

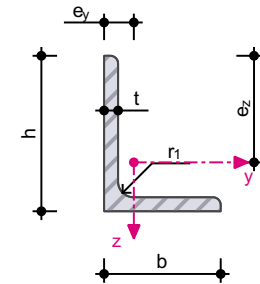


L

Unequal Round Edged Angles

L

- DIN 1029:1994-03
- Feronia



	Geometry					Sectional Area	Bending					
Section	h [mm]	b [mm]	t [mm]	r ₁ [mm]	r ₂ [mm]	A [cm ²]	e _y [mm]	e _z [mm]	I _y [cm ⁴]	I _z [cm ⁴]	I _{yz} [cm ⁴]	I _u [cm ⁴]
L 50x30x4	50.0	30.0	4.0	4.5	2.0	3.07	7.0	33.1	7.76	2.11	2.31	8.58
L 75x50x9	75.0	50.0	9.0	6.5	3.5	10.48	13.2	49.4	57.38	20.20	19.42	65.67
L 75x55x9	75.0	55.0	9.0	7.0	3.5	10.94	14.8	50.3	59.39	26.74	22.95	71.23
L 90x60x6	90.0	60.0	6.0	7.0	3.5	8.69	14.1	61.1	71.65	25.76	24.95	82.60
L 90x60x8	90.0	60.0	8.0	7.0	3.5	11.41	14.9	60.3	92.51	32.99	31.93	106.40
L 100x75x9	100.0	75.0	9.0	10.0	5.0	15.05	19.1	68.5	147.64	71.00	59.63	180.20
L 130x65x8	130.0	65.0	8.0	11.0	5.5	15.09	13.7	84.4	262.49	44.81	60.97	278.40
L 130x65x10	130.0	65.0	10.0	11.0	5.5	18.63	14.5	83.5	320.51	54.17	73.61	339.50
L 150x75x11	150.0	75.0	11.0	10.5	5.5	23.65	16.5	96.3	545.30	92.92	126.15	578.10
L 180x90x10	180.0	90.0	10.0	14.0	7.0	26.21	18.5	117.2	880.45	151.10	205.17	934.20
L 200x100x14	200.0	100.0	14.0	15.0	7.5	40.28	21.8	128.8	1653.77	282.63	384.03	1754.00

	Bending											
Section	I_v [cm ⁴]	I_p [cm ⁴]	$I_{p,SC}$ [cm ⁴]	α [deg]	i_y [mm]	i_z [mm]	i_{yz} [mm]	i_u [mm]	i_v [mm]	i_p [mm]	$i_{p,SC}$ [mm]	max S_y [cm ³]
L 50x30x4	1.28	9.87	17.46	−19.65	15.9	8.3	8.7	16.7	6.5	17.9	23.9	2.16
L 75x50x9	11.91	77.58	132.33	−23.12	23.4	13.9	13.6	25.0	10.7	27.2	35.5	10.80
L 75x55x9	14.90	86.13	142.63	−27.29	23.3	15.6	14.5	25.5	11.7	28.1	36.1	11.22
L 90x60x6	14.81	97.41	166.24	−23.70	28.7	17.2	16.9	30.8	13.0	33.5	43.7	11.05
L 90x60x8	19.10	125.50	214.39	−23.51	28.5	17.0	16.7	30.5	12.9	33.2	43.3	14.38
L 100x75x9	38.44	218.64	360.22	−28.63	31.3	21.7	19.9	34.6	16.0	38.1	48.9	20.74
L 130x65x8	28.90	307.30	582.49	−14.63	41.7	17.2	20.1	43.0	13.8	45.1	62.1	27.91
L 130x65x10	35.18	374.68	712.62	−14.47	41.5	17.1	19.9	42.7	13.7	44.8	61.8	34.27
L 150x75x11	60.12	638.22	1215.61	−14.57	48.0	19.8	23.1	49.4	15.9	51.9	71.7	50.29
L 180x90x10	97.35	1031.55	1954.74	−14.68	58.0	24.0	28.0	59.7	19.3	62.7	86.4	67.31
L 200x100x14	182.40	1936.40	3683.27	−14.63	64.1	26.5	30.9	66.0	21.3	69.3	95.6	114.39

	Bending											
Section	max S _z [cm ³]	max S _u [cm ³]	max S _v [cm ³]	W _{y,min} [cm ³]	W _{y,max} [cm ³]	W _{z,min} [cm ³]	W _{z,max} [cm ³]	W _{u,min} [cm ³]	W _{u,max} [cm ³]	W _{v,min} [cm ³]	W _{v,max} [cm ³]	W _y [cm ³]
L 50x30x4	1.03	2.26	0.57	−1.83	2.12	−1.17	0.76	−2.56	3.63	−1.04	0.77	1.83
L 75x50x9	5.99	11.55	3.10	−8.94	10.10	−6.22	4.52	−12.98	17.28	−5.36	4.55	8.94
L 75x55x9	7.16	12.19	3.46	−9.15	10.59	−7.33	5.42	−13.84	17.63	−6.08	5.47	9.15
L 90x60x6	6.21	11.78	3.19	−9.26	11.17	−7.08	4.62	−13.40	18.39	−6.05	4.66	9.26
L 90x60x8	8.04	15.33	4.15	−11.93	13.97	−8.75	5.99	−17.38	23.51	−7.50	6.04	11.93
L 100x75x9	13.75	22.71	6.47	−17.01	20.53	−14.73	10.39	−25.99	33.14	−12.06	10.54	17.01
L 130x65x8	10.22	28.70	6.09	−24.60	27.97	−12.64	7.39	−32.71	48.77	−11.68	7.41	24.60
L 130x65x10	12.45	35.21	7.41	−29.92	33.30	−14.81	9.09	−40.20	58.87	−13.72	9.12	29.92
L 150x75x11	18.42	51.76	10.94	−43.95	49.14	−22.01	13.43	−59.36	86.74	−20.37	13.47	43.95
L 180x90x10	24.81	69.29	14.78	−59.63	68.45	−31.16	17.89	−79.13	118.47	−28.78	17.96	59.63
L 200x100x14	41.91	117.69	24.87	−99.99	112.34	−50.50	30.51	−134.80	197.92	−46.71	30.58	99.99

	Bending			Shear						Torsion		Warping
Section	W _z [cm ³]	W _u [cm ³]	W _v [cm ³]	A _y [cm ²]	A _z [cm ²]	A _u [cm ²]	A _v [cm ²]	y _{sc} [mm]	z _{sc} [mm]	I _t [cm ⁴]	W _t [cm ³]	max ω [cm ²]
L 50x30x4	0.76	2.56	0.77	0.54	1.44	0.93	1.52	-5.0	14.9	0.17	0.43	0.00
L 75x50x9	4.52	12.98	4.55	2.14	4.67	3.73	5.03	-8.7	21.1	2.90	3.23	0.00
L 75x55x9	5.42	13.84	5.47	2.48	4.52	4.20	4.99	-10.3	20.2	3.04	3.38	0.00
L 90x60x6	4.62	13.40	4.66	1.73	3.77	2.91	4.09	-11.1	25.9	1.09	1.83	0.00
L 90x60x8	5.99	17.38	6.04	2.29	5.00	3.90	5.41	-10.9	25.7	2.51	3.14	0.00
L 100x75x9	10.39	25.99	10.54	3.45	6.00	5.65	6.72	-14.6	27.0	4.30	4.78	0.00
L 130x65x8	7.39	32.71	7.41	2.08	7.87	3.72	8.17	-9.7	41.6	3.46	4.33	0.00
L 130x65x10	9.09	40.20	9.12	2.59	9.81	4.69	10.16	-9.5	41.5	6.56	6.56	0.00
L 150x75x11	13.43	59.36	13.47	3.30	12.47	5.96	12.93	-11.0	48.2	9.90	9.00	0.00
L 180x90x10	17.89	79.13	17.96	3.60	13.66	6.44	14.17	-13.5	57.8	9.36	9.36	0.00
L 200x100x14	30.51	134.80	30.58	5.61	21.17	10.11	21.95	-14.8	64.2	27.57	19.69	0.00

	Warping				Stability				Plasticity			
Section	I_{ω} [cm ⁶]	i_{ω} [mm]	W_{ω} [cm ⁴]	max S_{ω} [cm ⁴]	r_u [mm]	r_v [mm]	$r_{u,SC}$ [mm]	$r_{v,SC}$ [mm]	$W_{pl,y}$ [cm ³]	$W_{pl,y,pure}$ [cm ³]	$W_{pl,z}$ [cm ³]	$W_{pl,z,pure}$ [cm ³]
L 50x30x4	0.00	0.0	0.00	0.00	-5.6	30.5	50.5	-30.6	4.21	3.28	1.69	1.50
L 75x50x9	0.00	0.0	0.00	0.00	-7.5	43.5	76.8	-39.9	20.93	16.36	10.21	8.72
L 75x55x9	0.00	0.0	0.00	0.00	-6.6	44.4	82.0	-33.5	21.42	16.83	12.24	10.46
L 90x60x6	0.00	0.0	0.00	0.00	-9.3	56.1	97.9	-48.4	21.27	16.68	10.12	9.09
L 90x60x8	0.00	0.0	0.00	0.00	-9.0	54.1	95.2	-48.0	27.73	21.70	13.33	11.71
L 100x75x9	0.00	0.0	0.00	0.00	-8.8	62.9	115.5	-42.7	39.35	31.15	23.14	20.21
L 130x65x8	0.00	0.0	0.00	0.00	-15.2	85.6	126.3	-92.4	54.98	43.21	16.24	14.73
L 130x65x10	0.00	0.0	0.00	0.00	-14.6	82.8	122.7	-91.6	67.54	53.05	20.30	17.83
L 150x75x11	0.00	0.0	0.00	0.00	-16.3	94.6	141.0	-105.1	99.32	78.02	29.80	26.31
L 180x90x10	0.00	0.0	0.00	0.00	-21.0	118.4	175.2	-127.9	132.72	104.27	38.98	35.73
L 200x100x14	0.00	0.0	0.00	0.00	-22.2	127.4	189.6	-140.6	225.71	177.22	67.44	59.95

	Plasticity											
Section	$W_{pl,u}$ [cm ³]	$W_{pl,v}$ [cm ³]	$\alpha_{pl,y}$ [--]	$\alpha_{pl,y,pure}$ [--]	$\alpha_{pl,z}$ [--]	$\alpha_{pl,z,pure}$ [--]	$\alpha_{pl,u}$ [--]	$\alpha_{pl,v}$ [--]	$A_{pl,y}$ [cm ²]	$A_{pl,z}$ [cm ²]	$A_{pl,u}$ [cm ²]	$A_{pl,v}$ [cm ²]
L 50x30x4	4.48	1.62	2.296	1.793	2.216	1.968	1.751	2.113	1.12	1.92	1.70	2.18
L 75x50x9	22.86	9.24	2.341	1.830	2.258	1.928	1.761	2.033	4.09	6.34	6.26	7.44
L 75x55x9	24.24	10.72	2.341	1.840	2.259	1.930	1.752	1.960	4.54	6.34	6.95	7.72
L 90x60x6	23.35	9.46	2.298	1.802	2.191	1.967	1.742	2.029	3.42	5.22	5.23	6.15
L 90x60x8	30.38	12.27	2.324	1.819	2.224	1.954	1.748	2.033	4.48	6.88	6.85	8.10
L 100x75x9	45.12	20.35	2.313	1.831	2.227	1.946	1.736	1.930	6.35	8.60	9.69	10.58
L 130x65x8	56.89	16.58	2.235	1.757	2.197	1.993	1.739	2.237	4.88	10.08	7.27	10.99
L 130x65x10	69.83	20.30	2.257	1.773	2.234	1.962	1.737	2.226	6.00	12.50	8.93	13.60
L 150x75x11	102.72	29.93	2.260	1.775	2.219	1.959	1.730	2.222	7.65	15.89	11.40	17.31
L 180x90x10	137.39	40.13	2.226	1.749	2.179	1.997	1.736	2.235	8.50	17.50	12.66	19.08
L 200x100x14	233.48	68.09	2.257	1.772	2.210	1.965	1.732	2.227	13.02	27.02	19.42	29.43

	Plasticity											
Section	N _{pl} [kN]	V _{pl,y} [kN]	V _{pl,z} [kN]	V _{pl,u} [kN]	V _{pl,v} [kN]	M _{pl,y} [kNm]	M _{pl,z} [kNm]	M _{pl,u} [kNm]	M _{pl,v} [kNm]	y _{pl} [mm]	z _{pl} [mm]	u _{pl} [mm]
L 50x30x4	72.061	15.196	26.050	23.070	29.643	0.99	0.40	1.05	0.38	−4.0	5.5	−0.5
L 75x50x9	246.240	55.560	86.087	84.903	100.990	4.92	2.40	5.37	2.17	−6.2	9.1	−0.6
L 75x55x9	257.158	61.665	86.087	94.275	104.780	5.03	2.88	5.70	2.52	−7.5	10.8	−0.4
L 90x60x6	204.283	46.402	70.824	70.957	83.502	5.00	2.38	5.49	2.22	−9.2	11.8	−0.8
L 90x60x8	268.203	60.783	93.346	92.973	109.844	6.52	3.13	7.14	2.88	−8.5	11.4	−0.7
L 100x75x9	353.626	86.087	116.615	131.442	143.607	9.25	5.44	10.60	4.78	−11.6	15.6	−0.6
L 130x65x8	354.629	66.211	136.763	98.602	149.051	12.92	3.82	13.37	3.90	−7.8	10.7	−1.6
L 130x65x10	437.819	81.406	169.597	121.194	184.556	15.87	4.77	16.41	4.77	−7.3	10.3	−1.6
L 150x75x11	555.714	103.725	215.659	154.655	234.821	23.34	7.00	24.14	7.03	−8.7	11.7	−1.8
L 180x90x10	615.971	115.326	237.435	171.737	258.912	31.19	9.16	32.29	9.43	−11.2	14.9	−2.2
L 200x100x14	946.647	176.652	366.600	263.507	399.329	53.04	15.85	54.87	16.00	−11.7	15.9	−2.4

	Plasticity	Other									
Section	v_{pl} [mm]	N_u [kN]	G [kg/m]	A_m [m ² /m]	V [cm ³ /m]	A_m/V [1/m]	$d_{0,1}$ [mm]	$d_{0,2}$ [mm]	w_1 [mm]	w_2 [mm]	w_3 [mm]
L 50x30x4	3.4	72.061	2.4	0.156	306.60	510.111	0.0	0.0	0.0	0.0	0.0
L 75x50x9	5.0	246.240	8.2	0.244	1048.00	233.015	21.0	0.0	44.0	0.0	0.0
L 75x55x9	4.9	257.158	8.6	0.254	1094.00	232.176	21.0	13.0	44.0	0.0	39.0
L 90x60x6	6.3	204.283	6.8	0.294	869.30	338.203	25.0	13.0	48.0	0.0	36.0
L 90x60x8	6.1	268.203	9.0	0.294	1141.00	257.669	28.0	13.0	53.0	0.0	38.0
L 100x75x9	6.7	353.626	11.8	0.341	1505.00	226.844	28.0	21.0	54.0	0.0	45.0
L 130x65x8	7.9	354.629	11.8	0.381	1509.00	252.220	28.0	17.0	64.0	0.0	43.0
L 130x65x10	7.6	437.819	14.6	0.381	1863.00	204.294	28.0	13.0	70.0	0.0	40.0
L 150x75x11	8.6	555.714	18.6	0.441	2365.00	186.385	25.0	21.0	53.0	113.0	47.0
L 180x90x10	11.0	615.971	20.6	0.528	2621.00	201.450	28.0	25.0	59.0	126.0	56.0
L 200x100x14	11.7	946.647	31.6	0.587	4028.00	145.755	28.0	28.0	64.0	131.0	64.0

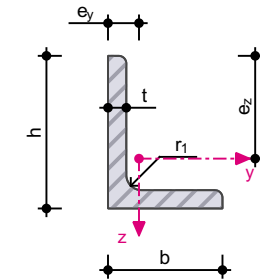


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- DIN EN 10056-1:1998-10
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Unequal Round Edged Angles



	Geometry					Sectional Area	Bending					
Section	h [mm]	b [mm]	t [mm]	r ₁ [mm]	r ₂ [mm]	A [cm ²]	e _y [mm]	e _z [mm]	I _y [cm ⁴]	I _z [cm ⁴]	I _{yz} [cm ⁴]	I _u [cm ⁴]
L 30x20x3	30.0	20.0	3.0	4.0	2.0	1.43	5.0	20.1	1.25	0.44	0.42	1.43
L 30x20x4	30.0	20.0	4.0	4.0	2.0	1.86	5.4	19.7	1.59	0.55	0.53	1.81
L 40x20x4	40.0	20.0	4.0	4.0	2.0	2.26	4.8	25.3	3.59	0.60	0.81	3.80
L 40x25x4	40.0	25.0	4.0	4.0	2.0	2.46	6.2	26.4	3.89	1.16	1.21	4.35
L 45x30x4	45.0	30.0	4.0	4.5	2.3	2.86	7.4	30.2	5.75	2.04	1.98	6.61
L 50x30x5	50.0	30.0	5.0	5.0	2.5	3.78	7.4	32.7	7.29	2.17	2.05	8.01
L 60x30x5	60.0	30.0	5.0	5.0	2.5	4.28	6.8	38.4	15.60	2.63	3.57	16.52
L 60x40x5	60.0	40.0	5.0	6.0	3.0	4.79	9.7	40.4	17.19	6.10	5.91	19.75
L 60x40x6	60.0	40.0	6.0	6.0	3.0	5.68	10.1	40.0	20.14	7.12	6.89	23.11

