 50 | 558 | 558 | 42 | 418 | 836 | 51 | 279 | 836 | 48 | 232 | 929 | 50 |
| **21** | 49 | 1031 | 55 | 515 | 515 | 47 | 387 | 773 | 56 | 258 | 773 | 53 | 215 | 859 | 55 |
| **22** | 43 | 953 | 60 | 476 | 476 | 52 | 357 | 714 | 61 | 238 | 714 | 58 | 198 | 794 | 61 |
| **23** | 38 | 880 | 66 | 440 | 440 | 57 | 330 | 660 | 67 | 220 | 660 | 64 | 183 | 733 | 67 |
| **24** | 34 | 812 | 72 | 406 | 406 | 63 | 304 | 609 | 73 | 203 | 609 | 70 | 169 | 676 | 73 |
| **25** | 30 | 748 | 79 | 374 | 374 | 69 | 280 | 561 | 80 | 187 | 561 | 76 | 156 | 623 | 79 |
| **26** | 26 | 687 | 85 | 344 | 344 | 75 | 258 | 516 | 86 | 172 | 516 | 83 | 143 | 573 | 86 |
| **27** | 23 | 630 | 92 | 315 | 315 | 82 | 236 | 473 | 93 | 158 | 473 | 90 | 131 | 525 | 93 |
| **28** | 21 | 576 | 100 | 288 | 288 | 89 | 216 | 432 | 101 | 144 | 432 | 97 | 120 | 480 | 100 |
| **29** | 18 | 525 | 107 | 262 | 262 | 96 | 197 | 394 | 108 | 131 | 394 | 105 | 109 | 437 | 108 |
| **30** | 16 | 476 | 115 | 238 | 238 | 104 | 178 | 357 | 116 | 119 | 357 | 112 | 99 | 397 | 116 |

## Cantilever load table

| span | Unif. distributed load | | | Centre point load | |
|---|---|---|---|---|---|
| [m] | [kg/m] | [kg] | mm | [kg] | mm |
| **1.0** | 1270 | 1270 | 0 | 1270 | 0 |
| **2.0** | 627 | 1254 | 0 | 1129 | 1 |
| **3.0** | 410 | 1229 | 1 | 859 | 3 |
| **4.0** | 273 | 1091 | 3 | 630 | 5 |
| **5.0** | 195 | 975 | 5 | 490 | 7 |
| **5.5** | 159 | 875 | 7 | 438 | 9 |
| **6.0** | 131 | 787 | 8 | 393 | 10 |

These load capacity values are only valid if the trusses are connected together every 2 metres ($L_o$)
The load capacity values are only valid for a single line.

Load table has been prepared in accordance with EN 1999-1-1. When calculating the allowable loads it is assumed that the load is suspended from the bottom chord and the truss is supported from the top chord at each end.

The values shown in the table are the allowable static loads that can be applied the the truss. This is the live load or the payload.

The self weight of the truss has been taken into account when calculating the values in the table. It should be noted that this are idealised loading conditions and the User shall re-analyze the truss for the loading conditions which prevail for the application being considered.

# Connections



LIBERA is an open structural system. The distinguishing feature of the system is that it uses standard modular elements connected together in ways that allow varied design and geometry of the finished structure. These two pages show connections and accessories that are helpful in the assembly or set up of your LIBERA FL105 system. The wide range of accessories for LIBERA System include bar hooks, spacers for the construction of arched geometries, complimentary elements for sleeve-blocks and transport trolley systems for flat trusses.



**KHLP**

20 mm Cylindrical pin
+ 3 mm safety R-clip



**KHLB**

M20 screw bolt
+ spring washer



**KHLD**

M20 screw nut
+ spring washer



**KHLF**

Threaded female fork
connector + spring washer



**KHLG**

M20 Lifting Eye



**KHLM**

Male fork
connector complete



**KHL180A**

180° double fork aluminum
connector



**KHL180S**

180° double fork
steel connector



**KHL90LA**

90° double fork
alum. connector, left



**KHL90LS**

90° double fork steel
connector, left



**KHL90RA**

90° double fork alum.
connector, right



**KHL90RS**

90° double fork steel
connector, right

# Connection Stars

**FL105CS02**

2-way fork
connection
system



**FL105CS03**

3-way fork
connection
system



**FL105CS04**

4-way fork
connection
system



**FL105CS04C**

4-way fork
connection
system rounded
end



**FL105CS04L**

4-way fork
connection
system w/foot





# Accessories





**C066**

Bar hook for 61 cm. truss



**FL105059HS**

HL 105 cm Gate, 59 cm
truss - hoist support



**FL105047HSV**

HL 105 cm Gate, 47 cm
truss - hoist support



**FL105MSZ1**

Hoist support



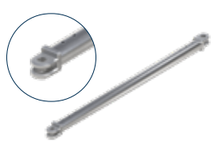
**FL76ST**

FL76 transport trolley
system for 20 pieces



**FL105MS**

Hoist support



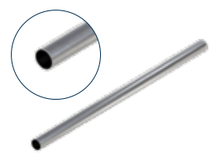
**RAF / Reinforced tube w/forks**

FL52 Transport trolley system
for 20 pieces



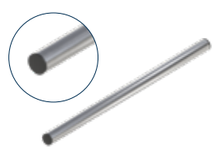
**RAH / Diagonal brace w/hooks**

RAH014M2P – working length 14.2 cm
RAH049P – working length 49 cm
RAH141M4 – working length 141 cm
RAH158M8 – working length 158 cm
RAH205M9S – working length 205 cm
RAH213M5 – working length 213 cm
RAH223M6 – working length 223 cm
RAH250M6 – working length 250 cm
RAH282M8 – working length 282 cm



**RAL / Aluminium pipe**

RAL047 – length 47 cm
RAL086 – length 86 cm
RAL100 – length 100 cm
RAL186 – length 186 cm
RAL200 – length 200 cm



**RAT / Aluminium pipe w/caps**

RAT050 – working length 50 cm
RAT100 – working length 100 cm
RAT150 – working length 150 cm
RAT200 – working length 200 cm
RAT250 – working length 250 cm
RAT300 – working length 300 cm