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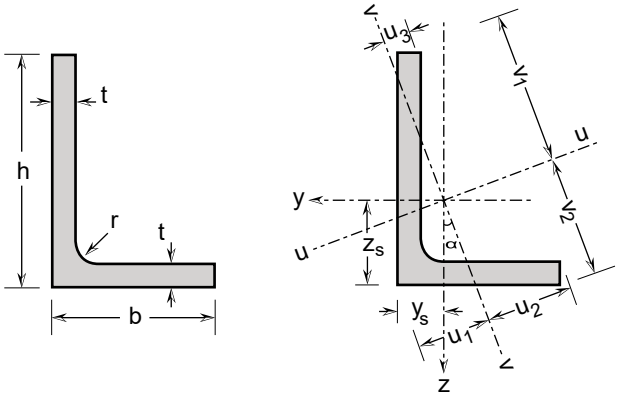


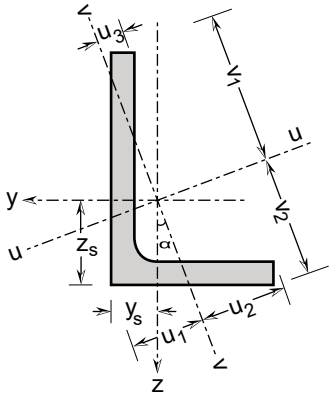
Unequal angles

Hot rolled
dimensional tolerances and grades according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Laser fused
according to ASTM A1069, dimensional tolerances and grades, according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Stainless steel
Standard stainless steel grades 304/L and 316/L
Annealed and pickled, lengths of 6000 -0/+100 mm

General properties													
Designation		Dimensions					Position of axes						
	G kg/m	h mm	b mm	t mm	r mm	A mm² x10²	y_s mm	z_s mm	v_1 mm	v_2 mm	u_1 mm	u_2 mm	u_3 mm
L 45 x 25 x 4	2.13	45	25	4	5	2.67	5.88	15.68	29.76	20.59	10.22	14.24	6.17
L 45 x 30 x 4	2.29	45	30	4	5	2.87	7.36	14.72	30.72	22.49	12.59	15.75	8.12
L 50 x 30 x 5	3.03	50	30	5	6	3.79	7.38	17.18	33.42	23.69	12.65	16.50	7.78
L 50 x 30 x 6	3.58	50	30	6	6	4.48	7.77	17.60	33.16	23.90	13.10	16.39	8.11
L 50 x 40 x 5	3.43	50	40	5	6	4.29	10.56	15.47	34.92	28.65	17.12	18.39	12.33
L 60 x 40 x 5	3.83	60	40	5	6	4.79	9.72	19.55	40.97	29.99	16.69	21.05	10.81
L 65 x 50 x 5	4.47	65	50	5	9	5.59	12.34	19.60	45.55	35.68	20.42	23.85	14.47
L 65 x 50 x 6	5.30	65	50	6	9	6.63	12.78	20.08	45.36	35.87	21.04	23.74	14.71
L 75 x 50 x 6	5.78	75	50	6	9	7.23	11.96	24.16	51.42	37.25	20.55	26.32	13.23
L 75 x 50 x 8	7.56	75	50	8	9	9.45	12.78	25.05	50.95	37.67	21.60	26.11	13.83
L 75 x 50 x 9	8.42	75	50	9	9	10.53	13.17	25.47	50.74	37.84	22.08	26.06	14.13
L 75 x 65 x 6	6.50	75	65	6	9	8.13	16.93	21.82	52.88	46.05	26.56	27.58	20.90
L 90 x 65 x 6	7.24	90	65	6	10	9.05	15.47	27.67	62.59	47.06	26.30	32.68	17.99
L 90 x 65 x 8	9.49	90	65	8	10	11.87	16.32	28.59	62.17	47.46	27.45	32.47	18.53
L 90 x 75 x 9	11.32	90	75	9	10	14.15	20.07	27.46	63.06	53.51	32.00	33.23	23.91
L 100 x 50 x 6	7.00	100	50	6	10	8.75	10.38	34.77	65.75	43.57	18.75	30.07	10.99
L 100 x 50 x 8	9.17	100	50	8	10	11.47	11.22	35.75	65.02	44.25	19.74	29.60	11.74
L 100 x 50 x 10	11.29	100	50	10	10	14.11	12.02	36.64	64.38	44.81	20.60	29.25	12.46
L 100 x 65 x 6	7.72	100	65	6	10	9.65	14.69	31.80	68.62	48.66	25.76	35.04	16.58
L 100 x 65 x 7	8.93	100	65	7	10	11.17	15.12	32.29	68.34	48.93	26.34	34.86	16.89
L 100 x 65 x 8	10.13	100	65	8	10	12.67	15.54	32.74	68.09	49.16	26.87	34.72	17.20
L 100 x 65 x 9	11.32	100	65	9	10	14.15	15.94	33.18	67.86	49.36	27.38	34.62	17.50