L 65x50x5	65.0	50.0	5.0	6.0	3.0	5.54	12.5	45.1	23.18	11.93	9.73	28.79
L 70x50x6	70.0	50.0	6.0	7.0	3.5	6.89	12.5	47.7	33.40	14.19	12.64	39.67
L 75x50x6	75.0	50.0	6.0	7.0	3.5	7.19	12.1	50.6	40.53	14.45	13.99	46.62
L 75x50x8	75.0	50.0	8.0	7.0	3.5	9.41	12.9	49.8	52.02	18.39	17.74	59.65
L 80x40x6	80.0	40.0	6.0	7.0	3.5	6.89	8.8	51.5	44.93	7.59	10.32	47.59
L 80x40x8	80.0	40.0	8.0	7.0	3.5	9.01	9.6	50.6	57.61	9.62	12.97	60.89
L 80x60x7	80.0	60.0	7.0	8.0	4.0	9.38	15.2	54.9	59.00	28.37	23.83	72.01
L 100x50x6	100.0	50.0	6.0	8.0	4.0	8.71	10.5	64.9	89.89	15.41	20.95	95.38
L 100x50x8	100.0	50.0	8.0	8.0	4.0	11.43	11.3	64.0	116.21	19.67	26.69	123.10
L 100x65x7	100.0	65.0	7.0	10.0	5.0	11.17	15.1	67.7	112.43	37.60	37.52	128.00
L 100x65x8	100.0	65.0	8.0	10.0	5.0	12.67	15.5	67.3	126.80	42.20	42.13	144.20
L 100x65x10	100.0	65.0	10.0	10.0	5.0	15.61	16.3	66.4	154.07	50.98	50.81	174.90
L 100x75x8	100.0	75.0	8.0	10.0	5.0	13.47	18.7	69.0	133.05	64.09	53.83	162.50
L 100x75x10	100.0	75.0	10.0	10.0	5.0	16.61	19.5	68.1	161.80	77.57	65.08	197.20
L 100x75x12	100.0	75.0	12.0	10.0	5.0	19.67	20.3	67.3	188.93	90.14	75.31	229.60
L 120x80x8	120.0	80.0	8.0	11.0	5.5	15.49	18.7	81.7	225.62	80.81	78.22	259.80
L 120x80x10	120.0	80.0	10.0	11.0	5.5	19.13	19.5	80.8	275.43	98.19	95.10	316.80
L 120x80x12	120.0	80.0	12.0	11.0	5.5	22.69	20.3	80.0	322.90	114.26	110.44	370.50
L 125x75x8	125.0	75.0	8.0	11.0	5.5	15.49	16.8	83.6	247.26	67.67	74.28	274.00
L 125x75x10	125.0	75.0	10.0	11.0	5.5	19.13	17.6	82.7	302.06	82.00	90.03	334.20

L 125x75x12	125.0	75.0	12.0	11.0	5.5	22.69	18.4	81.9	353.97	95.50	104.61	391.00
L 135x65x8	135.0	65.0	8.0	11.0	5.5	15.49	13.4	87.2	291.38	45.17	64.17	307.10
L 135x65x10	135.0	65.0	10.0	11.0	5.5	19.13	14.2	86.2	355.95	54.61	77.46	374.70
L 150x75x9	150.0	75.0	9.0	12.0	6.0	19.59	15.7	97.4	455.11	78.01	106.08	482.90
L 150x75x10	150.0	75.0	10.0	12.0	6.0	21.65	16.1	96.9	500.46	85.47	116.23	530.80
L 150x75x12	150.0	75.0	12.0	12.0	6.0	25.71	16.9	96.0	588.34	99.55	135.10	623.20
L 150x75x15	150.0	75.0	15.0	12.0	6.0	31.65	18.1	94.8	712.90	119.19	160.48	753.50
L 150x90x10	150.0	90.0	10.0	12.0	6.0	23.15	20.4	100.0	533.23	145.95	160.18	590.90
L 150x90x12	150.0	90.0	12.0	12.0	6.0	27.51	21.2	99.2	627.38	170.82	187.48	694.50
L 150x90x15	150.0	90.0	15.0	12.0	6.0	33.90	22.3	98.0	761.02	205.58	224.80	840.60
L 150x100x10	150.0	100.0	10.0	12.0	6.0	24.15	23.4	101.9	552.76	198.34	192.09	636.90
L 150x100x12	150.0	100.0	12.0	12.0	6.0	28.71	24.2	101.1	650.71	232.39	225.20	748.90
L 200x100x10	200.0	100.0	10.0	15.0	7.5	29.24	20.1	130.7	1219.03	210.17	285.05	1294.00
L 200x100x12	200.0	100.0	12.0	15.0	7.5	34.80	21.0	129.7	1440.08	247.12	335.59	1528.00
L 200x100x15	200.0	100.0	15.0	15.0	7.5	42.99	22.2	128.4	1758.24	299.46	406.78	1864.00
L 200x150x12	200.0	150.0	12.0	15.0	7.5	40.80	36.1	139.2	1652.55	802.65	674.74	2025.00
L 200x150x15	200.0	150.0	15.0	15.0	7.5	50.49	37.3	137.9	2021.79	979.91	824.34	2476.00

	Bending											
Section	I _v	I _p	I _{p,SC}	α	i _y	i _z	i _{yz}	i _u	i _v	i _p	i _{p,SC}	max S _y

	[cm ⁴]	[cm ⁴]	[cm ⁴]	[deg]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[cm ³]
L 30x20x3	0.26	1.69	2.87	−23.12	9.4	5.5	5.4	10.0	4.2	10.9	14.2	0.59
L 30x20x4	0.33	2.14	3.64	−22.83	9.2	5.5	5.3	9.9	4.2	10.7	14.0	0.76
L 40x20x4	0.39	4.19	7.98	−14.14	12.6	5.1	6.0	13.0	4.2	13.6	18.8	1.26
L 40x25x4	0.70	5.05	8.81	−20.81	12.6	6.9	7.0	13.3	5.3	14.3	18.9	1.36
L 45x30x4	1.19	7.80	13.29	−23.41	14.2	8.4	8.3	15.2	6.4	16.5	21.6	1.79
L 50x30x5	1.45	9.46	21.03	−19.39	13.9	7.6	7.4	15.1	6.4	15.8	23.6	2.62
L 60x30x5	1.71	18.23	34.72	−14.41	19.1	7.8	9.1	19.7	6.3	20.6	28.5	3.62
L 60x40x5	3.54	23.29	39.71	−23.41	18.9	11.3	11.1	20.3	8.6	22.1	28.8	3.99
L 60x40x6	4.16	27.27	46.49	−23.32	18.8	11.2	11.0	20.2	8.6	21.9	28.6	4.71
L 65x50x5	6.32	35.11	57.52	−29.98	20.5	14.7	13.3	22.8	10.7	25.2	32.2	4.98
L 70x50x6	7.92	47.59	79.44	−26.38	22.0	14.3	13.5	24.0	10.7	26.3	33.9	6.68
L 75x50x6	8.36	54.98	93.77	−23.51	23.7	14.2	13.9	25.5	10.8	27.6	36.1	7.55
L 75x50x8	10.76	70.41	120.12	−23.27	23.5	14.0	13.7	25.2	10.7	27.3	35.7	9.75
L 80x40x6	4.93	52.52	99.80	−14.47	25.5	10.5	12.2	26.3	8.5	27.6	38.1	7.81
L 80x40x8	6.34	67.23	128.22	−14.20	25.3	10.3	12.0	26.0	8.4	27.3	37.7	10.11
L 80x60x7	15.36	87.37	143.96	−28.63	25.1	17.4	15.9	27.7	12.8	30.5	39.2	10.35
L 100x50x6	9.92	105.30	199.70	−14.68	32.1	13.3	15.5	33.1	10.7	34.8	47.9	12.40
L 100x50x8	12.78	135.88	258.76	−14.47	31.9	13.1	15.3	32.8	10.6	34.5	47.6	16.16
L 100x65x7	22.03	150.03	257.68	−22.54	31.7	18.3	18.3	33.9	14.0	36.6	48.0	15.67

L 100x65x8	24.80	169.00	290.51	−22.44	31.6	18.2	18.2	33.7	14.0	36.5	47.9	17.72
L 100x65x10	30.15	205.05	352.68	−22.29	31.4	18.1	18.0	33.5	13.9	36.2	47.5	21.61
L 100x75x8	34.64	197.14	324.76	−28.68	31.4	21.8	20.0	34.7	16.0	38.3	49.1	18.59
L 100x75x10	42.17	239.37	394.41	−28.55	31.2	21.6	19.8	34.5	15.9	38.0	48.7	22.81
L 100x75x12	49.47	279.07	459.12	−28.37	31.0	21.4	19.6	34.2	15.9	37.7	48.3	26.83
L 120x80x8	46.63	306.43	522.10	−23.61	38.2	22.8	22.5	41.0	17.4	44.5	58.1	26.15
L 120x80x10	56.82	373.62	637.45	−23.51	37.9	22.7	22.3	40.7	17.2	44.2	57.7	32.09
L 120x80x12	66.66	437.16	746.02	−23.32	37.7	22.4	22.1	40.4	17.1	43.9	57.3	37.79
L 125x75x8	40.93	314.93	556.36	−19.80	40.0	20.9	21.9	42.1	16.3	45.1	59.9	27.45
L 125x75x10	49.86	384.06	679.91	−19.65	39.7	20.7	21.7	41.8	16.1	44.8	59.6	33.70
L 125x75x12	58.47	449.47	796.48	−19.49	39.5	20.5	21.5	41.5	16.1	44.5	59.2	39.71
L 135x65x8	29.45	336.55	647.74	−13.77	43.4	17.1	20.4	44.5	13.8	46.6	64.7	29.77
L 135x65x10	35.86	410.56	793.13	−13.60	43.1	16.9	20.1	44.3	13.7	46.3	64.4	36.57
L 150x75x9	50.22	533.12	1010.98	−14.68	48.2	20.0	23.3	49.6	16.0	52.2	71.8	41.86
L 150x75x10	55.13	585.93	1113.01	−14.63	48.1	19.9	23.2	49.5	16.0	52.0	71.7	46.16
L 150x75x12	64.69	687.89	1309.96	−14.47	47.8	19.7	22.9	49.2	15.9	51.7	71.4	54.54
L 150x75x15	78.59	832.09	1588.23	−14.20	47.5	19.4	22.5	48.8	15.8	51.3	70.8	66.62
L 150x90x10	88.28	679.18	1201.73	−19.80	48.0	25.1	26.3	50.5	19.5	54.2	72.0	49.27
L 150x90x12	103.70	798.20	1414.10	−19.70	47.8	24.9	26.1	50.2	19.4	53.9	71.7	58.26
L 150x90x15	126.00	966.60	1713.92	−19.49	47.4	24.6	25.8	49.8	19.3	53.4	71.1	71.20
L 150x100x10	114.20	751.10	1281.52	−23.65	47.8	28.7	28.2	51.4	21.7	55.8	72.8	51.14

L 150x100x10	114.20	751.10	1281.32	-23.55	47.6	28.7	28.2	51.4	21.7	55.9	72.9	51.14
L 150x100x12	134.20	883.10	1508.03	-23.56	47.6	28.5	28.0	51.1	21.6	55.5	72.5	60.48
L 200x100x10	135.20	1429.20	2704.60	-14.74	64.6	26.8	31.2	66.5	21.5	69.9	96.2	83.60
L 200x100x12	159.20	1687.20	3202.55	-14.68	64.3	26.6	31.1	66.3	21.4	69.6	95.9	99.18
L 200x100x15	193.70	2057.70	3917.31	-14.57	64.0	26.4	30.8	65.8	21.2	69.2	95.5	121.86
L 200x150x12	430.20	2455.20	4051.19	-28.90	63.6	44.4	40.7	70.5	32.5	77.6	99.6	114.51
L 200x150x15	525.70	3001.70	4955.75	-28.85	63.3	44.1	40.4	70.0	32.3	77.1	99.1	140.87

	Bending											
Section	max S _z [cm ³]	max S _u [cm ³]	max S _v [cm ³]	W _{y,min} [cm ³]	W _{y,max} [cm ³]	W _{z,min} [cm ³]	W _{z,max} [cm ³]	W _{u,min} [cm ³]	W _{u,max} [cm ³]	W _{v,min} [cm ³]	W _{v,max} [cm ³]	W _y [cm ³]
L 30x20x3	0.32	0.63	0.17	−0.49	0.57	−0.35	0.24	−0.70	0.95	−0.30	0.25	0.49
L 30x20x4	0.41	0.80	0.22	−0.63	0.70	−0.42	0.32	−0.90	1.19	−0.37	0.32	0.63
L 40x20x4	0.45	1.29	0.27	−1.09	1.18	−0.51	0.34	−1.47	2.12	−0.48	0.34	1.09
L 40x25x4	0.69	1.44	0.37	−1.15	1.30	−0.75	0.51	−1.62	2.24	−0.66	0.52	1.15
L 45x30x4	1.00	1.91	0.52	−1.50	1.75	−1.09	0.75	−2.15	2.93	−0.94	0.75	1.50
L 50x30x5	1.25	2.76	0.69	−1.84	2.20	−1.30	0.86	−2.63	3.37	−1.14	0.92	1.84
L 60x30x5	1.31	3.72	0.78	−3.15	3.48	−1.54	0.96	−4.25	6.18	−1.43	0.97	3.15
L 60x40x5	2.24	4.28	1.16	−3.36	3.96	−2.48	1.67	−4.82	6.59	−2.12	1.68	3.36
L 60x40x6	2.62	5.04	1.35	−3.93	4.53	−2.81	1.97	−5.67	7.66	−2.42	0.86	3.93
L 65x50x5	3.43	5.50	1.57	−4.08	5.06	−3.76	2.60	−6.35	8.00	−3.04	2.65	4.08
L 70x50x6	4.13	7.24	2.03	−5.53	6.63	−4.50	3.10	−8.22	10.82	−3.76	3.14	5.53
L 75x50x6	4.22	8.06	2.19	−6.31	7.48	−4.69	3.14	−9.10	12.44	−4.02	3.17	6.31
L 75x50x8	5.42	10.43	2.80	−8.10	9.28	−5.75	4.07	−11.74	15.77	−4.94	4.10	8.10
L 80x40x6	2.83	8.02	1.69	−6.83	7.62	−3.39	2.07	−9.14	13.44	−3.14	2.07	6.83
L 80x40x8	3.61	10.37	2.16	−8.71	9.46	−4.12	2.70	−11.84	16.94	−3.83	2.70	8.71
L 80x60x7	6.86	11.33	3.23	−8.50	10.29	−7.39	5.18	−12.98	16.57	−6.05	5.26	8.50
L 100x50x6	4.56	12.76	2.71	−10.93	12.46	−5.65	3.30	−14.57	21.71	−5.22	3.31	10.93

