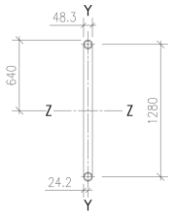
LX133 Technical Data Sheet 1 of 2

133cm Aluminium Scaffolding Beams

Part #	Detail	Description	Weight
LX133_500		0.5m 133cm Beam	6.25 kg
LX133_1000		1.0m 133cm Beam	13.5 kg
LX133_2000		2.0m 133cm Beam	23 kg
LX133_3000		3.0m 133cm Beam	32 kg

Part #	Detail	Description	Weight
LX133_4000		4.0m 133cm Beam	42.5 kg
LXBS008		Spigot Piece	1.2 kg
LVQR12_60		Spigot Pins	-

Cross Section Properties



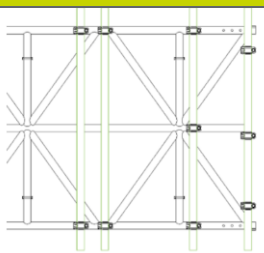
A: 12.4 cm²

I_{zz}: 46999 cm⁴

I_{yy}: 30 cm⁴

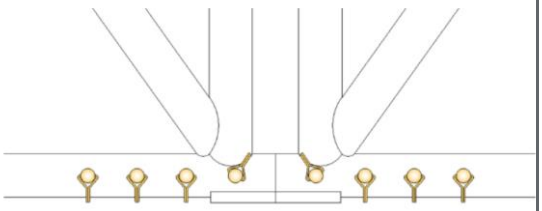
NB – stated parameters are based on chords only to allow for equivalent member analysis if required. For weights refer to table.

Puncheon Locations



Puncheons are only to be fitted at node locations as shown in the above diagram.

Splice Detail



All splices are to be made with the LCP Ltd spigot and the supplied four bolts are to be fitted each side of the joint. This ensures the strength of the beam is unaffected by the splice

Ultimate Moment Capacity (kN.m)		Ultimate Shear Capacity (kN)
Beam : Compression Chord Braced at 0.5m centres	145.5 kN.m	All Cases: 44.9 kN
Beam : Compression Chord Braced at 1.0m centres	101.9 kN.m	
Beam : Compression Chord Braced at 2.0m centres	36.7 kN.m	
Note – Spliced beams with four bolts each side of the spigot piece will achieve full moment capacity in all cases		
The Design Engineer should choose one of the applicable Safety Factors – 1.3, 1.5 or 1.65.		

Compression Chord Lacing at 0.5m Centres		Span (m)				
		4.0	8.0	12.0	16.0	20.0
Uniformly Distributed Load	(kN/m ULS)	22.8	11.2	6.8	4.0	2.6
	SLS Deflection (mm)	3.0	14.0	39.0	70.4	111.6
Mid Span Point Load	(kN ULS)	89.1	77.6	51.2	35.4	28.8
	SLS Deflection (mm)	5.9	21.7	41.3	64.2	101.1
Two Point Loads at Third Points	(kN ULS, each)	44.6	44.3	36.5	25.6	20.9
	SLS Deflection (mm)	2.9	18.0	46.3	79.0	122.0
Three Point Loads at Quarter Points	(kN ULS, each)	29.7	29.4	24.8	17.7	14.2
	SLS Deflection (mm)	3.9	18.1	45.3	74.1	115.5
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	22.8	11.2	7.4	4.4	2.8
	SLS Deflection (mm)	3.0	14.0	42.2	77.8	118.9