Structural properties												
Designation	Axis y-y			Axis z-z			Axis u-u		Axis v-v			
	I_y mm^4 x10^4	$W_{el,y}$ mm^3 x10^3	i_y mm x10	I_z mm^4 x10^4	$W_{el,z}$ mm^3 x10^3	i_z mm x10	I_u mm^4 x10^4	i_u mm x10	I_v mm^4 x10^4	i_v mm x10	I_{yz} mm^4 x10^4	α
L 45 x 25 x 4	5.39	1.84	1.42	1.18	0.62	0.67	5.82	1.48	0.75	0.53	-1.42	17.04
L 45 x 30 x 4	5.74	1.90	1.41	2.03	0.90	0.84	6.59	1.52	1.18	0.64	-1.97	23.33
L 50 x 30 x 5	9.32	2.84	1.57	2.49	1.10	0.81	10.27	1.65	1.53	0.64	-2.73	19.31
L 50 x 30 x 6	10.86	3.35	1.56	2.88	1.30	0.80	11.95	1.63	1.79	0.63	-3.14	19.10
L 50 x 40 x 5	10.28	2.98	1.55	5.80	1.97	1.16	13.07	1.75	3.02	0.84	-4.50	31.78
L 60 x 40 x 5	17.19	4.25	1.89	6.11	2.02	1.13	19.75	2.03	3.54	0.86	-5.91	23.44
L 65 x 50 x 5	22.79	5.02	2.02	11.62	3.09	1.44	28.17	2.25	6.25	1.06	-9.43	29.68
L 65 x 50 x 6	26.85	5.98	2.01	13.67	3.67	1.44	33.18	2.24	7.34	1.05	-11.11	29.67
L 75 x 50 x 6	40.22	7.91	2.36	14.21	3.74	1.40	46.16	2.53	8.28	1.07	-13.77	23.32
L 75 x 50 x 8	51.71	10.35	2.34	18.16	4.88	1.39	59.21	2.50	10.65	1.06	-17.55	23.15
L 75 x 50 x 9	57.10	11.53	2.33	19.98	5.43	1.38	65.27	2.49	11.81	1.06	-19.24	23.02
L 75 x 65 x 6	43.83	8.24	2.32	30.46	6.34	1.94	59.54	2.71	14.75	1.35	-21.37	36.32
L 90 x 65 x 6	72.85	11.69	2.84	31.83	6.43	1.88	86.98	3.10	17.70	1.40	-27.92	26.85
L 90 x 65 x 8	94.33	15.36	2.82	41.05	8.43	1.86	112.55	3.08	22.84	1.39	-36.09	26.78
L 90 x 75 x 9	109.65	17.53	2.78	68.85	12.54	2.21	143.95	3.19	34.55	1.56	-50.76	34.05
L 100 x 50 x 6	89.48	13.72	3.20	15.11	3.81	1.31	94.80	3.29	9.79	1.06	-20.59	14.49
L 100 x 50 x 8	115.78	18.02	3.18	19.40	5.00	1.30	122.54	3.27	12.63	1.05	-26.41	14.36
L 100 x 50 x 10	140.35	22.15	3.15	23.30	6.13	1.29	148.29	3.24	15.36	1.04	-31.49	14.14
L 100 x 65 x 6	97.74	14.33	3.18	32.72	6.51	1.84	111.26	3.40	19.20	1.41	-32.59	22.54
L 100 x 65 x 7	112.50	16.61	3.17	37.58	7.53	1.83	128.04	3.39	22.03	1.40	-37.50	22.52
L 100 x 65 x 8	126.79	18.85	3.16	42.23	8.54	1.83	144.23	3.37	24.80	1.40	-42.17	22.46
L 100 x 65 x 9	140.64	21.05	3.15	46.70	9.52	1.82	159.84	3.36	27.50	1.39	-46.60	22.39