L 100x50x8	5.87	16.61	3.49	−14.06	15.60	−6.93	4.30	−18.99	27.66	−6.42	4.31	14.06
L 100x65x7	8.44	16.65	4.45	−13.23	15.83	−9.69	6.26	−18.74	26.16	−8.36	6.32	13.23
L 100x65x8	9.52	18.82	5.01	−14.92	17.56	−10.68	7.08	−21.18	29.34	−9.23	7.14	14.92
L 100x65x10	11.59	23.01	6.10	−18.09	20.74	−12.49	8.67	−25.86	35.30	−10.82	8.73	18.09
L 100x75x8	12.36	20.42	5.82	−15.33	18.78	−13.52	9.34	−23.38	29.97	−11.06	9.48	15.33
L 100x75x10	15.09	24.98	7.12	−18.66	22.21	−15.89	11.41	−28.51	36.18	−13.02	11.56	18.66
L 100x75x12	17.66	29.36	8.37	−21.83	25.39	−18.04	13.41	−33.32	41.95	−14.82	13.55	21.83
L 120x80x8	14.66	27.91	7.59	−21.98	26.59	−16.81	10.90	−31.56	43.53	−14.37	11.01	21.98
L 120x80x10	17.93	34.27	9.28	−26.78	31.58	−19.80	13.38	−38.70	52.72	−16.96	13.49	26.78
L 120x80x12	21.03	40.36	10.88	−31.41	36.26	−22.53	15.74	−45.49	61.34	−19.35	15.86	31.41
L 125x75x8	13.19	28.70	7.26	−23.47	27.73	−15.53	9.69	−32.47	46.73	−13.74	9.75	23.47
L 125x75x10	16.11	35.20	8.85	−28.61	33.00	−18.27	11.89	−39.86	56.55	−16.20	11.96	28.61
L 125x75x12	18.87	41.46	10.41	−33.46	37.86	−20.76	14.03	−46.92	65.69	−18.44	14.10	33.46
L 135x65x8	10.32	30.54	6.23	−26.44	29.94	−12.96	7.44	−34.95	52.30	−12.07	7.46	26.44
L 135x65x10	12.57	37.49	7.58	−32.17	35.69	−15.20	9.15	−42.99	63.16	−14.17	9.18	32.17
L 150x75x9	15.38	43.08	9.15	−36.90	42.04	−19.06	11.12	−49.17	73.26	−17.61	11.15	36.90
L 150x75x10	16.90	47.48	10.05	−40.48	45.67	−20.57	12.27	−54.25	80.16	−19.02	12.30	40.48
L 150x75x12	19.81	56.05	11.79	−47.46	52.66	−23.39	14.51	−64.11	93.35	−21.67	14.55	47.46
L 150x75x15	23.87	68.35	14.22	−57.37	62.44	−27.22	17.80	−78.23	111.65	−25.29	17.86	57.37
L 150x90x10	23.72	51.58	13.05	−42.05	49.44	−27.66	17.44	−58.50	83.71	−24.47	17.55	42.05

L 150x90x12	27.91	60.91	15.34	−49.35	56.94	−31.58	20.61	−69.10	97.75	−27.99	20.72	49.35
L 150x90x15	33.84	74.29	18.60	−59.73	67.38	−36.92	25.21	−84.24	117.32	−32.80	25.30	59.73
L 150x100x10	28.73	54.54	14.82	−42.91	51.82	−32.79	21.36	−62.00	85.17	−28.03	21.57	42.91
L 150x100x12	33.88	64.51	17.48	−50.43	59.72	−37.53	25.21	−73.20	99.65	−32.13	25.44	50.43
L 200x100x10	30.95	86.12	18.38	−74.37	86.18	−39.50	22.27	−98.37	148.17	−36.45	22.36	74.37
L 200x100x12	36.54	102.11	21.72	−87.49	99.69	−45.24	26.43	−116.80	173.63	−41.80	26.52	87.49
L 200x100x15	44.51	125.33	26.43	−106.15	118.51	−53.00	32.50	−143.60	209.69	−49.06	32.58	106.15
L 200x150x12	76.37	125.90	35.84	−94.46	119.04	−86.50	57.62	−145.40	187.01	−70.52	58.62	94.46
L 200x150x15	93.52	154.86	43.76	−115.39	142.08	−102.77	70.74	−178.40	227.67	−83.90	71.73	115.39

	Bending			Shear						Torsion		Warping
Section	W _z [cm ³]	W _u [cm ³]	W _v [cm ³]	A _y [cm ²]	A _z [cm ²]	A _u [cm ²]	A _v [cm ²]	y _{sc} [mm]	z _{sc} [mm]	I _t [cm ⁴]	W _t [cm ³]	max ω [cm ²]
L 30x20x3	0.24	0.70	0.25	0.28	0.62	0.48	0.67	-3.5	8.4	0.05	0.16	0.00
L 30x20x4	0.32	0.90	0.32	0.38	0.82	0.66	0.89	-3.4	8.3	0.11	0.27	0.00
L 40x20x4	0.34	1.47	0.34	0.32	1.20	0.59	1.24	-2.8	12.7	0.13	0.32	0.00
L 40x25x4	0.51	1.62	0.52	0.46	1.13	0.79	1.21	-4.2	11.6	0.14	0.35	0.00
L 45x30x4	0.75	2.15	0.75	0.57	1.25	0.97	1.35	-5.4	12.8	0.16	0.41	0.00
L 50x30x5	0.86	2.63	0.92	0.50	1.08	1.03	1.14	-4.9	14.8	0.33	0.66	0.00
L 60x30x5	0.96	4.25	0.97	0.60	2.26	1.09	2.34	-4.3	19.1	0.37	0.75	0.00
L 60x40x5	1.67	4.82	1.68	0.95	2.09	1.61	2.26	-7.2	17.1	0.43	0.85	0.00
L 60x40x6	1.97	5.67	0.86	1.14	2.50	1.95	2.70	-7.1	17.0	0.72	1.20	0.00
L 65x50x5	2.60	6.35	2.65	1.30	2.16	2.10	2.44	-10.0	17.4	0.49	0.98	0.00
L 70x50x6	3.10	8.22	3.14	1.49	2.85	2.47	3.14	-9.5	19.3	0.88	1.47	0.00
L 75x50x6	3.14	9.10	3.17	1.44	3.13	2.41	3.39	-9.1	21.4	0.92	1.53	0.00
L 75x50x8	4.07	11.74	4.10	1.91	4.16	3.28	4.49	-8.9	21.2	2.09	2.61	0.00
L 80x40x6	2.07	9.14	2.07	0.95	3.62	1.73	3.75	-5.8	25.5	0.88	1.47	0.00
L 80x40x8	2.70	11.84	2.70	1.28	4.81	2.38	4.97	-5.6	25.4	2.00	2.50	0.00
L 80x60x7	5.18	12.98	5.26	2.15	3.74	3.51	4.19	-11.7	21.6	1.63	2.32	0.00
L 100x50x6	3.30	14.57	3.31	1.20	4.54	2.15	4.71	-7.5	32.1	1.12	1.86	0.00

L 100x50x8	4.30	18.99	4.31	1.60	6.03	2.90	6.25	−7.3	32.0	2.55	3.19	0.00
L 100x65x7	6.26	18.74	6.32	2.15	4.91	3.61	5.29	−11.6	28.8	1.98	2.83	0.00
L 100x65x8	7.08	21.18	7.14	2.44	5.61	4.14	6.03	−11.5	28.7	2.90	3.62	0.00
L 100x65x10	8.67	25.86	8.73	3.05	6.99	5.24	7.51	−11.3	28.6	5.48	5.48	0.00
L 100x75x8	9.34	23.38	9.48	3.07	5.35	5.00	5.99	−14.7	27.0	3.07	3.84	0.00
L 100x75x10	11.41	28.51	11.56	3.82	6.66	6.30	7.44	−14.5	26.9	5.81	5.81	0.00
L 100x75x12	13.41	33.32	13.55	4.57	7.97	7.67	8.88	−14.3	26.7	9.79	8.16	0.00
L 120x80x8	10.90	31.56	11.01	3.08	6.70	5.14	7.26	−14.7	34.3	3.55	4.44	0.00
L 120x80x10	13.38	38.70	13.49	3.83	8.34	6.45	9.03	−14.5	34.2	6.73	6.73	0.00
L 120x80x12	15.74	45.49	15.86	4.57	9.98	7.81	10.78	−14.3	34.0	11.35	9.46	0.00
L 125x75x8	9.69	32.47	9.75	2.71	7.21	4.63	7.66	−12.8	37.4	3.55	4.44	0.00
L 125x75x10	11.89	39.86	11.96	3.36	8.98	5.82	9.52	−12.6	37.3	6.73	6.73	0.00
L 125x75x12	14.03	46.92	14.10	4.03	10.74	7.05	11.37	−12.4	37.1	11.35	9.46	0.00
L 135x65x8	7.44	34.95	7.46	2.03	8.25	3.66	8.53	−9.4	43.8	3.55	4.44	0.00
L 135x65x10	9.15	42.99	9.18	2.52	10.28	4.61	10.62	−9.2	43.8	6.73	6.73	0.00
L 150x75x9	11.12	49.17	11.15	2.71	10.23	4.84	10.61	−11.2	48.1	5.66	6.29	0.00
L 150x75x10	12.27	54.25	12.30	3.00	11.34	5.39	11.76	−11.1	48.1	7.65	7.65	0.00
L 150x75x12	14.51	64.11	14.55	3.59	13.58	6.53	14.06	−10.9	48.0	12.92	10.77	0.00
L 150x75x15	17.80	78.23	17.86	4.51	16.92	8.37	17.49	−10.6	47.7	24.48	16.32	0.00
L 150x90x10	17.44	58.50	17.55	4.05	10.83	6.96	11.48	−15.4	45.0	8.15	8.15	0.00

L 150x90x12	20.61	69.10	20.72	4.84	12.95	8.39	13.72	−15.2	44.8	13.78	11.48	0.00
L 150x90x15	25.21	84.24	25.30	6.06	16.11	10.66	17.05	−14.8	44.5	26.17	17.45	0.00
L 150x100x10	21.36	62.00	21.57	4.81	10.49	8.06	11.36	−18.4	43.1	8.49	8.49	0.00
L 150x100x12	25.21	73.20	25.44	5.74	12.54	9.69	13.57	−18.2	42.9	14.36	11.97	0.00
L 200x100x10	22.27	98.37	22.36	4.02	15.22	7.14	15.78	−15.1	64.3	10.48	10.48	0.00
L 200x100x12	26.43	116.80	26.52	4.81	18.20	8.61	18.87	−15.0	64.3	17.70	14.75	0.00
L 200x100x15	32.50	143.60	32.58	6.01	22.66	10.86	23.49	−14.7	64.1	33.65	22.43	0.00
L 200x150x12	57.62	145.40	58.62	9.30	16.16	15.08	18.15	−30.1	54.8	20.58	17.15	0.00
L 200x150x15	70.74	178.40	71.73	11.58	20.09	18.92	22.56	−29.8	54.6	39.27	26.18	0.00

	Warping				Stability				Plasticity			
Section	I _ω [cm ⁶]	i _ω [mm]	W _ω [cm ⁴]	max S _ω [cm ⁴]	r _u [mm]	r _v [mm]	r _{u,SC} [mm]	r _{v,SC} [mm]	W _{pl,y} [cm ³]	W _{pl,y,pure} [cm ³]	W _{pl,z} [cm ³]	W _{pl,z,pure} [cm ³]
L 30x20x3	0.00	0.0	0.00	0.00	-3.4	19.0	32.5	-16.4	1.13	0.89	0.55	0.48
L 30x20x4	0.00	0.0	0.00	0.00	-3.2	17.7	30.8	-16.2	1.46	1.15	0.72	0.61
L 40x20x4	0.00	0.0	0.00	0.00	-4.5	24.8	36.7	-28.1	2.49	1.96	0.77	0.64
L 40x25x4	0.00	0.0	0.00	0.00	-4.4	24.1	40.6	-23.4	2.66	2.08	1.15	1.01
L 45x30x4	0.00	0.0	0.00	0.00	-4.7	27.8	48.3	-24.3	3.45	2.71	1.66	1.46
L 50x30x5	0.00	0.0	0.00	0.00	-5.6	30.2	49.7	-30.6	5.13	4.01	2.09	1.81
L 60x30x5	0.00	0.0	0.00	0.00	-6.6	37.7	56.0	-42.1	7.14	5.61	2.16	1.87
L 60x40x5	0.00	0.0	0.00	0.00	-6.4	37.4	64.8	-32.5	7.72	6.06	3.70	3.28
L 60x40x6	0.00	0.0	0.00	0.00	-6.2	36.3	63.4	-32.2	9.11	7.14	4.40	3.84
L 65x50x5	0.00	0.0	0.00	0.00	-5.4	41.6	77.1	-25.9	9.41	7.47	5.76	5.06
L 70x50x6	0.00	0.0	0.00	0.00	-6.8	43.9	78.7	-33.5	12.78	10.08	6.89	6.07
L 75x50x6	0.00	0.0	0.00	0.00	-7.9	46.6	81.0	-40.4	14.54	11.41	6.95	6.18
L 75x50x8	0.00	0.0	0.00	0.00	-7.6	44.6	78.2	-40.1	18.87	14.77	9.14	7.91
L 80x40x6	0.00	0.0	0.00	0.00	-9.1	51.4	76.0	-56.5	15.38	12.08	4.61	4.07
L 80x40x8	0.00	0.0	0.00	0.00	-8.7	48.8	72.6	-55.9	19.93	15.64	6.14	5.14
L 80x60x7	0.00	0.0	0.00	0.00	-7.1	50.5	92.7	-34.2	19.63	15.55	11.53	10.10
L 100x50x6	0.00	0.0	0.00	0.00	-11.6	65.5	96.9	-70.9	24.45	19.21	7.22	6.56

L 100x50x8	0.00	0.0	0.00	0.00	−11.0	62.9	93.5	−70.2	31.87	25.02	9.62	8.39
L 100x65x7	0.00	0.0	0.00	0.00	−11.2	63.9	108.6	−56.5	30.23	23.76	13.77	12.43
L 100x65x8	0.00	0.0	0.00	0.00	−11.0	62.6	106.9	−56.2	34.21	26.86	15.67	13.98
L 100x65x10	0.00	0.0	0.00	0.00	−10.6	60.4	104.0	−55.7	41.91	32.82	19.41	16.93
L 100x75x8	0.00	0.0	0.00	0.00	−8.9	63.9	116.9	−42.9	35.30	28.00	20.69	18.21
L 100x75x10	0.00	0.0	0.00	0.00	−8.7	61.9	114.1	−42.6	43.31	34.23	25.54	22.15
L 100x75x12	0.00	0.0	0.00	0.00	−8.6	59.9	111.4	−42.4	50.97	40.18	30.26	25.85
L 120x80x8	0.00	0.0	0.00	0.00	−12.9	76.3	131.9	−65.1	50.29	39.54	23.90	21.54
L 120x80x10	0.00	0.0	0.00	0.00	−12.5	74.1	129.0	−64.5	61.84	48.51	29.63	26.25
L 120x80x12	0.00	0.0	0.00	0.00	−12.2	72.0	126.1	−64.2	72.97	57.14	35.24	30.70
L 125x75x8	0.00	0.0	0.00	0.00	−14.4	79.4	129.9	−77.3	53.33	41.79	21.19	19.29
L 125x75x10	0.00	0.0	0.00	0.00	−13.9	77.0	126.8	−76.6	65.56	51.30	26.34	23.47
L 125x75x12	0.00	0.0	0.00	0.00	−13.6	74.9	123.9	−76.2	77.36	60.44	31.41	27.40
L 135x65x8	0.00	0.0	0.00	0.00	−15.6	90.0	130.0	−97.8	58.80	46.29	16.33	14.79
L 135x65x10	0.00	0.0	0.00	0.00	−15.0	87.1	126.4	−97.0	72.26	56.86	20.45	17.91
L 150x75x9	0.00	0.0	0.00	0.00	−17.4	98.3	145.4	−106.3	82.52	64.83	24.35	22.13
L 150x75x10	0.00	0.0	0.00	0.00	−17.0	97.0	143.7	−105.9	91.00	71.48	27.06	24.25
L 150x75x12	0.00	0.0	0.00	0.00	−16.6	94.3	140.3	−105.2	107.56	84.45	32.47	28.30
L 150x75x15	0.00	0.0	0.00	0.00	−16.0	90.6	135.3	−104.5	131.41	103.10	40.55	33.90
L 150x90x10	0.00	0.0	0.00	0.00	−16.8	93.6	154.1	−92.2	95.83	74.99	38.20	34.57

L 150x90x12	0.00	0.0	0.00	0.00	−16.4	91.5	151.3	−91.6	113.40	88.64	45.60	40.56
L 150x90x15	0.00	0.0	0.00	0.00	−16.0	88.4	147.1	−91.0	138.77	108.29	56.53	48.98
L 150x100x10	0.00	0.0	0.00	0.00	−15.6	93.7	163.3	−80.8	98.43	77.22	46.83	42.07
L 150x100x12	0.00	0.0	0.00	0.00	−15.3	91.7	160.5	−80.3	116.55	91.30	55.80	49.48
L 200x100x10	0.00	0.0	0.00	0.00	−23.5	132.5	196.0	−142.4	164.91	129.56	48.16	44.62
L 200x100x12	0.00	0.0	0.00	0.00	−22.7	129.8	192.6	−141.4	195.67	153.68	57.82	52.46
L 200x100x15	0.00	0.0	0.00	0.00	−22.0	126.2	188.0	−140.2	240.46	188.77	72.24	63.56
L 200x150x12	0.00	0.0	0.00	0.00	−17.4	127.8	235.3	−85.2	216.96	171.66	126.53	112.26
L 200x150x15	0.00	0.0	0.00	0.00	−17.0	125.0	231.5	−84.6	267.37	211.11	156.61	137.52

