

Load Calculation for Icepeak X-One sizes 20-22-24-25



IP X-One small size: Total strength		Strength daN	Level	Level 1	Level 2	Level 3	Level 4	Level 5		
a1	8000U-070	65.8	4	0	0	0	131.6	131.6		
a2	8000U-070	65.8	4	0	0	0	131.6	131.6		
a3	8000U-070	65.8	4	0	0	0	131.6	131.6		
a4	8000U-070	65.8	4	0	0	0	131.6	131.6		
a5	8000U-070	65.8	4	0	0	0	131.6	131.6		
a6	8000U-070	65.8	4	0	0	0	131.6	131.6		
a7	8000U-070	65.8	4	0	0	0	131.6	131.6		
a8	8000U-070	65.8	4	0	0	0	131.6	131.6		
a9	DC 40	45.7	5	0	0	0	0	91.4		
a10	DC 40	45.7	4	0	0	0	91.4	91.4		
a11	DC 35	33.9	4	0	0	0	67.8	67.8		
a12	DC 35	33.9	4	0	0	0	67.8	67.8		
a13	DC 35	33.9	3	0	0	67.8	67.8	67.8		
a14	DC 35	33.9	3	0	0	67.8	67.8	67.8		
A1	8000U-090	97.9	3	0	0	195.8	0	0		
A2	8000U-090	97.9	3	0	0	195.8	0	0		
A3	8000U-090	97.9	3	0	0	195.8	0	0		
A4	8000U-090	97.9	3	0	0	195.8	0	0		
A5	8000U-090	97.9	3	0	0	195.8	0	0		
A6	8000U-090	97.9	3	0	0	195.8	0	0		
A7	8000U-090	97.9	3	0	0	195.8	0	0		
A8	8000U-090	97.9	3	0	0	195.8	0	0		
A9	8000U-050	51.6	4	0	0	0	103.2	0		
2a1	8000U-190	199.85	2	0	399.7	0	0	0		
2a2	8000U-190	199.85	2	0	399.7	0	0	0		
2a3	8000U-190	199.85	2	0	399.7	0	0	0		
2a4	8000U-190	199.85	2	0	399.7	0	0	0		
2a5	8000U-070	65.8	3	0	0	131.6	0	0		
2a6	8000U-070	65.8	3	0	0	131.6	0	0		
3a1	8000U-360	370.6	1	741.2	0	0	0	0		
3a2	8000U-360	370.6	1	741.2	0	0	0	0		
3a3	8000U-090	97.9	2	0	195.8	0	0	0		
4A1	8000U-130	121.75	1	243.5	0	0	0	0		
b1	8000U-050	51.6	4	0	0	0	103.2	103.2		
b2	8000U-050	51.6	4	0	0	0	103.2	103.2		
b3	8000U-050	51.6	4	0	0	0	103.2	103.2		
b4	8000U-050	51.6	4	0	0	0	103.2	103.2		
b5	8000U-050	51.6	4	0	0	0	103.2	103.2		
b6	8000U-050	51.6	4	0	0	0	103.2	103.2		
b7	8000U-050	51.6	4	0	0	0	103.2	103.2		
b8	8000U-050	51.6	4	0	0	0	103.2	103.2		
b9	DC 40	45.7	5	0	0	0	0	91.4		
c1	8000U-050	51.6	4	0	0	0	103.2	103.2		
c2	8000U-050	51.6	4	0	0	0	103.2	103.2		
c3	8000U-050	51.6	4	0	0	0	103.2	103.2		
c4	8000U-050	51.6	4	0	0	0	103.2	103.2		
c5	8000U-050	51.6	3	0	0	103.2	103.2	103.2		
c6	8000U-050	51.6	3	0	0	103.2	103.2	103.2		
c7	8000U-050	51.6	3	0	0	103.2	103.2	103.2		
c8	8000U-050	51.6	3	0	0	103.2	103.2	103.2		
c9	DC 40	45.7	3	0	0	91.4	91.4	91.4		
c10	DC 35	33.9	3	0	0	67.8	67.8	67.8		
c11	DC 35	33.9	3	0	0	67.8	67.8	67.8		
c12	DC 35	33.9	3	0	0	67.8	67.8	67.8		
c13	DC 35	33.9	3	0	0	67.8	67.8	67.8		
c14	DC 35	33.9	3	0	0	67.8	67.8	67.8		
CD1	8000U-050	51.6	3	0	0	103.2	0	0		
CD2	8000U-050	51.6	3	0	0	103.2	0	0		
CD3	8000U-050	51.6	3	0	0	103.2	0	0		
CD4	8000U-050	51.6	3	0	0	103.2	0	0		
2c1	8000U-090	97.9	2	0	195.8	0	0	0		
2c2	8000U-090	97.9	2	0	195.8	0	0	0		
2c3	8000U-090	97.9	2	0	195.8	0	0	0		
2c4	8000U-090	97.9	2	0	195.8	0	0	0		
2c5	8000U-050	51.6	2	0	103.2	0	0	0		
2c6	8000U-050	51.6	2	0	103.2	0	0	0		
3c1	8000U-190	199.85	1	399.7	0	0	0	0		
3c2	8000U-190	199.85	1	399.7	0	0	0	0		
3c3	8000U-090	97.9	1	195.8	0	0	0	0		
d1	DC 35	33.9	4	0	0	0	67.8	67.8		
d2	DC 35	33.9	4	0	0	0	67.8	67.8		
d3	DC 35	33.9	4	0	0	0	67.8	67.8		
d4	DC 35	33.9	4	0	0	0	67.8	67.8		
stab	8000U-050	51.6	2	0	103.2	0	0	0		
br1	DC 35	33.9	NO LOAD CALCULATION							
br2	DC 35	33.9	NO LOAD CALCULATION							
br3	DC 35	33.9	NO LOAD CALCULATION							
br4	DC 35	33.9	NO LOAD CALCULATION							
br5	DC 35	33.9	NO LOAD CALCULATION							
br6	DC 35	33.9	NO LOAD CALCULATION							
br7	DC 35	33.9	NO LOAD CALCULATION							
br8	DC 35	33.9	NO LOAD CALCULATION							
br9	DC 35	33.9	NO LOAD CALCULATION							
br10	DC 35	33.9	NO LOAD CALCULATION							
br11	DC 35	33.9	NO LOAD CALCULATION							
br12	DC 35	33.9	NO LOAD CALCULATION							
br13	DC 35	33.9	NO LOAD CALCULATION							
2BR1	DC 35	33.9	NO LOAD CALCULATION							
2BR2	DC 35	33.9	NO LOAD CALCULATION							
2BR3	DC 35	33.9	NO LOAD CALCULATION							
2BR4	DC 35	33.9	NO LOAD CALCULATION							
2BR5	DC 35	33.9	NO LOAD CALCULATION							
2BR6	DC 35	33.9	NO LOAD CALCULATION							
4BR1	8000U-050	51.6	NO LOAD CALCULATION							
4BR2	8000U-050	51.6	NO LOAD CALCULATION							
4BR3	8000U-050	51.6	NO LOAD CALCULATION							
brmian	8000U-090	97.9	NO LOAD CALCULATION							
br5.1	TARAX-200	103.2	NO LOAD CALCULATION							