Stainless Structurals Asia Pte Ltd
18 Boon Lay Way, Tradehub 21
#10-139, Singapore 609966

FON: +65 (0)6793 22 82
FAX: +65 (0)6570 89 12

sales@ssasia.sg
www.stainless-structurals.sg

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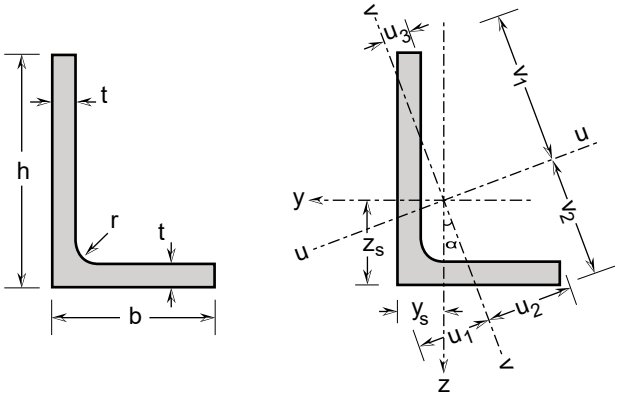


Unequal angles

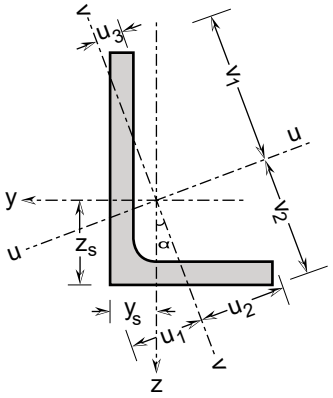
Hot rolled
dimensional tolerances and grades according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Laser fused
according to ASTM A1069, dimensional tolerances and grades, according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Stainless steel
Standard stainless steel grades 304/L and 316/L
Annealed and pickled, lengths of 6000 -0/+100 mm