	Plasticity											
Section	$W_{pl,u}$ [cm ³]	$W_{pl,v}$ [cm ³]	$\alpha_{pl,y}$ [--]	$\alpha_{pl,y,pure}$ [--]	$\alpha_{pl,z}$ [--]	$\alpha_{pl,z,pure}$ [--]	$\alpha_{pl,u}$ [--]	$\alpha_{pl,v}$ [--]	$A_{pl,y}$ [cm ²]	$A_{pl,z}$ [cm ²]	$A_{pl,u}$ [cm ²]	$A_{pl,v}$ [cm ²]
L 30x20x3	1.24	0.50	2.296	1.812	2.248	1.975	1.774	2.044	0.55	0.85	0.85	1.00
L 30x20x4	1.59	0.64	2.322	1.823	2.276	1.926	1.780	2.030	0.72	1.12	1.10	1.31
L 40x20x4	2.57	0.74	2.278	1.790	2.288	1.919	1.743	2.214	0.72	1.52	1.07	1.65
L 40x25x4	2.85	1.08	2.311	1.808	2.244	1.956	1.761	2.082	0.92	1.52	1.40	1.75
L 45x30x4	3.78	1.53	2.309	1.812	2.224	1.963	1.756	2.036	1.12	1.72	1.71	2.02
L 50x30x5	5.46	1.97	2.787	2.179	2.427	2.111	2.076	2.144	1.37	2.38	2.09	2.70
L 60x30x5	7.38	2.15	2.269	1.781	2.247	1.947	1.736	2.222	1.37	2.88	2.05	3.13
L 60x40x5	8.46	3.42	2.299	1.806	2.218	1.969	1.755	2.036	1.88	2.88	2.86	3.38
L 60x40x6	9.97	4.03	2.320	1.819	2.237	1.952	1.759	4.714	2.22	3.42	3.39	4.02
L 65x50x5	10.93	5.03	2.304	1.830	2.216	1.944	1.721	1.900	2.38	3.13	3.62	3.89
L 70x50x6	14.35	6.21	2.309	1.821	2.220	1.956	1.746	1.977	2.82	4.02	4.31	4.85
L 75x50x6	15.94	6.45	2.303	1.808	2.211	1.967	1.752	2.035	2.82	4.32	4.31	5.09
L 75x50x8	20.64	8.34	2.330	1.823	2.244	1.942	1.758	2.035	3.68	5.68	5.62	6.67
L 80x40x6	15.90	4.62	2.252	1.769	2.232	1.970	1.739	2.228	2.22	4.62	3.30	5.03
L 80x40x8	20.57	5.98	2.287	1.795	2.279	1.908	1.737	2.212	2.88	6.08	4.28	6.60
L 80x60x7	22.52	10.16	2.310	1.829	2.225	1.948	1.735	1.930	3.96	5.35	6.04	6.60
L 100x50x6	25.30	7.39	2.237	1.757	2.189	1.989	1.737	2.235	2.82	5.82	4.20	6.34

L 100x50x8	32.94	9.58	2.266	1.779	2.237	1.951	1.735	2.222	3.68	7.68	5.48	8.36
L 100x65x7	32.91	13.02	2.285	1.796	2.198	1.984	1.756	2.059	4.30	6.75	6.57	7.89
L 100x65x8	37.22	14.68	2.293	1.800	2.214	1.976	1.757	2.056	4.88	7.68	7.44	8.96
L 100x65x10	45.52	17.93	2.316	1.814	2.239	1.954	1.760	2.054	6.00	9.50	9.16	11.07
L 100x75x8	40.52	18.29	2.302	1.826	2.216	1.951	1.733	1.929	5.68	7.68	8.67	9.46
L 100x75x10	49.62	22.36	2.321	1.835	2.239	1.941	1.740	1.934	7.00	9.50	10.69	11.69
L 100x75x12	58.27	26.27	2.335	1.841	2.258	1.929	1.749	1.939	8.28	11.28	12.65	13.86
L 120x80x8	55.19	22.40	2.288	1.799	2.191	1.976	1.749	2.035	6.08	9.28	9.29	10.94
L 120x80x10	67.79	27.43	2.309	1.811	2.215	1.963	1.752	2.033	7.50	11.50	11.46	13.54
L 120x80x12	79.87	32.27	2.323	1.819	2.238	1.950	1.756	2.035	8.88	13.68	13.57	16.08
L 125x75x8	56.90	20.64	2.273	1.781	2.186	1.990	1.752	2.116	5.68	9.68	8.62	11.03
L 125x75x10	69.88	25.26	2.292	1.793	2.215	1.974	1.753	2.112	7.00	12.00	10.63	13.65
L 125x75x12	82.34	29.73	2.312	1.806	2.239	1.953	1.755	2.108	8.28	14.28	12.57	16.22
L 135x65x8	60.59	16.85	2.224	1.751	2.196	1.989	1.734	2.259	4.88	10.48	7.23	11.34
L 135x65x10	74.40	20.63	2.246	1.767	2.235	1.957	1.731	2.247	6.00	13.00	8.89	14.05
L 150x75x9	85.40	24.93	2.237	1.757	2.189	1.989	1.737	2.236	6.34	13.10	9.46	14.28
L 150x75x10	94.15	27.45	2.248	1.766	2.206	1.977	1.735	2.231	7.00	14.50	10.43	15.80
L 150x75x12	111.19	32.34	2.266	1.780	2.238	1.951	1.734	2.223	8.28	17.28	12.33	18.80
L 150x75x15	135.65	39.46	2.291	1.797	2.278	1.904	1.734	2.209	10.12	21.38	15.06	23.21
L 150x90x10	102.24	37.04	2.279	1.783	2.191	1.983	1.748	2.110	8.50	14.50	12.91	16.52

L 150x90x12	120.87	43.70	2.298	1.796	2.213	1.968	1.749	2.109	10.08	17.28	15.31	19.67
L 150x90x15	147.65	53.33	2.323	1.813	2.243	1.943	1.753	2.108	12.37	21.38	18.80	24.28
L 150x100x10	108.04	43.77	2.294	1.799	2.193	1.970	1.743	2.029	9.50	14.50	14.52	17.09
L 150x100x12	127.80	51.66	2.311	1.810	2.213	1.962	1.746	2.031	11.28	17.28	17.25	20.35
L 200x100x10	170.76	49.99	2.217	1.742	2.163	2.004	1.736	2.235	9.50	19.50	14.15	21.28
L 200x100x12	202.52	59.14	2.237	1.757	2.187	1.985	1.734	2.230	11.28	23.28	16.81	25.38
L 200x100x15	248.65	72.47	2.265	1.778	2.223	1.956	1.732	2.224	13.87	28.88	20.69	31.44
L 200x150x12	249.41	112.36	2.297	1.817	2.196	1.948	1.715	1.917	17.28	23.28	26.38	28.73
L 200x150x15	307.01	138.00	2.317	1.830	2.214	1.944	1.721	1.924	21.37	28.87	32.66	35.61

	Plasticity											
Section	N _{pl} [kN]	V _{pl,y} [kN]	V _{pl,z} [kN]	V _{pl,u} [kN]	V _{pl,v} [kN]	M _{pl,y} [kNm]	M _{pl,z} [kNm]	M _{pl,u} [kNm]	M _{pl,v} [kNm]	y _{pl} [mm]	z _{pl} [mm]	u _{pl} [mm]
L 30x20x3	33.541	7.530	11.600	11.481	13.626	0.27	0.13	0.29	0.12	-2.6	4.0	-0.3
L 30x20x4	43.646	9.769	15.196	14.900	17.796	0.34	0.17	0.37	0.15	-2.3	3.7	-0.3
L 40x20x4	53.046	9.769	20.623	14.512	22.385	0.58	0.18	0.60	0.17	-2.0	3.1	-0.5
L 40x25x4	57.746	12.482	20.623	18.994	23.712	0.62	0.27	0.67	0.25	-3.2	4.6	-0.4
L 45x30x4	67.254	15.196	23.336	23.217	27.453	0.81	0.39	0.89	0.36	-4.2	5.8	-0.4
L 50x30x5	88.759	18.656	32.223	28.296	36.590	1.21	0.49	1.28	0.46	-3.6	5.3	-0.5
L 60x30x5	100.509	18.656	39.007	27.778	42.423	1.68	0.51	1.73	0.50	-3.3	4.7	-0.7
L 60x40x5	112.538	25.439	39.007	38.845	45.904	1.81	0.87	1.99	0.80	-5.7	7.8	-0.5
L 60x40x6	133.453	30.120	46.402	46.026	54.534	2.14	1.03	2.34	0.95	-5.4	7.6	-0.5
L 65x50x5	130.163	32.223	42.399	49.100	52.829	2.21	1.35	2.57	1.18	-8.3	10.7	-0.3
L 70x50x6	161.983	38.261	54.542	58.512	65.863	3.00	1.62	3.37	1.46	-7.5	10.2	-0.5
L 75x50x6	169.033	38.261	58.613	58.465	69.010	3.42	1.63	3.75	1.52	-7.3	9.8	-0.7
L 75x50x8	221.203	49.929	77.065	76.311	90.520	4.43	2.15	4.85	1.96	-6.6	9.4	-0.6
L 80x40x6	161.983	30.120	62.683	44.825	68.220	3.61	1.08	3.74	1.09	-4.5	6.4	-1.0
L 80x40x8	211.803	39.075	82.492	58.114	89.556	4.68	1.44	4.83	1.40	-4.0	6.1	-0.9
L 80x60x7	220.408	53.660	72.655	81.915	89.484	4.61	2.71	5.29	2.39	-9.4	12.5	-0.5
L 100x50x6	204.663	38.261	78.964	57.025	86.083	5.75	1.70	5.95	1.74	-6.1	8.2	-1.2

L 100x50x8	268.583	49.929	104.200	74.377	113.370	7.49	2.26	7.74	2.25	−5.6	7.8	−1.2
L 100x65x7	262.446	58.409	91.650	89.078	107.038	7.10	3.24	7.73	3.06	−9.5	12.8	−1.0
L 100x65x8	297.696	66.211	104.200	100.973	121.584	8.04	3.68	8.75	3.45	−9.2	12.6	−1.0
L 100x65x10	366.786	81.406	128.893	124.218	150.141	9.85	4.56	10.70	4.21	−8.5	12.2	−0.9
L 100x75x8	316.496	77.065	104.200	117.616	128.401	8.30	4.86	9.52	4.30	−12.0	15.8	−0.6
L 100x75x10	390.286	94.974	128.893	145.022	158.609	10.18	6.00	11.66	5.25	−11.2	15.4	−0.6
L 100x75x12	462.196	112.341	153.044	171.568	188.043	11.98	7.11	13.69	6.17	−10.5	15.0	−0.5
L 120x80x8	364.029	82.492	125.909	126.007	148.406	11.82	5.62	12.97	5.26	−12.2	16.0	−1.1
L 120x80x10	449.569	101.758	156.029	155.551	183.669	14.53	6.96	15.93	6.45	−11.5	15.5	−1.1
L 120x80x12	533.229	120.481	185.607	184.106	218.136	17.15	8.28	18.77	7.58	−10.8	15.1	−1.0
L 125x75x8	364.029	77.065	131.336	116.995	149.675	12.53	4.98	13.37	4.85	−10.6	14.0	−1.4
L 125x75x10	449.569	94.974	162.813	144.186	185.266	15.41	6.19	16.42	5.94	−9.9	13.6	−1.3
L 125x75x12	533.229	112.341	193.747	170.556	220.130	18.18	7.38	19.35	6.99	−9.3	13.2	−1.3
L 135x65x8	364.029	66.211	142.190	98.144	153.861	13.82	3.84	14.24	3.96	−7.7	10.5	−1.7
L 135x65x10	449.569	81.406	176.381	120.609	190.580	16.98	4.81	17.48	4.85	−7.1	10.1	−1.6
L 150x75x9	460.492	86.087	177.669	128.306	193.687	19.39	5.72	20.07	5.86	−9.2	12.3	−1.9
L 150x75x10	508.902	94.974	196.732	141.578	214.340	21.39	6.36	22.12	6.45	−8.9	12.1	−1.8
L 150x75x12	604.312	112.341	234.450	167.349	255.081	25.28	7.63	26.13	7.60	−8.3	11.8	−1.8
L 150x75x15	743.902	137.373	290.010	204.308	314.846	30.88	9.53	31.88	9.27	−7.5	11.3	−1.7
L 150x90x10	544.152	115.326	196.732	175.146	224.166	22.52	8.98	24.03	8.70	−12.6	16.5	−1.6

L 150x90x12	646.612	136.763	234.450	207.782	266.828	26.65	10.72	28.40	10.27	-12.0	16.1	-1.6
L 150x90x15	796.777	167.901	290.010	255.055	329.416	32.61	13.29	34.70	12.53	-11.0	15.6	-1.5
L 150x100x10	567.652	128.893	196.732	196.995	231.917	23.13	11.01	25.39	10.29	-15.3	19.6	-1.3
L 150x100x12	674.812	153.044	234.450	233.991	276.078	27.39	13.11	30.03	12.14	-14.6	19.2	-1.3
L 200x100x10	687.207	128.893	264.571	191.948	288.654	38.75	11.32	40.13	11.75	-12.8	16.7	-2.5
L 200x100x12	817.867	153.044	315.857	228.100	344.332	45.98	13.59	47.59	13.90	-12.3	16.3	-2.5
L 200x100x15	1010.332	188.252	391.768	280.777	426.533	56.51	16.98	58.43	17.03	-11.4	15.7	-2.4
L 200x150x12	958.867	234.450	315.857	357.897	389.826	50.99	29.74	58.61	26.40	-25.9	31.8	-1.2
L 200x150x15	1186.582	290.010	391.768	443.068	483.085	62.83	36.80	72.15	32.43	-24.7	31.2	-1.1

	Plasticity	Other									
Section	v _{pl} [mm]	N _u [kN]	G [kg/m]	A _m [m ² /m]	V [cm ³ /m]	A _m /V [1/m]	d _{0,1} [mm]	d _{0,2} [mm]	w ₁ [mm]	w ₂ [mm]	w ₃ [mm]
L 30x20x3	2.3	33.541	1.1	0.097	142.70	676.945	0.0	0.0	0.0	0.0	0.0
L 30x20x4	2.1	43.646	1.5	0.097	185.70	520.194	0.0	0.0	0.0	0.0	0.0
L 40x20x4	2.3	53.046	1.8	0.117	225.70	516.615	0.0	0.0	0.0	0.0	0.0
L 40x25x4	2.8	57.746	1.9	0.127	245.70	515.263	0.0	0.0	0.0	0.0	0.0
L 45x30x4	3.2	67.254	2.2	0.146	286.20	510.482	0.0	0.0	0.0	0.0	0.0
L 50x30x5	3.4	88.759	3.0	0.156	377.70	412.232	11.0	0.0	35.0	0.0	0.0
L 60x30x5	3.5	100.509	3.4	0.176	427.70	410.802	13.0	0.0	35.0	0.0	0.0
L 60x40x5	4.3	112.538	3.8	0.195	478.90	406.766	13.0	0.0	35.0	0.0	0.0
L 60x40x6	4.2	133.453	4.5	0.195	567.90	343.018	13.0	0.0	36.0	0.0	0.0
L 65x50x5	4.3	130.163	4.3	0.225	553.90	405.849	17.0	11.0	40.0	0.0	35.0
L 70x50x6	4.9	161.983	5.4	0.234	689.30	339.475	21.0	11.0	41.0	0.0	36.0
L 75x50x6	5.3	169.033	5.6	0.244	719.30	339.219	21.0	11.0	41.0	0.0	36.0
L 75x50x8	5.1	221.203	7.4	0.244	941.30	259.216	21.0	0.0	43.0	0.0	0.0
L 80x40x6	4.8	161.983	5.4	0.234	689.30	339.475	25.0	0.0	46.0	0.0	0.0
L 80x40x8	4.5	211.803	7.1	0.234	901.30	259.625	25.0	0.0	48.0	0.0	0.0
L 80x60x7	5.4	220.408	7.4	0.273	937.90	291.182	25.0	13.0	47.0	0.0	37.0
L 100x50x6	6.1	204.663	6.8	0.293	870.90	336.548	25.0	11.0	48.0	0.0	36.0