BRAKE

	L1	L2	L3	L4	L5
Total strength	2721.1	2887.4	3221.2	3871.4	3951
Theoretical 23G	23	L1<L2	L2<L3	L3<L4	L4<L5
MTOW (kg)	120.600098	127.970571	142.764703	171.581793	175.109693
Max allowed weight	120.600098				

Attachment points	82
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Lines data	Manufacturer	Material Cover	Material Core	Diameter	Strength (daN)	A/B	
DC 35	LIROS	-	Dyneema	0.38	33.9	>	20 daN
DC 40	LIROS	-	Dyneema	0.5	45.7	>	20 daN
DC 60	LIROS	-	Dyneema	0.6	71.25	>	20 daN
8000U-050	EDELRID	-	Aramid	0.5	51.6	>	20 daN
8000U-070	EDELRID	-	Aramid	0.7	65.8	>	20 daN
8000U-090	EDELRID	-	Aramid	0.8	97.9	>	20 daN
8000U-130	EDELRID	-	Aramid	1	121.75	>	20 daN
8000U-190	EDELRID	-	Aramid	1.2	199.85	>	20 daN
8000U-230	EDELRID	-	Aramid	1.3	243.75	>	20 daN
8000U-280	EDELRID	-	Aramid	1.6	270.1	>	20 daN
8000U-360	EDELRID	-	Aramid	1.7	370.6	>	20 daN
8000U-470	EDELRID	-	Aramid	1.9	491.85	>	20 daN
TARAX-200	EDELRID	Polyester	Dyneema	1.7	103.2	>	100 daN



A: The absolute minimum strength, Fbreak, obtained from the average 10 samples tested, including brake lines must be equal or greater than 20 daN.

B: The main brake line must have a minimum strength of 100 daN.

C: Strength of each type of lines test on a testing laboratory, the average of 10 samples and the speed of the procedure to break the line must be slower than 0,0166 m/s

D :At each level above, in every cascade of lines and across each line junction the calculated total strength has to be the same or stronger than the level below it (tolerance 5%).