General properties													
Designation		Dimensions					Position of axes						
	G kg/m	h mm	b mm	t mm	r mm	A mm² x10²	y_s mm	z_s mm	v_1 mm	v_2 mm	u_1 mm	u_2 mm	u_3 mm
L 100 x 65 x 10	12.49	100	65	10	10	15.61	16.34	33.60	67.64	49.55	27.86	34.55	17.81
L 100 x 75 x 6	8.20	100	75	6	10	10.25	17.88	30.12	69.88	53.86	30.15	36.72	21.38
L 100 x 75 x 8	10.77	100	75	8	10	13.47	18.73	31.04	69.50	54.23	31.33	36.53	21.89
L 100 x 75 x 9	12.04	100	75	9	10	15.05	19.14	31.46	69.33	54.37	31.87	36.49	22.14
L 100 x 75 x 10	13.29	100	75	10	10	16.61	19.54	31.87	69.18	54.51	32.39	36.48	22.40
L 125 x 75 x 6	9.42	125	75	6	11	11.77	15.91	40.36	85.03	57.99	28.64	42.42	17.81
L 125 x 75 x 7*	10.81	125	75	7	2	13.51	16.70	41.68	83.94	59.29	30.10	42.40	19.47
L 125 x 75 x 8*	12.29	125	75	8	2	15.36	17.07	42.06	83.74	59.44	30.52	42.36	19.78
L 125 x 75 x 9	13.88	125	75	9	12	17.34	17.15	41.70	84.21	58.74	30.18	41.80	18.69
L 125 x 75 x 10*	15.20	125	75	10	2	19.00	17.82	42.81	83.34	59.74	31.35	42.29	20.39
L 125 x 75 x 12*	18.05	125	75	12	2	22.56	18.56	43.55	82.94	60.03	32.15	42.22	21.00
L 125 x 100 x 10*	17.20	125	100	10	2	21.50	25.92	38.41	87.08	71.99	42.41	47.15	32.31
L 130 x 100 x 11*	17.60	130	100	10	2	22.00	25.44	40.44	90.19	72.49	42.35	48.71	31.40
L 150 x 75 x 8*	13.89	150	75	8	2	17.36	15.57	53.05	97.66	66.68	28.83	45.44	17.68
L 150 x 75 x 9	15.56	150	75	9	2	19.44	15.95	53.43	97.41	66.88	29.22	45.33	18.02
L 150 x 75 x 10	17.32	150	75	10	12	21.65	16.11	53.07	97.86	66.21	28.97	44.81	17.21
L 150 x 75 x 12*	20.45	150	75	12	2	25.56	17.09	54.57	96.64	67.46	30.35	45.02	19.03
L 150 x 75 x 15*	25.20	150	75	15	2	31.50	18.21	55.70	95.87	68.03	31.44	44.73	20.03
L 150 x 90 x 8*	14.85	150	90	8	2	18.56	19.89	49.88	100.80	71.11	35.96	50.94	23.30
L 150 x 90 x 9	16.76	150	90	9	12	20.94	19.95	49.50	101.29	70.36	35.58	50.44	22.17
L 150 x 90 x 10	18.52	150	90	10	12	23.15	20.36	49.96	101.02	70.61	36.09	50.29	22.50
L 150 x 90 x 12	22.01	150	90	12	12	27.51	21.16	50.82	100.50	71.06	37.06	50.04	23.15
L 150 x 90 x 15*	27.00	150	90	15	2	33.75	22.49	52.49	99.40	72.12	38.83	50.70	25.44
L 150 x 100 x 8*	15.49	150	100	8	2	19.36	22.99	47.98	102.50	75.27	40.60	53.61	27.70
L 150 x 100 x 9*	17.36	150	100	9	2	21.69	23.37	48.36	102.34	75.39	41.05	53.62	27.98

⋆ Profiles are laser fused with full penetration, equivalent to hot rolled (r = laser seam).