L 100x50x8	5.8	268.583	9.0	0.293	1143.00	256.430	28.0	0.0	53.0	0.0	0.0
L 100x65x7	7.4	262.446	8.8	0.321	1117.00	287.735	28.0	17.0	56.0	0.0	42.0
L 100x65x8	7.2	297.696	9.9	0.321	1267.00	253.670	28.0	17.0	53.0	0.0	43.0
L 100x65x10	7.0	366.786	12.3	0.321	1561.00	205.894	28.0	13.0	55.0	0.0	40.0
L 100x75x8	6.9	316.496	10.6	0.341	1347.00	253.452	28.0	21.0	53.0	0.0	44.0
L 100x75x10	6.6	390.286	13.0	0.341	1661.00	205.539	28.0	21.0	55.0	0.0	46.0
L 100x75x12	6.5	462.196	15.4	0.341	1967.00	173.564	28.0	21.0	57.0	0.0	48.0
L 120x80x8	8.7	364.029	12.2	0.391	1549.00	252.163	28.0	21.0	64.0	0.0	45.0
L 120x80x10	8.4	449.569	15.0	0.391	1913.00	204.182	28.0	21.0	60.0	0.0	47.0
L 120x80x12	8.2	533.229	17.8	0.391	2269.00	172.146	28.0	21.0	58.0	0.0	49.0
L 125x75x8	8.8	364.029	12.2	0.391	1549.00	252.163	28.0	21.0	64.0	0.0	45.0
L 125x75x10	8.5	449.569	15.0	0.391	1913.00	204.182	28.0	21.0	65.0	0.0	47.0
L 125x75x12	8.3	533.229	17.8	0.391	2269.00	172.146	28.0	21.0	58.0	0.0	49.0
L 135x65x8	7.9	364.029	12.2	0.391	1549.00	252.163	28.0	17.0	64.0	0.0	43.0
L 135x65x10	7.6	449.569	15.0	0.391	1913.00	204.182	28.0	13.0	75.0	0.0	40.0
L 150x75x9	9.1	460.492	15.4	0.440	1959.00	224.451	25.0	21.0	53.0	113.0	47.0
L 150x75x10	8.9	508.902	17.0	0.440	2165.00	203.095	25.0	21.0	54.0	114.0	48.0
L 150x75x12	8.7	604.312	20.2	0.440	2571.00	171.023	25.0	21.0	56.0	116.0	50.0
L 150x75x15	8.3	743.902	24.8	0.440	3165.00	138.926	25.0	17.0	59.0	119.0	50.0
L 150x90x10	10.3	544.152	18.2	0.470	2315.00	202.894	25.0	25.0	54.0	114.0	54.0

L 150x90x12	10.1	646.612	21.6	0.470	2751.00	170.738	25.0	25.0	56.0	116.0	56.0
L 150x90x15	9.7	796.777	26.6	0.470	3390.00	138.555	25.0	25.0	59.0	119.0	59.0
L 150x100x10	10.6	567.652	19.0	0.490	2415.00	202.774	25.0	28.0	54.0	114.0	57.0
L 150x100x12	10.4	674.812	22.5	0.490	2871.00	170.568	25.0	28.0	56.0	116.0	59.0
L 200x100x10	12.3	687.207	23.0	0.587	2924.00	200.787	28.0	28.0	60.0	140.0	60.0
L 200x100x12	12.0	817.867	27.3	0.587	3480.00	168.707	28.0	28.0	62.0	129.0	62.0
L 200x100x15	11.5	1010.332	33.7	0.587	4299.00	136.567	28.0	28.0	65.0	132.0	65.0
L 200x150x12	13.3	958.867	32.0	0.687	4080.00	168.407	28.0	28.0	62.0	129.0	78.0
L 200x150x15	12.9	1186.582	39.6	0.687	5049.00	136.086	28.0	28.0	65.0	132.0	66.0

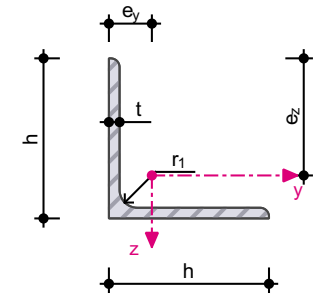


L-equal

Equal Leg Angles

L-equal

- DIN 1028:1994-03
- Feronia



	Geometry				Sectional Area	Bending						
Section	h [mm]	t [mm]	r ₁ [mm]	r ₂ [mm]	A [cm ²]	e _y [mm]	e _z [mm]	I _y [cm ⁴]	I _{yz} [cm ⁴]	I _u [cm ⁴]	I _v [cm ⁴]	I _p [cm ⁴]
L 45x4	45.0	4.0	7.0	3.5	3.49	12.3	32.7	6.43	3.75	10.18	2.68	12.86
L 45x5	45.0	5.0	7.0	3.5	4.30	12.8	32.2	6.43	0.92	12.42	3.26	15.68
L 50x6	50.0	6.0	7.0	3.5	5.69	14.5	35.5	12.80	7.43	20.34	5.34	25.68
L 55x6	55.0	6.0	8.0	4.0	6.31	15.6	39.4	17.30	10.13	27.39	7.18	34.57
L 65x6	65.0	6.0	9.0	4.5	7.52	18.0	47.0	29.30	17.28	46.26	12.10	58.36
L 70x8	70.0	8.0	10.0	5.0	10.66	20.1	49.9	47.45	27.95	74.88	19.63	94.52
L 80x6	80.0	6.0	10.0	5.0	9.35	21.7	58.3	55.80	32.66	88.50	23.13	111.63
L 90x6	90.0	6.0	10.0	5.0	10.54	24.2	65.8	80.94	47.73	128.06	33.37	161.43
L 100x6	100.0	6.0	12.0	6.0	11.80	26.4	73.6	111.47	65.58	175.86	46.20	222.07
L 100x8	100.0	8.0	12.0	6.0	15.50	27.4	72.6	145.00	85.26	229.78	59.86	289.64
L 100x12	100.0	12.0	12.0	6.0	22.70	29.0	71.0	207.00	121.49	327.59	85.74	413.34
L 110x10	110.0	10.0	12.0	6.0	21.20	30.7	79.3	239.00	140.88	379.00	98.35	477.35
L 120x8	120.0	8.0	13.0	6.5	18.74	32.2	87.8	256.08	151.09	405.32	105.47	510.79
L 150x14	150.0	14.0	16.0	8.0	40.30	42.1	107.9	845.00	496.56	1342.42	348.22	1690.63

	Bending											
Section	$I_{p,SC}$ [cm ⁴]	α [deg]	i_y [mm]	i_{yz} [mm]	i_u [mm]	i_v [mm]	i_p [mm]	$i_{p,SC}$ [mm]	max S_y [cm ³]	max S_u [cm ³]	max S_v [cm ³]	$W_{y,min}$ [cm ³]
L 45x4	20.33	−45.00	13.6	10.4	17.1	8.8	19.2	24.1	2.04	2.55	0.66	−1.61
L 45x5	24.79	−45.00	13.6	4.6	17.0	8.7	19.2	24.0	2.51	3.13	0.80	−1.27
L 50x6	40.61	−45.00	15.0	11.4	18.9	9.7	21.2	26.7	3.69	4.62	1.18	−2.89
L 55x6	54.69	−45.00	16.6	12.7	20.8	10.7	23.5	29.4	4.51	5.63	1.45	−3.56
L 65x6	92.40	−45.00	19.7	15.2	24.8	12.7	27.9	35.1	6.40	7.99	2.06	−5.09
L 70x8	149.52	−45.00	21.0	16.2	26.5	13.6	29.7	37.5	9.70	12.12	3.11	−7.69
L 80x6	176.80	−45.00	24.4	18.7	30.8	15.7	34.5	43.5	9.89	12.32	3.17	−7.80
L 90x6	255.88	−45.00	27.7	21.3	34.9	17.8	39.2	49.3	12.65	15.76	4.04	−10.03
L 100x6	351.42	−45.00	30.7	23.6	38.6	19.8	43.4	54.6	15.68	19.48	5.04	−12.47
L 100x8	459.05	−45.00	30.6	23.5	38.5	19.7	43.3	54.4	20.54	25.61	6.56	−16.22
L 100x12	654.30	−45.00	30.2	23.1	38.0	19.4	42.7	53.7	29.60	37.09	9.45	−23.33
L 110x10	757.18	−45.00	33.6	25.8	42.3	21.5	47.5	59.8	30.81	38.49	9.79	−24.26
L 120x8	809.91	−45.00	36.9	28.4	46.5	23.7	52.2	65.7	30.01	37.40	9.56	−23.78
L 150x14	2681.96	−45.00	45.8	35.1	57.7	29.4	64.8	81.6	80.06	100.05	25.41	−62.79

	Bending							Shear				
Section	W _{y,max} [cm ³]	W _{v,min} [cm ³]	W _{v,max} [cm ³]	W _y [cm ³]	W _u [cm ³]	W _v [cm ³]	W _{y,cat} [cm ³]	A _y [cm ²]	A _u [cm ²]	A _v [cm ²]	y _{sc} [mm]	z _{sc} [mm]
L 45x4	2.17	−1.53	1.55	1.61	3.20	1.53	1.97	1.06	1.45	1.43	−10.3	10.3
L 45x5	1.45	−1.80	1.82	1.27	3.90	1.80	1.97	0.89	1.83	1.77	−10.3	10.3
L 50x6	3.67	−2.61	2.80	2.89	5.75	2.61	3.61	1.75	2.46	2.36	−11.5	11.5
L 55x6	4.60	−3.25	3.41	3.56	7.04	3.25	4.40	1.95	2.69	2.60	−12.6	12.6
L 65x6	6.78	−4.74	4.89	5.09	10.07	4.74	6.23	2.33	3.17	3.10	−15.0	15.0
L 70x8	9.88	−6.92	7.31	7.69	15.13	6.92	9.49	3.32	4.57	4.41	−16.1	16.1
L 80x6	10.67	−7.55	7.68	7.80	15.64	7.55	9.57	2.86	3.90	3.84	−18.7	18.7
L 90x6	13.90	−9.77	9.87	10.03	20.12	9.77	12.28	3.25	4.42	4.34	−21.2	21.2
L 100x6	17.66	−12.37	12.28	12.47	24.87	12.37	15.13	3.63	4.89	4.82	−23.4	23.4
L 100x8	21.94	−15.47	15.91	16.22	32.50	15.47	19.90	4.77	6.53	6.39	−23.4	23.4
L 100x12	29.65	−20.89	22.46	23.33	46.33	20.89	29.20	7.09	9.92	9.46	−23.0	23.0
L 110x10	32.12	−22.64	23.73	24.26	48.73	22.64	30.10	6.55	9.03	8.77	−25.7	25.7
L 120x8	32.92	−23.13	23.45	23.78	47.77	23.13	29.16	5.78	7.86	7.72	−28.2	28.2
L 150x14	82.71	−58.54	61.71	62.79	126.56	58.54	78.20	12.45	17.27	16.74	−35.1	35.1

	Torsion		Warping					Stability		Plasticity		
Section	I_t [cm ⁴]	W_t [cm ³]	max ω [cm ²]	I_ω [cm ⁶]	i_ω [mm]	W_ω [cm ⁴]	max S_ω [cm ⁴]	r_v [mm]	$r_{u,SC}$ [mm]	$W_{pl,y}$ [cm ³]	$W_{pl,y,pure}$ [cm ³]	$W_{pl,u}$ [cm ³]
L 45x4	0.18	0.45	0.00	0.00	0.0	0.00	0.00	34.1	63.2	3.63	3.06	5.23
L 45x5	0.34	0.68	0.00	0.00	0.0	0.00	0.00	32.7	60.4	4.47	3.74	6.39
L 50x6	0.65	1.08	0.00	0.00	0.0	0.00	0.00	35.2	67.7	6.60	5.49	9.38
L 55x6	0.72	1.20	0.00	0.00	0.0	0.00	0.00	39.6	75.3	8.05	6.72	11.48
L 65x6	0.87	1.44	0.00	0.00	0.0	0.00	0.00	47.7	90.1	11.39	9.55	16.32
L 70x8	2.17	2.71	0.00	0.00	0.0	0.00	0.00	49.8	95.1	17.32	14.43	24.67
L 80x6	1.08	1.80	0.00	0.00	0.0	0.00	0.00	59.4	112.3	17.52	14.74	25.17
L 90x6	1.23	2.04	0.00	0.00	0.0	0.00	0.00	66.5	126.2	22.38	18.81	32.13
L 100x6	1.37	2.28	0.00	0.00	0.0	0.00	0.00	75.9	142.1	27.66	23.38	39.93
L 100x8	3.19	3.99	0.00	0.00	0.0	0.00	0.00	73.1	139.3	36.42	30.54	52.16
L 100x12	10.39	8.66	0.00	0.00	0.0	0.00	0.00	68.9	133.9	53.03	43.92	75.08
L 110x10	6.79	6.79	0.00	0.00	0.0	0.00	0.00	78.0	150.7	54.80	45.67	78.02
L 120x8	3.87	4.84	0.00	0.00	0.0	0.00	0.00	88.3	168.0	53.10	44.59	76.15
L 150x14	25.35	18.11	0.00	0.00	0.0	0.00	0.00	105.7	205.0	142.46	118.58	202.60

	Plasticity											
Section	W _{pl,v} [cm ³]	α _{pl,y} [--]	α _{pl,y,pure} [--]	α _{pl,u} [--]	α _{pl,v} [--]	A _{pl,y} [cm ²]	A _{pl,u} [cm ²]	N _{pl} [kN]	V _{pl,y} [kN]	V _{pl,u} [kN]	M _{pl,y} [kNm]	M _{pl,u} [kNm]
L 45x4	2.63	2.251	1.899	1.636	1.716	1.72	2.43	82.083	23.336	33.003	0.85	1.20
L 45x5	3.23	3.522	2.946	1.638	1.792	2.13	3.01	101.118	28.831	40.774	1.05	1.47
L 50x6	4.75	2.287	1.901	1.631	1.819	2.82	3.99	133.783	38.261	54.109	1.55	2.17
L 55x6	5.80	2.262	1.889	1.631	1.786	3.12	4.41	148.263	42.331	59.866	1.89	2.65
L 65x6	8.22	2.239	1.878	1.622	1.732	3.72	5.26	176.894	50.472	71.378	2.68	3.76
L 70x8	12.47	2.253	1.877	1.631	1.802	5.28	7.47	250.696	71.638	101.311	4.07	5.70
L 80x6	12.64	2.247	1.890	1.609	1.675	4.62	6.53	219.676	62.683	88.647	4.12	5.79
L 90x6	16.12	2.231	1.875	1.596	1.651	5.22	7.38	247.876	70.824	100.160	5.26	7.41
L 100x6	20.02	2.218	1.875	1.606	1.619	5.82	8.23	277.192	78.964	111.672	6.50	9.16
L 100x8	26.22	2.246	1.883	1.605	1.695	7.68	10.86	364.612	104.200	147.361	8.56	12.04
L 100x12	38.00	2.274	1.883	1.621	1.819	11.28	15.95	533.812	153.044	216.437	12.46	17.43
L 110x10	39.27	2.258	1.882	1.601	1.735	10.50	14.85	497.152	142.461	201.471	12.88	18.09
L 120x8	38.21	2.233	1.875	1.594	1.652	9.28	13.12	440.446	125.909	178.062	12.48	17.58
L 150x14	102.03	2.269	1.888	1.601	1.743	20.02	28.31	947.433	271.626	384.137	33.48	47.03

	Plasticity					Other				
Section	M _{pl,v} [kNm]	y _{pl} [mm]	z _{pl} [mm]	u _{pl} [mm]	v _{pl} [mm]	N _u [kN]	G [kg/m]	A _m [m ² /m]	V [cm ³ /m]	A _m /V [1/m]
L 45x4	0.62	-8.4	8.4	-0.1	0.0	82.083	2.7	0.174	349.00	498.542
L 45x5	0.76	-8.0	8.0	-0.1	0.0	101.118	3.4	0.174	430.00	404.631
L 50x6	1.12	-8.7	8.7	0.0	0.0	133.783	4.5	0.194	569.00	340.933
L 55x6	1.37	-9.8	9.8	-0.1	0.0	148.263	5.0	0.213	631.00	337.770
L 65x6	1.94	-12.2	12.2	-0.1	0.0	176.894	5.9	0.252	752.00	335.471
L 70x8	2.94	-12.4	12.4	-0.1	0.0	250.696	8.4	0.271	1066.00	254.612
L 80x6	3.00	-15.8	15.8	-0.1	0.0	219.676	7.3	0.311	935.00	333.065
L 90x6	3.82	-18.2	18.2	-0.1	0.0	247.876	8.3	0.351	1054.00	333.412
L 100x6	4.76	-20.4	20.4	-0.2	0.0	277.192	9.3	0.390	1180.00	330.253
L 100x8	6.21	-19.5	19.5	-0.1	0.0	364.612	12.2	0.390	1550.00	251.419
L 100x12	8.95	-17.6	17.6	0.0	0.0	533.812	17.8	0.390	2270.00	171.674
L 110x10	9.28	-21.0	21.0	-0.1	0.0	497.152	16.6	0.430	2120.00	202.688
L 120x8	9.06	-24.4	24.4	-0.1	0.0	440.446	14.7	0.469	1874.00	250.182
L 150x14	24.08	-28.6	28.6	-0.1	0.0	947.433	31.6	0.586	4030.00	145.475



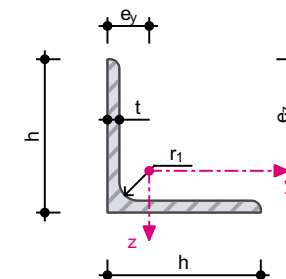
L-equal

■ DIN EN 10056-1:1998-10

■ --

L-equal

Round Edged Equal Leg Angles (Hot Rolled)