NOTES

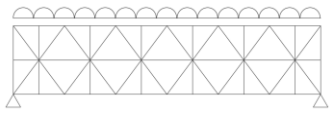
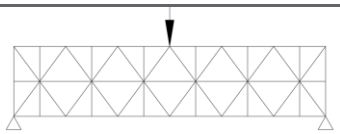
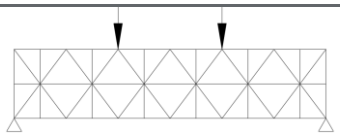
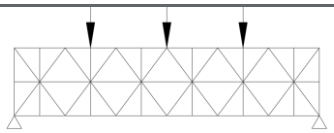
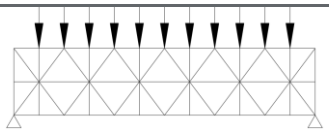
1. Loads stated are ultimate limit state based on the provision of simple supports at each bearing. Refer to Sheet 2 of 2 for load locations.
2. Resistances stated are design ultimate resistances ($X_{d,r}$)
3. To convert to 'safe working' loading/resistance divide the stated load/resistance by 1.3, 1.5 or 1.65.
4. Loads should be applied at node locations only, with the exception of the 'Uniformly Distributed Load' which is calculated allowing for local member bending effects.
5. 'Point Load Every Node' is the equivalent UDL applied as point loads at each node (ie each PL = stated kN/m x 0.5m chord node c/c). No local member bending effects are considered.
6. Supporting calculations are in accordance with BS EN 1999-1-:2007+A2:2013.
7. Spliced beams must be connected using all four bolt holes in each side of the spigot piece using the supplied bolts/pins.
8. Lacing tubes are to be connected with Class A Right Angle couplers. Bracing is to be connected with Class A Swivel couplers.
9. Stated deflections are indicative. A specific design should be completed in deflection critical cases.

LX133 Technical Data Sheet 2 of 2

133cm Aluminium Scaffolding Beams

Compression Chord Lacing at 1.0m Centres		Span (m)				
		4.0	8.0	12.0	16.0	20.0
Uniformly Distributed Load	(kN/m ULS)	22.8	10.0	5.0	2.9	1.9
	SLS Deflection (mm)	3.0	12.5	28.7	50.7	79.6
Mid Span Point Load	(kN ULS)	89.1	60.2	37.3	24.8	20.7
	SLS Deflection (mm)	5.9	16.9	30.1	44.9	72.5
Two Point Loads at Third Points	(kN ULS, each)	44.6	41.1	25.6	18.0	14.6
	SLS Deflection (mm)	2.9	16.7	32.4	55.3	85.4
Three Point Loads at Quarter Points	(kN ULS, each)	29.7	27.9	17.7	12.4	10.1
	SLS Deflection (mm)	3.9	17.1	32.4	51.9	81.9
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	22.8	11.2	5.7	3.1	2.0
	SLS Deflection (mm)	3.0	14.0	32.5	54.5	83.3

Compression Chord Lacing at 2.0m Centres		Span (m)				
		4.0	8.0	12.0	16.0	20.0
Uniformly Distributed Load	(kN/m ULS)	14.4	4.3	2.0	1.1	0.7
	SLS Deflection (mm)	1.9	5.3	11.2	19.1	29.5
Mid Span Point Load	(kN ULS)	55.8	21.7	13.4	8.9	7.5
	SLS Deflection (mm)	3.7	6.1	10.8	16.2	26.1
Two Point Loads at Third Points	(kN ULS, each)	42.2	14.8	9.2	6.5	5.3
	SLS Deflection (mm)	2.7	6.0	11.7	19.9	30.8
Three Point Loads at Quarter Points	(kN ULS, each)	24.0	10.1	6.4	4.5	3.6
	SLS Deflection (mm)	3.1	6.2	11.7	18.7	29.5
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	21.9	4.7	2.1	1.1	0.7
	SLS Deflection (mm)	2.9	5.9	11.7	19.6	30.0

Applied Load Locations	
	Uniformly Distributed Load
	Mid Span Point Load
	Two Point Loads at Third Points
	Three Point Loads at Quarter Points
	Point Load Every Node (Equivalent UDL)

Maintenance Loading

With an applied unfactored loading of 1 kN/m UDL as a continuous load to the top chord, representing a typical light maintenance loading, the LX133 series beams can achieve the following maximum spans:

0.5m c/c Chord Restraints	26.0m
1.0m c/c Chord Restraints	22.0m
2.0m c/c Chord Restraints	13.0m

This sheet is to be read in conjunction with LX133 Technical Data Sheet 1 of 2