Structural properties												
Designation	Axis y-y			Axis z-z			Axis u-u		Axis v-v			
	I_y mm^4 x10^4	$W_{el,y}$ mm^3 x10^3	i_y mm x10	I_z mm^4 x10^4	$W_{el,z}$ mm^3 x10^3	i_z mm x10	I_u mm^4 x10^4	i_u mm x10	I_v mm^4 x10^4	i_v mm x10	I_{yz} mm^4 x10^4	α
L 100 x 65 x 10	154.05	23.20	3.14	50.98	10.48	1.81	174.88	3.35	30.15	1.39	-50.80	22.30
L 100 x 75 x 6	102.44	14.66	3.16	49.51	8.67	2.20	125.16	3.49	26.79	1.62	-41.46	28.72
L 100 x 75 x 8	133.05	19.29	3.14	64.08	11.39	2.18	162.49	3.47	34.65	1.60	-53.82	28.67
L 100 x 75 x 9	147.66	21.54	3.13	70.97	12.70	2.17	180.18	3.46	38.45	1.60	-59.59	28.62
L 100 x 75 x 10	161.82	23.75	3.12	77.60	13.99	2.16	197.24	3.45	42.18	1.59	-65.10	28.55
L 125 x 75 x 6	189.64	22.41	4.01	52.08	8.81	2.10	210.14	4.23	31.59	1.64	-56.91	19.80
L 125 x 75 x 7*	221.37	26.57	4.05	61.99	10.63	2.14	246.52	4.27	36.84	1.65	-68.12	20.26
L 125 x 75 x 8*	249.84	30.12	4.03	69.59	12.01	2.13	277.91	4.25	41.52	1.64	-76.47	20.16
L 125 x 75 x 9	274.47	32.95	3.98	74.57	12.89	2.07	303.75	4.18	45.29	1.62	-81.92	19.67
L 125 x 75 x 10*	304.61	37.06	4.00	84.00	14.69	2.10	338.03	4.22	50.58	1.63	-92.13	19.94
L 125 x 75 x 12*	356.60	43.78	3.98	97.43	17.26	2.08	394.71	4.18	59.32	1.62	-106.43	19.70
L 125 x 100 x 10*	336.40	38.85	3.96	192.50	25.99	2.99	431.11	4.48	97.80	2.13	-150.32	32.21
L 130 x 100 x 11*	375.17	41.89	4.13	194.68	26.11	2.97	468.13	4.61	101.73	2.15	-159.43	30.24
L 150 x 75 x 8*	411.98	42.49	4.87	72.72	12.24	2.05	438.53	5.03	46.17	1.63	-98.55	15.08
L 150 x 75 x 9	458.47	47.48	4.86	80.41	13.62	2.03	487.63	5.01	51.26	1.62	-108.96	14.98
L 150 x 75 x 10	500.60	51.65	4.81	85.37	14.50	1.99	530.83	4.95	55.13	1.60	-116.05	14.60
L 150 x 75 x 12*	591.80	62.02	4.81	101.96	17.61	2.00	627.84	4.96	65.92	1.61	-137.68	14.67
L 150 x 75 x 15*	716.38	75.97	4.77	121.55	21.40	1.96	757.95	4.90	79.98	1.59	-162.66	14.34
L 150 x 90 x 8*	439.05	43.85	4.86	123.19	17.57	2.58	489.14	5.13	73.10	1.98	-135.38	20.30
L 150 x 90 x 9	484.51	48.21	4.81	133.11	19.00	2.52	537.25	5.06	80.37	1.96	-146.00	19.86
L 150 x 90 x 10	533.14	53.29	4.80	146.07	20.98	2.51	590.94	5.05	88.28	1.95	-160.35	19.82
L 150 x 90 x 12	627.30	63.25	4.77	170.87	24.82	2.49	694.48	5.02	103.69	1.94	-187.55	19.71
L 150 x 90 x 15*	765.59	78.51	4.76	208.73	30.92	2.49	846.85	5.01	127.47	1.94	-227.72	19.64
L 150 x 100 x 8*	455.24	44.62	4.85	166.49	21.62	2.93	527.71	5.22	94.01	2.20	-161.80	24.13
L 150 x 100 x 9*	506.91	49.87	4.83	184.75	24.11	2.92	587.04	5.20	104.62	2.20	-179.54	24.05

Stainless Structurals Asia Pte Ltd
18 Boon Lay Way, Tradehub 21
#10-139, Singapore 609966

FON: +65 (0)6793 22 82
FAX: +65 (0)6570 89 12

sales@ssasia.sg
www.stainless-structurals.sg

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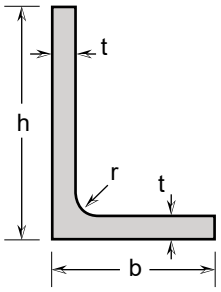
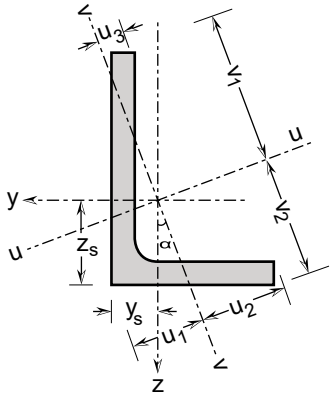