	Geometry				Sectional Area	Bending						
Section	h [mm]	t [mm]	r ₁ [mm]	r ₂ [mm]	A [cm ²]	e _y [mm]	e _z [mm]	I _y [cm ⁴]	I _{yz} [cm ⁴]	I _u [cm ⁴]	I _v [cm ⁴]	I _p [cm ⁴]
L 20x20x3	20.0	3.0	3.5	1.8	1.12	6.0	14.0	0.39	0.23	0.62	0.16	0.78
L 25x25x3	25.0	3.0	3.5	1.8	1.42	7.2	17.8	0.80	0.47	1.27	0.33	1.60
L 25x25x4	25.0	4.0	3.5	1.8	1.85	7.6	17.4	1.02	0.59	1.61	0.43	2.04
L 30x30x3	30.0	3.0	5.0	2.5	1.74	8.4	21.6	1.40	0.82	2.22	0.59	2.81
L 30x30x4	30.0	4.0	5.0	2.5	2.27	8.8	21.2	1.80	1.05	2.85	0.75	3.61
L 35x35x4	35.0	4.0	5.0	2.5	2.67	10.0	25.0	2.95	1.73	4.68	1.23	5.91
L 40x40x4	40.0	4.0	6.0	3.0	3.08	11.2	28.8	4.47	2.61	7.09	1.86	8.95
L 40x40x5	40.0	5.0	6.0	3.0	3.79	11.6	28.4	5.43	3.17	8.59	2.26	10.85
L 45x45x5	45.0	4.5	7.0	3.5	3.90	12.6	32.4	7.15	4.17	11.32	2.97	14.29

L 45x45x4.5	45.0	4.5	7.0	3.5	3.90	12.0	32.4	7.15	4.17	11.32	2.97	14.29
L 50x50x4	50.0	4.0	7.0	3.5	3.89	13.6	36.4	8.97	5.25	14.22	3.73	17.95
L 50x50x5	50.0	5.0	7.0	3.5	4.80	14.0	36.0	10.96	6.42	17.38	4.55	21.93
L 50x50x6	50.0	6.0	7.0	3.5	5.69	14.5	35.5	12.84	7.50	20.34	5.34	25.68
L 60x60x5	60.0	5.0	8.0	4.0	5.82	16.4	43.6	19.37	11.34	30.71	8.03	38.74
L 60x60x6	60.0	6.0	8.0	4.0	6.91	16.9	43.1	22.79	13.35	36.14	9.44	45.58
L 60x60x8	60.0	8.0	8.0	4.0	9.03	17.7	42.3	29.15	16.99	46.15	12.16	58.31
L 65x65x7	65.0	7.0	9.0	4.5	8.70	18.5	46.5	33.44	19.56	53.00	13.87	66.87
L 70x70x6	70.0	6.0	9.0	4.5	8.13	19.3	50.7	36.89	21.61	58.50	15.27	73.77
L 70x70x7	70.0	7.0	9.0	4.5	9.40	19.7	50.3	42.30	24.79	67.09	17.50	84.59
L 75x75x6	75.0	6.0	9.0	4.5	8.73	20.5	54.5	45.83	26.89	72.72	18.94	91.66
L 75x75x8	75.0	8.0	9.0	4.5	11.45	21.4	53.6	59.13	34.67	93.80	24.46	118.26
L 80x80x8	80.0	8.0	10.0	5.0	12.27	22.5	57.5	72.24	42.36	114.60	29.88	144.48
L 80x80x10	80.0	10.0	10.0	5.0	15.11	23.4	56.6	87.49	51.11	138.60	36.38	174.98
L 90x90x7	90.0	7.0	11.0	5.5	12.24	24.5	65.5	92.55	54.25	146.80	38.29	185.09
L 90x90x8	90.0	8.0	11.0	5.5	13.89	25.0	65.0	104.36	61.23	165.60	43.13	208.73
L 90x90x9	90.0	9.0	11.0	5.5	15.52	25.4	64.6	115.84	67.96	183.80	47.88	231.68
L 90x90x10	90.0	10.0	11.0	5.5	17.13	25.8	64.2	126.92	74.37	201.30	52.55	253.85
L 100x100x8	100.0	8.0	12.0	6.0	15.51	27.4	72.6	144.83	84.97	229.80	59.86	289.66
L 100x100x10	100.0	10.0	12.0	6.0	19.15	28.2	71.8	176.66	103.64	280.30	73.01	353.31

L 100x100x12	100.0	12.0	12.0	6.0	22.71	29.0	71.0	206.68	120.93	327.60	85.75	413.35
L 120x120x10	120.0	10.0	13.0	6.5	23.18	33.1	86.9	312.95	184.05	497.00	128.90	625.90
L 120x120x12	120.0	12.0	13.0	6.5	27.54	34.0	86.0	367.65	216.05	583.70	151.60	735.30
L 130x130x12	130.0	12.0	14.0	7.0	29.97	36.4	93.6	472.15	277.65	749.80	194.50	944.30
L 150x150x10	150.0	10.0	16.0	8.0	29.27	40.3	109.7	624.05	366.55	990.60	257.50	1248.10
L 150x150x12	150.0	12.0	16.0	8.0	34.83	41.2	108.8	736.70	433.30	1170.00	303.40	1473.40
L 150x150x15	150.0	15.0	16.0	8.0	43.02	42.5	107.5	898.10	527.90	1426.00	370.20	1796.20
L 160x160x15	160.0	15.0	17.0	8.5	46.06	44.9	115.1	1098.80	646.20	1745.00	452.60	2197.60
L 180x180x16	180.0	16.0	18.0	9.0	55.39	50.2	129.8	1682.40	990.60	2673.00	691.80	3364.80
L 180x180x18	180.0	18.0	18.0	9.0	61.91	51.0	129.0	1865.65	1097.35	2963.00	768.30	3731.30
L 200x200x16	200.0	16.0	18.0	9.0	61.79	55.2	144.8	2341.50	1381.50	3723.00	960.00	4683.00
L 200x200x18	200.0	18.0	18.0	9.0	69.11	56.0	144.0	2600.00	1533.00	4133.00	1067.00	5200.00
L 200x200x20	200.0	20.0	18.0	9.0	76.35	56.8	143.2	2850.50	1678.50	4529.00	1172.00	5701.00
L 200x200x24	200.0	24.0	18.0	9.0	90.59	58.4	141.6	3331.00	1953.00	5284.00	1378.00	6662.00
L 250x250x28	250.0	28.0	18.0	9.0	132.50	72.4	177.6	7697.50	4528.50	12226.00	3169.00	15395.00
L 250x250x35	250.0	35.0	18.0	9.0	163.10	75.0	175.0	9264.00	5402.00	14666.00	3862.00	18528.00

	Bending											
Section	I _{p,SC} [cm ⁴]	α [deg]	i _y [mm]	i _{yz} [mm]	i _u [mm]	i _v [mm]	i _p [mm]	i _{p,SC} [mm]	max S _y [cm ³]	max S _u [cm ³]	max S _v [cm ³]	W _{y,min} [cm ³]

L 20x20x3	1.23	−45.00	5.9	4.5	7.4	3.8	8.4	10.5	0.29	0.36	0.09	−0.23
L 25x25x3	2.54	−45.00	7.5	5.7	9.5	4.8	10.6	13.4	0.46	0.58	0.15	−0.36
L 25x25x4	3.21	−45.00	7.4	5.6	9.3	4.8	10.5	13.2	0.59	0.74	0.19	−0.47
L 30x30x3	4.44	−45.00	9.0	6.9	11.3	5.8	12.7	16.0	0.67	0.84	0.22	−0.53
L 30x30x4	5.69	−45.00	8.9	6.8	11.2	5.8	12.6	15.8	0.87	1.09	0.28	−0.69
L 35x35x4	9.35	−45.00	10.5	8.0	13.3	6.8	14.9	18.7	1.21	1.51	0.39	−0.95
L 40x40x4	14.15	−45.00	12.1	9.2	15.2	7.8	17.0	21.4	1.60	2.00	0.52	−1.26
L 40x40x5	17.15	−45.00	12.0	9.1	15.1	7.7	16.9	21.3	1.96	2.45	0.62	−1.54
L 45x45x4.5	22.60	−45.00	13.5	10.3	17.0	8.7	19.1	24.1	2.28	2.84	0.73	−1.80
L 50x50x4	28.39	−45.00	15.2	11.6	19.1	9.8	21.5	27.0	2.55	3.18	0.82	−2.02
L 50x50x5	34.71	−45.00	15.1	11.6	19.0	9.7	21.4	26.9	3.13	3.92	1.01	−2.47
L 50x50x6	40.61	−45.00	15.0	11.5	18.9	9.7	21.2	26.7	3.69	4.62	1.18	−2.91
L 60x60x5	61.33	−45.00	18.2	14.0	23.0	11.8	25.8	32.5	4.59	5.72	1.48	−3.62
L 60x60x6	72.17	−45.00	18.2	13.9	22.9	11.7	25.7	32.3	5.42	6.78	1.74	−4.27
L 60x60x8	92.13	−45.00	18.0	13.7	22.6	11.6	25.4	31.9	7.01	8.77	2.24	−5.51
L 65x65x7	105.81	−45.00	19.6	15.0	24.7	12.6	27.7	34.9	7.36	9.21	2.36	−5.80
L 70x70x6	116.83	−45.00	21.3	16.3	26.8	13.7	30.1	37.9	7.49	9.35	2.40	−5.90
L 70x70x7	133.98	−45.00	21.2	16.2	26.7	13.7	30.0	37.8	8.61	10.77	2.76	−6.79
L 75x75x6	145.25	−45.00	22.9	17.6	28.9	14.7	32.4	40.8	8.66	10.80	2.77	−6.83
L 75x75x8	187.34	−45.00	22.7	17.4	28.6	14.6	32.1	40.4	11.25	14.08	3.59	−8.85

L 80x80x8	228.89	−45.00	24.3	18.6	30.6	15.6	34.3	43.2	12.87	16.10	4.12	−10.13
L 80x80x10	276.83	−45.00	24.1	18.4	30.3	15.5	34.0	42.8	15.68	19.67	5.02	−12.34
L 90x90x7	293.23	−45.00	27.5	21.1	34.6	17.7	38.9	48.9	14.58	18.17	4.67	−11.49
L 90x90x8	330.81	−45.00	27.4	21.0	34.5	17.6	38.8	48.8	16.48	20.58	5.27	−12.98
L 90x90x9	367.04	−45.00	27.3	20.9	34.4	17.6	38.6	48.6	18.34	22.94	5.86	−14.43
L 90x90x10	401.96	−45.00	27.2	20.8	34.3	17.5	38.5	48.4	20.15	25.23	6.44	−15.85
L 100x100x8	459.05	−45.00	30.6	23.4	38.5	19.6	43.2	54.4	20.54	25.61	6.56	−16.18
L 100x100x10	559.91	−45.00	30.4	23.3	38.3	19.5	43.0	54.1	25.17	31.48	8.04	−19.80
L 100x100x12	654.30	−45.00	30.2	23.1	38.0	19.4	42.7	53.7	29.60	37.09	9.45	−23.26
L 120x120x10	992.79	−45.00	36.7	28.2	46.3	23.6	52.0	65.4	36.94	46.12	11.74	−29.05
L 120x120x12	1166.00	−45.00	36.5	28.0	46.0	23.5	51.7	65.1	43.62	54.54	13.85	−34.22
L 130x130x12	1497.88	−45.00	39.7	30.4	50.0	25.5	56.1	70.7	51.58	64.46	16.38	−40.50
L 150x150x10	1979.04	−45.00	46.2	35.4	58.2	29.7	65.3	82.2	58.64	73.08	18.66	−46.23
L 150x150x12	2338.11	−45.00	46.0	35.3	58.0	29.5	65.0	81.9	69.51	86.76	22.07	−54.66
L 150x150x15	2848.31	−45.00	45.7	35.0	57.6	29.3	64.6	81.4	85.22	106.55	27.05	−66.83
L 160x160x15	3486.03	−45.00	48.8	37.5	61.5	31.3	69.1	87.0	97.56	121.94	30.96	−76.57
L 180x180x16	5340.42	−45.00	55.1	42.3	69.5	35.3	77.9	98.2	132.48	165.56	41.93	−103.94
L 180x180x18	5919.37	−45.00	54.9	42.1	69.2	35.2	77.6	97.8	147.42	184.38	46.68	−115.48
L 200x200x16	7438.68	−45.00	61.6	47.3	77.6	39.4	87.1	109.7	165.06	206.50	52.56	−129.62
L 200x200x18	8257.47	−45.00	61.3	47.1	77.3	39.3	86.7	109.3	183.97	230.20	58.50	−144.15

L 200x200x20	9049.77	−45.00	61.1	46.9	77.0	39.2	86.4	108.9	202.47	253.40	64.32	−158.32
L 200x200x24	10557.22	−45.00	60.6	46.4	76.4	39.0	85.8	108.0	238.20	298.25	75.31	−185.85
L 250x250x28	24435.03	−45.00	76.2	58.5	96.1	48.9	107.8	135.8	438.16	549.38	138.99	−341.00
L 250x250x35	29311.68	−45.00	75.4	57.6	94.8	48.7	106.6	134.1	532.89	667.64	169.02	−413.56

	Bending						Shear					Torsion
Section	$W_{y,max}$ [cm ³]	$W_{v,min}$ [cm ³]	$W_{v,max}$ [cm ³]	W_y [cm ³]	W_u [cm ³]	W_v [cm ³]	A_y [cm ²]	A_u [cm ²]	A_v [cm ²]	y_{sc} [mm]	z_{sc} [mm]	I_t [cm ⁴]
L 20x20x3	0.28	−0.19	0.21	0.23	0.44	0.19	0.35	0.50	0.47	−4.5	4.5	0.04
L 25x25x3	0.46	−0.33	0.35	0.36	0.72	0.33	0.44	0.62	0.59	−5.7	5.7	0.05
L 25x25x4	0.56	−0.40	0.44	0.47	0.91	0.40	0.59	0.85	0.78	−5.6	5.6	0.10
L 30x30x3	0.70	−0.50	0.51	0.53	1.05	0.50	0.53	0.73	0.71	−6.9	6.9	0.06
L 30x30x4	0.86	−0.61	0.65	0.69	1.34	0.61	0.70	0.98	0.94	−6.8	6.8	0.58
L 35x35x4	1.22	−0.87	0.92	0.95	1.89	0.87	0.82	1.14	1.10	−8.0	8.0	0.15
L 40x40x4	1.66	−1.17	1.22	1.26	2.51	1.17	0.94	1.29	1.27	−9.2	9.2	0.18
L 40x40x5	1.95	−1.38	1.47	1.54	3.04	1.38	1.18	1.64	1.57	−9.1	9.1	0.34
L 45x45x4.5	2.36	−1.67	1.73	1.80	3.56	1.67	1.19	1.64	1.60	−10.3	10.3	0.30
L 50x50x4	2.75	−1.94	1.97	2.02	4.02	1.94	1.19	1.62	1.59	−11.6	11.6	0.23
L 50x50x5	3.24	−2.29	2.39	2.47	4.92	2.29	1.48	2.03	1.98	−11.5	11.5	0.44
L 50x50x6	3.69	−2.61	2.79	2.91	5.75	2.61	1.76	2.46	2.36	−11.5	11.5	0.74
L 60x60x5	4.89	−3.46	3.53	3.62	7.24	3.46	1.78	2.43	2.39	−13.9	13.9	0.54
L 60x60x6	5.60	−3.96	4.14	4.27	8.52	3.96	2.13	2.94	2.85	−13.9	13.9	0.90
L 60x60x8	6.87	−4.86	5.27	5.51	10.88	4.86	2.82	3.98	3.77	−13.7	13.7	2.04
L 65x65x7	7.51	−5.31	5.59	5.80	11.53	5.31	2.68	3.71	3.60	−15.0	15.0	1.54