IP X-One SERIAL

Small sizes Each level strength

RISER A	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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								a1	8000U-070	65.8	
						A1	8000U-090	97.9	b1	8000U-050	51.6
								a2	8000U-070	65.8	
						A2	8000U-090	97.9	b2	8000U-050	51.6
3a1	8000U-360	370.6						a3	8000U-070	65.8	
						A3	8000U-090	97.9	b3	8000U-050	51.6
								a4	8000U-070	65.8	
						A4	8000U-090	97.9	b4	8000U-050	51.6
								Sum L4	a1	65.8	
									b1	51.6	
						Sum L3	A1	97.9	117.4	a2	65.8
									b2	51.6	
						Sum L2	A2	97.9	117.4	b2	51.6
3a1	370.6	399.7	2a1	199.85	195.8	A2	97.9	117.4	b2	51.6	
									a3	65.8	
						A3	97.9	117.4	b3	51.6	
									a4	65.8	
						A4	97.9	117.4	b4	51.6	

RISER A	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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								a5	8000U-070	65.8	
						A5	8000U-090	97.9	b5	8000U-050	51.6
								a6	8000U-070	65.8	
						A6	8000U-090	97.9	b6	8000U-050	51.6
3a2	8000U-360	370.6						a7	8000U-070	65.8	
						A7	8000U-090	97.9	b7	8000U-050	51.6
								a8	8000U-070	65.8	
						A8	8000U-090	97.9	b8	8000U-050	51.6
								Sum L4	a5	65.8	
									b5	51.6	
						Sum L3	A5	97.9	117.4	a6	65.8
									b6	51.6	
						Sum L2	A6	97.9	117.4	b6	51.6
3a2	370.6	399.7	2a3	199.85	195.8	A6	97.9	117.4	b6	51.6	
									a7	65.8	
						A7	97.9	117.4	b7	51.6	
									a8	65.8	
						A8	97.9	117.4	b8	51.6	

RISER A	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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									a9	DC 40	45.7
									b9	DC 40	45.7
								a10	DC 40	45.7	
						2a5	8000U-070	65.8	A9	8000U-050	51.6
								a11	DC 35	33.9	
						2a6	8000U-070	65.8	a12	DC 35	33.9
4A1	8000U-130	121.75	3a3	8000U-090	97.9			a13	DC 35	33.9	
								a14	DC 35	33.9	
								c13	DC 35	33.9	
								c14	DC 35	33.9	
								Sum L5	a9	45.7	
									b9	45.7	
								Sum L4	A9	51.6	
									a10	45.7	
									a11	33.9	
									a12	33.9	
						Sum L3	2a5	65.8	97.3	a10	45.7
									a11	33.9	
						Sum L2	3a3	97.9	134.6	2a6	65.8
4A1	121.75	149.5	stab	51.6	135.6	a13	33.9				
						a16	33.9				
						c13	33.9				
						c14	33.9				

RISER	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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						CD1	8000U-050	51.6	c1	8000U-050	51.6
									d1	DC 35	33.9
3c1	8000U-190	199.85	2c1	8000U-090	97.9	CD2	8000U-050	51.6	c2	8000U-050	51.6
									d2	DC 35	33.9
			2c2	8000U-090	97.9	CD3	8000U-050	51.6	c3	8000U-050	51.6
									d3	DC 35	33.9
						CD4	8000U-050	51.6	c4	8000U-050	51.6
									d4	DC 35	33.9
									Sum L4		
						CD1	51.6	85.5	c1	51.6	
									d1	33.9	
			Sum L2	2c1	97.9	Sum L3		103.2	c2	51.6	
3c1	199.85	195.8				CD2	51.6	85.5	d2	33.9	
				2c2	97.9	103.2					
						CD3	51.6	85.5	c3	51.6	
									d3	33.9	
						CD4	51.6	85.5	c4	51.6	
									d4	33.9	

RISER	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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						c5	8000U-050	51.6			
3c2	8000U-190	199.85	2c3	8000U-090	97.9	c6	8000U-050	51.6			
			2c4	8000U-090	97.9	c7	8000U-050	51.6			
						c8	8000U-050	51.6			
									c5	51.6	
									Sum L3		
			Sum L2	2c3	97.9				c6	51.6	
3c2	199.85	195.8				103.2					
				2c4	97.9	103.2			c7	51.6	
									c8	51.6	

RISER	Reference	Level 1 (DaN)	Reference	Level 2 (DaN)	Reference	Level 3 (DaN)	Reference	Level 4 (DaN)	Reference	Level 5 (DaN)
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						c9	DC 40	45.7			
3c3	8000U-090	97.9	2c5	8000U-050	51.6	c10	DC 35	33.9			
			2c6	8000U-050	51.6	c11	DC 35	33.9			
									c9	45.7	
									Sum L3		
			Sum L2	2c5	51.6				c10	33.9	
3c3	97.9	103.2				79.6					
				2c6	51.6	67.8			c11	33.9	
									c12	33.9	