Unequal angles

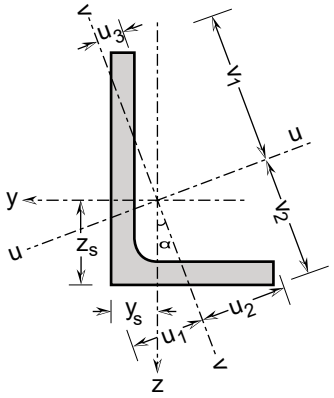
Hot rolled
dimensional tolerances and grades according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Laser fused
according to ASTM A1069, dimensional tolerances and grades, according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

Stainless steel
Standard stainless steel grades 304/L and 316/L
Annealed and pickled, lengths of 6000 -0/+100 mm

General properties													
Designation		Dimensions					Position of axes						
	G kg/m	h mm	b mm	t mm	r mm	A mm² x10²	y_s mm	z_s mm	v_1 mm	v_2 mm	u_1 mm	u_2 mm	u_3 mm
L 150 x 100 x 10	19.32	150	100	10	12	24.15	23.42	48.10	102.73	74.80	40.76	52.94	26.73
L 150 x 100 x 12	22.97	150	100	12	12	28.71	24.22	48.95	102.30	75.18	41.78	52.78	27.32
L 150 x 100 x 15	28.20	150	100	15	2	35.25	25.58	50.57	101.37	76.09	43.65	53.70	29.70
L 200 x 100 x 10*	23.20	200	100	10	2	29.00	20.51	70.49	130.37	88.80	38.20	60.72	23.43
L 200 x 100 x 12*	27.65	200	100	12	2	34.56	21.27	71.26	129.86	89.19	38.97	60.51	24.11
L 200 x 100 x 15*	34.20	200	100	15	2	42.75	22.41	72.40	129.10	89.77	40.11	60.20	25.11
L 200 x 150 x 12*	32.45	200	150	12	2	40.56	36.61	61.61	138.68	109.07	62.00	74.45	45.63
L 200 x 150 x 15*	40.20	200	150	15	2	50.25	37.72	62.71	138.34	109.33	63.41	74.66	46.41

⋆ Profiles are laser fused with full penetration, equivalent to hot rolled (r = laser seam).



Structural properties												
Designation	Axis y-y			Axis z-z			Axis u-u		Axis v-v			
	I_y mm^4 x10^4	$W_{el,y}$ mm^3 x10^3	i_y mm x10	I_z mm^4 x10^4	$W_{el,z}$ mm^3 x10^3	i_z mm x10	I_u mm^4 x10^4	i_u mm x10	I_v mm^4 x10^4	i_v mm x10	I_{yz} mm^4 x10^4	α
L 150 x 100 x 10	552.60	54.23	4.78	198.48	25.92	2.87	636.87	5.13	114.21	2.17	-192.21	23.67
L 150 x 100 x 12	650.54	64.38	4.76	232.59	30.69	2.85	748.88	5.11	134.25	2.16	-225.32	23.58
L 150 x 100 x 15	794.93	79.95	4.75	284.33	38.21	2.84	914.55	5.09	164.72	2.16	-274.56	23.54
L 200 x 100 x 10*	1227.46	94.78	6.51	217.46	27.36	2.74	1307.13	6.71	137.79	2.18	-294.64	15.13
L 200 x 100 x 12*	1449.11	112.56	6.47	254.23	32.29	2.71	1541.31	6.68	162.03	2.17	-344.50	14.98
L 200 x 100 x 15*	1767.81	138.54	6.43	305.95	39.43	2.68	1876.75	6.63	197.01	2.15	-413.67	14.75
L 200 x 150 x 12*	1667.56	120.49	6.41	816.63	72.02	4.49	2053.16	7.11	431.02	3.26	-690.52	29.18
L 200 x 150 x 15*	2037.95	148.44	6.37	992.97	88.43	4.45	2503.37	7.06	527.55	3.24	-838.44	29.04

Stainless Structurals Asia Pte Ltd
18 Boon Lay Way, Tradehub 21
#10-139, Singapore 609966

FON: +65 (0)6793 22 82
FAX: +65 (0)6570 89 12

sales@ssasia.sg
www.stainless-structurals.sg