L 70x70x6	7.92	−5.60	5.77	5.90	11.82	5.60	2.50	3.42	3.35	−16.3	16.3	1.07
L 70x70x7	8.88	−6.28	6.59	6.79	13.55	6.28	2.90	4.00	3.89	−16.2	16.2	1.66
L 75x75x6	9.23	−6.53	6.70	6.83	13.71	6.53	2.68	3.67	3.60	−17.5	17.5	1.14
L 75x75x8	11.45	−8.09	8.59	8.85	17.69	8.09	3.55	4.93	4.75	−17.4	17.4	2.60
L 80x80x8	13.25	−9.37	9.85	10.13	20.26	9.37	3.79	5.24	5.08	−18.5	18.5	2.81
L 80x80x10	15.57	−11.01	11.89	12.34	24.51	11.01	4.71	6.62	6.29	−18.4	18.4	5.31
L 90x90x7	15.62	−11.04	11.29	11.49	23.07	11.04	3.75	5.13	5.04	−21.0	21.0	2.19
L 90x90x8	17.28	−12.22	12.69	12.98	26.03	12.22	4.27	5.88	5.74	−21.0	21.0	3.21
L 90x90x9	18.86	−13.34	14.04	14.43	28.88	13.34	4.80	6.64	6.43	−20.9	20.9	4.49
L 90x90x10	20.37	−14.40	15.35	15.85	31.63	14.40	5.31	7.40	7.12	−20.8	20.8	6.06
L 100x100x8	21.87	−15.47	15.89	16.18	32.50	15.47	4.76	6.53	6.39	−23.4	23.4	3.61
L 100x100x10	25.87	−18.29	19.28	19.80	39.65	18.29	5.92	8.20	7.94	−23.2	23.2	6.82
L 100x100x12	29.54	−20.89	22.48	23.26	46.33	20.89	7.07	9.92	9.46	−23.0	23.0	11.48
L 120x120x10	38.90	−27.51	28.60	29.05	58.57	27.51	7.14	9.84	9.60	−28.1	28.1	8.25
L 120x120x12	44.64	−31.56	33.46	34.22	68.79	31.56	8.53	11.86	11.45	−28.0	28.0	13.92
L 130x130x12	53.45	−37.79	39.74	40.50	81.57	37.79	9.26	12.82	12.44	−30.4	30.4	15.23
L 150x150x10	63.84	−45.14	45.91	46.23	93.39	45.14	8.98	12.29	12.07	−35.3	35.3	10.61
L 150x150x12	73.60	−52.05	53.94	54.66	110.30	52.05	10.72	14.76	14.41	−35.2	35.2	17.88
L 150x150x15	87.17	−61.64	65.39	66.83	134.40	61.64	13.33	18.54	17.90	−35.0	35.0	33.92
L 160x160x15	100.80	−71.27	75.13	76.57	154.20	71.27	14.24	19.75	19.13	−37.4	37.4	36.47

L 180x180x16	137.72	−97.37	102.41	103.94	210.00	97.37	17.12	23.72	23.01	−42.2	42.2	49.71
L 180x180x18	150.53	−106.40	113.28	115.48	232.80	106.40	19.20	26.77	25.79	−42.0	42.0	69.77
L 200x200x16	173.83	−122.90	128.63	129.62	262.20	122.90	19.07	26.32	25.66	−47.2	47.2	55.17
L 200x200x18	190.40	−134.60	142.46	144.15	292.20	134.60	21.39	29.67	28.77	−47.0	47.0	77.55
L 200x200x20	206.22	−145.80	155.87	158.32	320.30	145.80	23.70	33.04	31.84	−46.8	46.8	105.10
L 200x200x24	236.07	−166.90	181.70	185.85	373.60	166.90	28.35	40.13	37.96	−46.4	46.4	177.80
L 250x250x28	437.66	−309.50	336.50	341.00	691.60	309.50	41.39	58.38	55.54	−58.4	58.4	350.10
L 250x250x35	514.93	−364.10	404.57	413.56	829.60	364.10	51.50	74.05	68.69	−57.5	57.5	666.30

	Torsion	Warping					Stability		Plasticity			
Section	W_t [cm ³]	max ω [cm ²]	I_ω [cm ⁶]	i_ω [mm]	W_ω [cm ⁴]	max S_ω [cm ⁴]	r_v [mm]	$r_{u,SC}$ [mm]	$W_{pl,y}$ [cm ³]	$W_{pl,y,pure}$ [cm ³]	$W_{pl,u}$ [cm ³]	$W_{pl,v}$ [cm ³]
L 20x20x3	0.12	0.00	0.00	0.0	0.00	0.00	13.9	26.6	0.51	0.43	0.73	0.37
L 25x25x3	0.15	0.00	0.00	0.0	0.00	0.00	17.6	33.8	0.83	0.69	1.17	0.59
L 25x25x4	0.26	0.00	0.00	0.0	0.00	0.00	16.6	32.5	1.07	0.88	1.50	0.77
L 30x30x3	0.20	0.00	0.00	0.0	0.00	0.00	22.6	42.0	1.20	1.01	1.72	0.87
L 30x30x4	1.44	0.00	0.00	0.0	0.00	0.00	21.3	40.5	1.56	1.30	2.22	1.13
L 35x35x4	0.39	0.00	0.00	0.0	0.00	0.00	24.9	47.6	2.17	1.80	3.08	1.56
L 40x40x4	0.46	0.00	0.00	0.0	0.00	0.00	29.4	55.4	2.85	2.39	4.09	2.06
L 40x40x5	0.69	0.00	0.00	0.0	0.00	0.00	28.2	54.0	3.50	2.91	4.98	2.52
L 45x45x4.5	0.66	0.00	0.00	0.0	0.00	0.00	33.4	62.5	4.06	3.41	5.82	2.93
L 50x50x4	0.59	0.00	0.00	0.0	0.00	0.00	37.6	70.4	4.53	3.82	6.52	3.28
L 50x50x5	0.88	0.00	0.00	0.0	0.00	0.00	36.3	68.9	5.58	4.67	7.98	4.03
L 50x50x6	1.23	0.00	0.00	0.0	0.00	0.00	35.2	67.6	6.60	5.49	9.38	4.75
L 60x60x5	1.08	0.00	0.00	0.0	0.00	0.00	44.4	83.8	8.15	6.85	11.70	5.88
L 60x60x6	1.50	0.00	0.00	0.0	0.00	0.00	43.2	82.5	9.66	8.07	13.80	6.96
L 60x60x8	2.55	0.00	0.00	0.0	0.00	0.00	41.1	79.8	12.57	10.39	17.77	9.02
L 65x65x7	2.21	0.00	0.00	0.0	0.00	0.00	46.5	88.9	13.14	10.97	18.74	9.46

L 70x70x6	1.78	0.00	0.00	0.0	0.00	0.00	51.3	97.3	13.30	11.16	19.06	9.59
L 70x70x7	2.37	0.00	0.00	0.0	0.00	0.00	50.1	96.0	15.36	12.82	21.91	11.05
L 75x75x6	1.90	0.00	0.00	0.0	0.00	0.00	54.8	104.4	15.37	12.88	22.01	11.06
L 75x75x8	3.24	0.00	0.00	0.0	0.00	0.00	52.6	101.8	20.09	16.70	28.55	14.41
L 80x80x8	3.52	0.00	0.00	0.0	0.00	0.00	57.0	109.5	22.95	19.14	32.70	16.49
L 80x80x10	5.31	0.00	0.00	0.0	0.00	0.00	55.0	106.9	28.15	23.30	39.83	20.18
L 90x90x7	3.14	0.00	0.00	0.0	0.00	0.00	66.2	125.7	25.84	21.69	37.06	18.62
L 90x90x8	4.01	0.00	0.00	0.0	0.00	0.00	65.0	124.3	29.30	24.51	41.87	21.07
L 90x90x9	4.99	0.00	0.00	0.0	0.00	0.00	63.9	123.0	32.70	27.25	46.57	23.48
L 90x90x10	6.06	0.00	0.00	0.0	0.00	0.00	62.9	121.8	36.03	29.93	51.15	25.84
L 100x100x8	4.51	0.00	0.00	0.0	0.00	0.00	73.1	139.2	36.42	30.54	52.16	26.22
L 100x100x10	6.82	0.00	0.00	0.0	0.00	0.00	70.9	136.5	44.87	37.38	63.88	32.20
L 100x100x12	9.57	0.00	0.00	0.0	0.00	0.00	68.9	140.9	53.03	43.92	75.08	38.00
L 120x120x10	8.25	0.00	0.00	0.0	0.00	0.00	86.0	165.5	65.59	54.78	93.57	47.05
L 120x120x12	11.60	0.00	0.00	0.0	0.00	0.00	84.0	163.1	77.72	64.60	110.38	55.65
L 130x130x12	12.69	0.00	0.00	0.0	0.00	0.00	91.9	177.8	91.77	76.43	130.57	65.74
L 150x150x10	10.61	0.00	0.00	0.0	0.00	0.00	110.1	210.0	103.76	87.09	148.73	74.63
L 150x150x12	14.90	0.00	0.00	0.0	0.00	0.00	107.8	207.4	123.34	103.07	176.05	88.48
L 150x150x15	22.61	0.00	0.00	0.0	0.00	0.00	104.8	203.7	151.85	126.17	215.58	108.68
L 160x160x15	24.31	0.00	0.00	0.0	0.00	0.00	112.7	218.4	173.62	144.50	246.87	124.33

L 180x180x16	31.07	0.00	0.00	0.0	0.00	0.00	126.7	246.2	235.57	196.07	334.95	168.56
L 180x180x18	38.76	0.00	0.00	0.0	0.00	0.00	124.9	243.8	262.71	218.02	372.52	187.81
L 200x200x16	34.48	0.00	0.00	0.0	0.00	0.00	141.0	274.6	293.47	244.31	417.31	209.74
L 200x200x18	43.08	0.00	0.00	0.0	0.00	0.00	139.2	272.2	327.53	272.00	464.67	233.88
L 200x200x20	52.55	0.00	0.00	0.0	0.00	0.00	137.5	270.0	360.99	299.06	511.00	257.62
L 200x200x24	74.08	0.00	0.00	0.0	0.00	0.00	134.2	265.4	426.19	351.36	600.62	303.98
L 250x250x28	125.04	0.00	0.00	0.0	0.00	0.00	167.2	332.4	783.85	645.96	1104.02	557.83
L 250x250x35	190.37	0.00	0.00	0.0	0.00	0.00	161.9	324.6	957.22	783.68	1340.35	681.54

	Plasticity											
Section	$\alpha_{pl,y}$ [--]	$\alpha_{pl,y,pure}$ [--]	$\alpha_{pl,u}$ [--]	$\alpha_{pl,v}$ [--]	$A_{pl,y}$ [cm ²]	$A_{pl,u}$ [cm ²]	N_{pl} [kN]	$V_{pl,y}$ [kN]	$V_{pl,u}$ [kN]	$M_{pl,y}$ [kNm]	$M_{pl,u}$ [kNm]	$M_{pl,v}$ [kNm]
L 20x20x3	2.282	1.889	1.664	1.906	0.55	0.78	26.396	7.530	10.649	0.12	0.17	0.09
L 25x25x3	2.274	1.890	1.631	1.819	0.71	1.00	33.446	9.565	13.527	0.19	0.27	0.14
L 25x25x4	2.293	1.881	1.651	1.924	0.92	1.30	43.551	12.482	17.653	0.25	0.35	0.18
L 30x30x3	2.257	1.901	1.646	1.754	0.85	1.21	40.819	11.600	16.405	0.28	0.39	0.21
L 30x30x4	2.275	1.892	1.653	1.859	1.12	1.58	53.274	15.196	21.490	0.37	0.51	0.26
L 35x35x4	2.270	1.891	1.631	1.802	1.32	1.87	62.674	17.909	25.328	0.51	0.71	0.37
L 40x40x4	2.259	1.895	1.631	1.756	1.52	2.15	72.353	20.623	29.165	0.67	0.94	0.49
L 40x40x5	2.274	1.891	1.639	1.833	1.87	2.65	89.038	25.439	35.977	0.82	1.15	0.59
L 45x45x4.5	2.258	1.897	1.636	1.755	1.92	2.72	91.659	26.101	36.912	0.95	1.34	0.69
L 50x50x4	2.246	1.894	1.622	1.688	1.92	2.72	91.483	26.050	36.840	1.06	1.50	0.78
L 50x50x5	2.261	1.892	1.624	1.757	2.38	3.36	112.868	32.223	45.571	1.31	1.84	0.95
L 50x50x6	2.274	1.890	1.631	1.818	2.82	3.99	133.783	38.261	54.109	1.55	2.17	1.12
L 60x60x5	2.250	1.891	1.616	1.702	2.88	4.07	136.748	39.007	55.165	1.91	2.69	1.39
L 60x60x6	2.262	1.890	1.620	1.758	3.42	4.84	162.363	46.402	65.622	2.27	3.19	1.64
L 60x60x8	2.283	1.887	1.633	1.856	4.48	6.34	212.183	60.783	85.961	2.95	4.12	2.12
L 65x65x7	2.266	1.891	1.625	1.782	4.31	6.09	204.389	58.409	82.603	3.09	4.33	2.23

L 70x70x6	2.253	1.889	1.612	1.712	4.02	5.69	190.994	54.542	77.134	3.13	4.39	2.27
L 70x70x7	2.264	1.890	1.617	1.759	4.65	6.58	220.839	63.158	89.319	3.61	5.06	2.61
L 75x75x6	2.251	1.887	1.605	1.695	4.32	6.11	205.094	58.613	82.891	3.61	5.08	2.62
L 75x75x8	2.271	1.888	1.614	1.781	5.68	8.03	269.014	77.065	108.986	4.72	6.62	3.40
L 80x80x8	2.265	1.889	1.614	1.760	6.08	8.60	288.296	82.492	116.661	5.39	7.57	3.89
L 80x80x10	2.281	1.888	1.625	1.833	7.50	10.61	355.036	101.758	143.908	6.62	9.24	4.75
L 90x90x7	2.248	1.888	1.606	1.686	6.05	8.56	287.654	82.153	116.181	6.07	8.54	4.41
L 90x90x8	2.258	1.888	1.608	1.724	6.88	9.73	326.429	93.346	132.011	6.89	9.67	4.98
L 90x90x9	2.266	1.889	1.612	1.760	7.70	10.88	364.734	104.404	147.649	7.68	10.78	5.54
L 90x90x10	2.274	1.889	1.617	1.794	8.50	12.02	402.569	115.326	163.095	8.47	11.86	6.09
L 100x100x8	2.251	1.888	1.605	1.695	7.68	10.86	364.612	104.200	147.361	8.56	12.04	6.21
L 100x100x10	2.267	1.888	1.611	1.761	9.50	13.44	450.152	128.893	182.283	10.54	14.79	7.60
L 100x100x12	2.280	1.888	1.621	1.819	11.28	15.95	533.812	153.044	216.437	12.46	17.43	8.95
L 120x120x10	2.258	1.886	1.598	1.710	11.50	16.26	544.786	156.029	220.658	15.41	21.68	11.12
L 120x120x12	2.271	1.888	1.605	1.763	13.68	19.35	647.246	185.607	262.487	18.26	25.63	13.13
L 130x130x12	2.266	1.887	1.601	1.740	14.88	21.04	704.331	201.888	285.513	21.57	30.30	15.52
L 150x150x10	2.244	1.884	1.593	1.653	14.50	20.51	687.993	196.732	278.221	24.38	34.35	17.69
L 150x150x12	2.257	1.886	1.596	1.700	17.28	24.44	818.653	234.450	331.563	28.99	40.78	20.93
L 150x150x15	2.272	1.888	1.604	1.763	21.38	30.23	1011.118	290.010	410.136	35.68	50.08	25.64
L 160x160x15	2.267	1.887	1.601	1.744	22.88	32.35	1082.455	310.362	438.918	40.80	57.31	29.35

L 180x180x16	2.266	1.886	1.595	1.731	27.52	38.92	1301.658	373.384	528.045	55.36	77.82	39.79
L 180x180x18	2.275	1.888	1.600	1.765	30.78	43.53	1454.878	417.615	590.596	61.74	86.66	44.29
L 200x200x16	2.264	1.885	1.592	1.707	30.72	43.44	1452.058	416.801	589.445	68.96	97.05	49.53
L 200x200x18	2.272	1.887	1.590	1.738	34.38	48.62	1624.078	466.459	659.672	76.97	108.20	55.17
L 200x200x20	2.280	1.889	1.595	1.767	38.00	53.74	1794.218	515.574	729.131	84.83	119.10	60.72
L 200x200x24	2.293	1.891	1.608	1.821	45.12	63.81	2128.858	612.176	865.748	100.15	140.18	71.55
L 250x250x28	2.299	1.894	1.596	1.802	66.08	93.45	3113.978	896.556	1267.921	184.21	258.21	131.29
L 250x250x35	2.315	1.895	1.616	1.872	81.37	115.08	3832.843	1104.074	1561.397	224.95	313.79	160.25

	Plasticity				Other							
Section	y _{pl} [mm]	z _{pl} [mm]	u _{pl} [mm]	v _{pl} [mm]	N _u [kN]	G [kg/m]	A _m [m ² /m]	V [cm ³ /m]	A _m /V [1/m]	d _{0,1} [mm]	w ₁ [mm]	w ₂ [mm]
L 20x20x3	-3.2	3.2	0.0	0.0	26.396	0.9	0.077	112.30	685.663	0.0	0.0	0.0
L 25x25x3	-4.4	4.4	0.0	0.0	33.446	1.1	0.097	142.30	681.658	0.0	0.0	0.0
L 25x25x4	-3.9	3.9	0.0	0.0	43.551	1.5	0.097	185.30	523.475	0.0	0.0	0.0
L 30x30x3	-5.4	5.4	-0.1	0.0	40.819	1.4	0.116	173.70	666.091	0.0	0.0	0.0
L 30x30x4	-5.0	5.0	-0.1	0.0	53.274	1.8	0.116	226.70	510.366	0.0	0.0	0.0
L 35x35x4	-6.2	6.2	0.0	0.0	62.674	2.1	0.136	266.70	508.811	0.0	0.0	0.0
L 40x40x4	-7.3	7.3	-0.1	0.0	72.353	2.4	0.155	307.90	502.761	0.0	0.0	0.0
L 40x40x5	-6.8	6.8	0.0	0.0	89.038	3.0	0.155	378.90	408.551	0.0	0.0	0.0
L 45x45x4.5	-8.2	8.2	-0.1	0.0	91.659	3.1	0.174	390.00	446.154	0.0	0.0	0.0
L 50x50x4	-9.6	9.6	-0.1	0.0	91.483	3.1	0.194	389.30	498.330	0.0	0.0	0.0
L 50x50x5	-9.2	9.2	-0.1	0.0	112.868	3.8	0.194	480.30	403.914	11.0	35.0	0.0
L 50x50x6	-8.7	8.7	0.0	0.0	133.783	4.5	0.194	569.30	340.769	11.0	36.0	0.0
L 60x60x5	-11.5	11.5	-0.1	0.0	136.748	4.6	0.233	581.90	400.584	13.0	35.0	0.0
L 60x60x6	-11.1	11.1	-0.1	0.0	162.363	5.4	0.233	690.90	337.386	13.0	36.0	0.0
L 60x60x8	-10.1	10.1	0.0	0.0	212.183	7.1	0.233	902.90	258.168	13.0	38.0	0.0
L 65x65x7	-11.7	11.7	-0.1	0.0	204.389	6.8	0.252	869.70	290.100	17.0	42.0	0.0

L 70x70x6	−13.4	13.4	−0.1	0.0	190.994	6.4	0.272	812.70	335.056	21.0	41.0	0.0
L 70x70x7	−12.9	12.9	−0.1	0.0	220.839	7.4	0.272	939.70	289.773	21.0	42.0	0.0
L 75x75x6	−14.7	14.7	−0.1	0.0	205.094	6.9	0.292	872.70	334.938	21.0	41.0	0.0
L 75x75x8	−13.7	13.7	0.0	0.0	269.014	9.0	0.292	1145.00	255.284	21.0	43.0	0.0
L 80x80x8	−14.8	14.8	−0.1	0.0	288.296	9.6	0.311	1227.00	253.790	25.0	50.0	0.0
L 80x80x10	−13.9	13.9	0.0	0.0	355.036	11.9	0.311	1511.00	206.089	21.0	46.0	0.0
L 90x90x7	−17.7	17.7	−0.1	0.0	287.654	9.6	0.351	1224.00	286.438	28.0	53.0	0.0
L 90x90x8	−17.2	17.2	−0.1	0.0	326.429	10.9	0.351	1389.00	252.412	28.0	54.0	0.0
L 90x90x9	−16.7	16.7	−0.1	0.0	364.734	12.2	0.351	1552.00	225.902	28.0	55.0	0.0
L 90x90x10	−16.2	16.2	0.0	0.0	402.569	13.4	0.351	1713.00	204.670	28.0	56.0	0.0
L 100x100x8	−19.5	19.5	−0.1	0.0	364.612	12.2	0.390	1551.00	251.257	28.0	55.0	0.0
L 100x100x10	−18.6	18.6	−0.1	0.0	450.152	15.0	0.390	1915.00	203.499	28.0	57.0	0.0
L 100x100x12	−17.6	17.6	0.0	0.0	533.812	17.8	0.390	2271.00	171.598	28.0	59.0	0.0
L 120x120x10	−23.4	23.4	−0.1	0.0	544.786	18.2	0.469	2318.00	202.243	28.0	60.0	0.0
L 120x120x12	−22.4	22.4	0.0	0.0	647.246	21.6	0.469	2754.00	170.225	28.0	60.0	0.0
L 130x130x12	−24.8	24.8	−0.1	0.0	704.331	23.5	0.508	2997.00	169.503	28.0	61.0	0.0
L 150x150x10	−30.5	30.5	−0.2	0.0	687.993	23.0	0.586	2927.00	200.307	25.0	58.0	118.0
L 150x150x12	−29.5	29.5	−0.1	0.0	818.653	27.3	0.586	3483.00	168.332	25.0	60.0	120.0
L 150x150x15	−28.1	28.1	−0.1	0.0	1011.118	33.8	0.586	4302.00	136.285	28.0	66.0	0.0
L 160x160x15	−30.4	30.4	−0.1	0.0	1082.455	36.2	0.625	4606.00	135.779	25.0	64.0	124.0

L 180x180x16	-34.8	34.8	-0.1	0.0	1301.658	43.5	0.705	5539.00	127.189	28.0	69.0	136.0
L 180x180x18	-33.8	33.8	0.0	0.0	1454.878	48.6	0.705	6191.00	113.794	28.0	71.0	138.0
L 200x200x16	-39.7	39.7	-0.1	0.0	1452.058	48.5	0.784	6179.00	126.962	28.0	69.0	136.0
L 200x200x18	-38.7	38.7	0.0	0.0	1624.078	54.3	0.784	6911.00	113.515	28.0	71.0	138.0
L 200x200x20	-37.7	37.7	0.0	0.0	1794.218	59.9	0.784	7635.00	102.750	28.0	73.0	140.0
L 200x200x24	-35.7	35.7	0.1	0.0	2128.858	71.1	0.784	9059.00	86.599	28.0	77.0	144.0
L 250x250x28	-45.9	45.9	0.2	0.0	3113.978	104.0	0.985	13250.00	74.302	28.0	81.0	166.0
L 250x250x35	-42.4	42.4	0.4	0.0	3832.843	128.0	0.985	16310.00	60.362	28.0	88.0	166.0

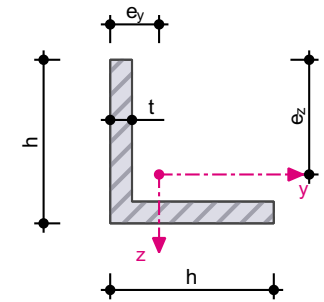


LS-equal

Sharp Edged Angles

LS-equal

- DIN 1022:2004-04
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	Geometry		Sectional Area	Bending								
Section	h [mm]	t [mm]	A [cm ²]	e _y [mm]	e _z [mm]	I _y [cm ⁴]	I _{yz} [cm ⁴]	I _u [cm ⁴]	I _v [cm ⁴]	I _p [cm ⁴]	I _{p,SC} [cm ⁴]	α [deg]
LS 20x3	20.0	3.0	1.11	6.1	13.9	0.40	0.23	0.64	0.17	0.81	1.27	-45.00
LS 20x4	20.0	4.0	1.44	6.4	13.6	0.50	0.28	0.79	0.22	1.01	1.57	-45.00
LS 25x3	25.0	3.0	1.41	7.4	17.6	0.82	0.48	1.30	0.34	1.64	2.61	-45.00
LS 25x4	25.0	4.0	1.84	7.7	17.3	1.04	0.60	1.64	0.44	2.07	3.27	-45.00
LS 30x3	30.0	3.0	1.71	8.6	21.4	1.46	0.86	2.32	0.59	2.92	4.64	-45.00
LS 30x4	30.0	4.0	2.24	9.0	21.0	1.86	1.09	2.94	0.77	3.71	5.88	-45.00
LS 35x4	35.0	4.0	2.64	10.2	24.8	3.03	1.78	4.81	1.24	6.05	9.62	-45.00
LS 40x4	40.0	4.0	3.04	11.5	28.5	4.61	2.73	7.34	1.88	9.22	14.67	-45.00
LS 40x5	40.0	5.0	3.75	11.8	28.2	5.56	3.27	8.83	2.29	11.12	17.66	-45.00
LS 45x5	45.0	5.0	4.25	13.1	31.9	8.07	4.77	12.84	3.31	16.15	25.68	-45.00
LS 50x5	50.0	5.0	4.75	14.3	35.7	11.25	6.66	17.91	4.59	22.50	35.82	-45.00

	Bending											
Section	i _y [mm]	i _{yz} [mm]	i _u [mm]	i _v [mm]	i _p [mm]	i _{p,SC} [mm]	max S _y [cm ³]	max S _u [cm ³]	max S _v [cm ³]	W _{y,min} [cm ³]	W _{y,max} [cm ³]	W _{v,min} [cm ³]
LS 20x3	6.0	4.6	7.6	3.9	8.5	10.7	0.29	0.36	0.09	-0.22	0.28	-0.20
LS 20x4	5.9	4.4	7.4	3.9	8.4	10.5	0.37	0.46	0.12	-0.28	0.34	-0.24
LS 25x3	7.6	5.8	9.6	4.9	10.8	13.6	0.47	0.59	0.15	-0.36	0.46	-0.33
LS 25x4	7.5	5.7	9.4	4.9	10.6	13.3	0.60	0.75	0.19	-0.45	0.57	-0.40
LS 30x3	9.2	7.1	11.7	5.9	13.1	16.5	0.68	0.86	0.22	-0.52	0.69	-0.49
LS 30x4	9.1	7.0	11.5	5.9	12.9	16.2	0.88	1.11	0.28	-0.67	0.86	-0.61
LS 35x4	10.7	8.2	13.5	6.9	15.1	19.1	1.22	1.54	0.39	-0.94	1.22	-0.86
LS 40x4	12.3	9.5	15.5	7.9	17.4	22.0	1.62	2.04	0.51	-1.24	1.64	-1.16
LS 40x5	12.2	9.3	15.3	7.8	17.2	21.7	1.98	2.49	0.63	-1.51	1.94	-1.37
LS 45x5	13.8	10.6	17.4	8.8	19.5	24.6	2.53	3.20	0.80	-1.94	2.53	-1.79
LS 50x5	15.4	11.8	19.4	9.8	21.8	27.5	3.17	3.99	1.00	-2.43	3.20	-2.26

	Bending				Shear					Torsion		Warping
Section	$W_{v,max}$ [cm ³]	W_y [cm ³]	W_u [cm ³]	W_v [cm ³]	A_y [cm ²]	A_u [cm ²]	A_v [cm ²]	y_{sc} [mm]	z_{sc} [mm]	I_t [cm ⁴]	W_t [cm ³]	max ω [cm ²]
LS 20x3	0.22	0.22	0.45	0.20	0.35	0.52	0.47	-4.6	4.6	0.03	0.11	0.00
LS 20x4	0.28	0.28	0.56	0.24	0.47	0.72	0.62	-4.4	4.4	0.07	0.18	0.00
LS 25x3	0.36	0.36	0.74	0.33	0.44	0.64	0.59	-5.9	5.9	0.04	0.14	0.00
LS 25x4	0.45	0.45	0.93	0.40	0.59	0.87	0.78	-5.7	5.7	0.09	0.23	0.00
LS 30x3	0.53	0.52	1.09	0.49	0.53	0.76	0.72	-7.1	7.1	0.05	0.17	0.00
LS 30x4	0.68	0.67	1.39	0.61	0.71	1.02	0.95	-7.0	7.0	0.11	0.29	0.00
LS 35x4	0.95	0.94	1.94	0.86	0.83	1.18	1.11	-8.2	8.2	0.14	0.34	0.00
LS 40x4	1.26	1.24	2.59	1.16	0.95	1.34	1.28	-9.5	9.5	0.16	0.39	0.00
LS 40x5	1.52	1.51	3.12	1.37	1.18	1.70	1.58	-9.3	9.3	0.30	0.60	0.00
LS 45x5	1.96	1.94	4.04	1.79	1.33	1.89	1.79	-10.6	10.6	0.34	0.68	0.00
LS 50x5	2.47	2.43	5.07	2.26	1.48	2.10	2.00	-11.8	11.8	0.38	0.77	0.00

	Warping				Stability		Plasticity					
Section	I_{ω} [cm ⁶]	i_{ω} [mm]	W_{ω} [cm ⁴]	max S_{ω} [cm ⁴]	r_v [mm]	$r_{u,SC}$ [mm]	$W_{pl,y}$ [cm ³]	$W_{pl,y,pure}$ [cm ³]	$W_{pl,u}$ [cm ³]	$W_{pl,v}$ [cm ³]	$\alpha_{pl,y}$ [--]	$\alpha_{pl,y,pure}$ [--]
LS 20x3	0.00	0.0	0.00	0.00	12.6	25.5	0.52	0.43	0.73	0.37	2.368	1.928
LS 20x4	0.00	0.0	0.00	0.00	11.8	24.4	0.67	0.54	0.92	0.48	2.384	1.914
LS 25x3	0.00	0.0	0.00	0.00	16.2	32.7	0.84	0.69	1.17	0.59	2.355	1.929
LS 25x4	0.00	0.0	0.00	0.00	15.5	31.7	1.08	0.88	1.50	0.77	2.375	1.929
LS 30x3	0.00	0.0	0.00	0.00	19.8	39.9	1.23	1.01	1.72	0.87	2.343	1.926
LS 30x4	0.00	0.0	0.00	0.00	19.2	38.9	1.59	1.30	2.22	1.13	2.364	1.931
LS 35x4	0.00	0.0	0.00	0.00	22.8	46.0	2.20	1.80	3.08	1.56	2.353	1.930
LS 40x4	0.00	0.0	0.00	0.00	26.4	53.2	2.91	2.39	4.09	2.06	2.344	1.927
LS 40x5	0.00	0.0	0.00	0.00	25.8	52.2	3.56	2.91	4.98	2.52	2.359	1.931
LS 45x5	0.00	0.0	0.00	0.00	29.4	59.4	4.56	3.74	6.39	3.23	2.351	1.929
LS 50x5	0.00	0.0	0.00	0.00	33.0	66.5	5.68	4.67	7.98	4.03	2.344	1.927

	Plasticity											
Section	$\alpha_{pl,u}$ [--]	$\alpha_{pl,v}$ [--]	$A_{pl,y}$ [cm ²]	$A_{pl,u}$ [cm ²]	N_{pl} [kN]	$V_{pl,y}$ [kN]	$V_{pl,u}$ [kN]	$M_{pl,y}$ [kNm]	$M_{pl,u}$ [kNm]	$M_{pl,v}$ [kNm]	y_{pl} [mm]	z_{pl} [mm]
LS 20x3	1.613	1.893	0.55	0.78	26.085	7.530	10.649	0.12	0.17	0.09	−3.3	3.3
LS 20x4	1.652	1.988	0.72	1.02	33.840	9.769	13.815	0.16	0.22	0.11	−2.8	2.8
LS 25x3	1.592	1.827	0.71	1.00	33.135	9.565	13.527	0.20	0.28	0.14	−4.5	4.5
LS 25x4	1.622	1.917	0.92	1.30	43.240	12.482	17.653	0.25	0.35	0.18	−4.0	4.0
LS 30x3	1.576	1.778	0.85	1.21	40.185	11.600	16.405	0.29	0.41	0.20	−5.8	5.8
LS 30x4	1.601	1.858	1.12	1.58	52.640	15.196	21.490	0.37	0.52	0.26	−5.2	5.2
LS 35x4	1.587	1.815	1.32	1.87	62.040	17.909	25.328	0.52	0.72	0.37	−6.4	6.4
LS 40x4	1.576	1.780	1.52	2.15	71.440	20.623	29.165	0.68	0.96	0.48	−7.7	7.7
LS 40x5	1.595	1.840	1.88	2.65	88.125	25.439	35.977	0.84	1.17	0.59	−7.1	7.1
LS 45x5	1.584	1.806	2.12	3.01	99.875	28.831	40.774	1.07	1.50	0.76	−8.4	8.4
LS 50x5	1.576	1.779	2.38	3.36	111.625	32.223	45.571	1.34	1.88	0.95	−9.6	9.6

	Plasticity		Other				
Section	u _{pl} [mm]	v _{pl} [mm]	N _u [kN]	G [kg/m]	A _m [m ² /m]	V [cm ³ /m]	A _m /V [1/m]
LS 20x3	0.0	0.0	26.085	0.9	0.080	111.00	720.721
LS 20x4	0.1	0.0	33.840	1.1	0.080	144.00	555.556
LS 25x3	0.0	0.0	33.135	1.1	0.100	141.00	709.220
LS 25x4	0.1	0.0	43.240	1.4	0.100	184.00	543.478
LS 30x3	0.0	0.0	40.185	1.3	0.120	171.00	701.754
LS 30x4	0.1	0.0	52.640	1.8	0.120	224.00	535.714
LS 35x4	0.0	0.0	62.040	2.1	0.140	264.00	530.303
LS 40x4	0.0	0.0	71.440	2.4	0.160	304.00	526.316
LS 40x5	0.1	0.0	88.125	2.9	0.160	375.00	426.667
LS 45x5	0.1	0.0	99.875	3.3	0.180	425.00	423.529
LS 50x5	0.0	0.0	111.625	3.7	0.200	475.00	421.053

