

## 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

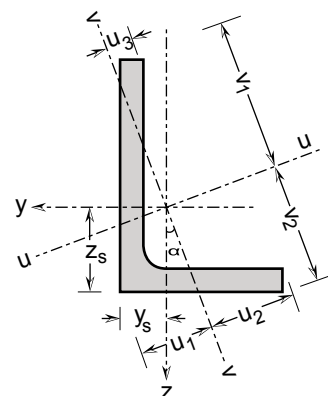
according to ASTM A1069, dimensional tolerances and grades, according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

### Stainless steel

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

### General properties

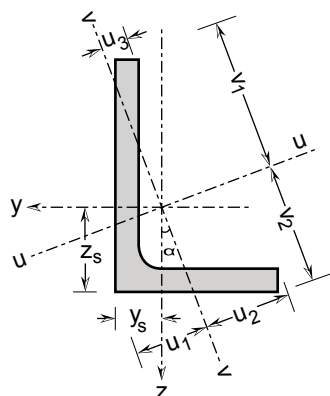
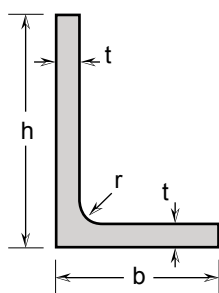
Designation		Dimensions					Position of axes							
	G kg/m	h mm	b mm	t mm	r mm	A mm <sup>2</sup> x10 <sup>2</sup>	y <sub>s</sub> mm	z <sub>s</sub> mm	v <sub>1</sub> mm	v <sub>2</sub> mm	u <sub>1</sub> mm	u <sub>2</sub> mm	u <sub>3</sub> mm	
L 45 x 25 x 4	2.13	45	25	4	5	2.67	5.88	15.68	29.76	20.59	10.22	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		$I_{yz}$ mm <sup>4</sup> x10 <sup>4</sup>	$\alpha$
	$I_y$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,y}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_y$ mm x10	$I_z$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,z}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_z$ mm x10	$I_u$ mm <sup>4</sup> x10 <sup>4</sup>	$i_u$ mm x10	$I_v$ mm <sup>4</sup> x10 <sup>4</sup>	$i_v$ mm x10		
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

# L



## 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

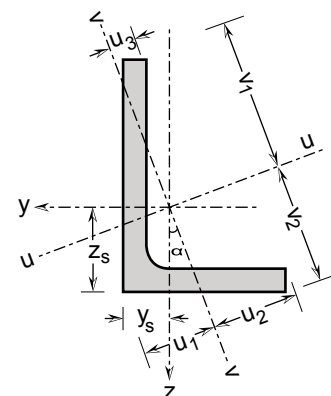
### Stainless steel

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 mm <sup>2</sup> x10 <sup>2</sup>	y <sub>s</sub> mm	z <sub>s</sub> mm	v <sub>1</sub> mm	v <sub>2</sub> mm	u <sub>1</sub> mm	u <sub>2</sub> mm	u <sub>3</sub> 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	

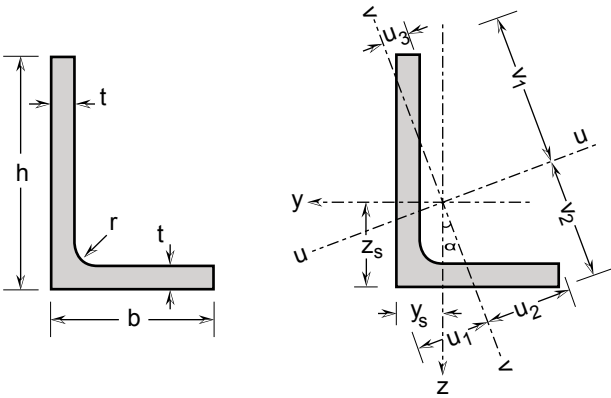
\* Profiles are laser fused with full penetration, equivalent to hot rolled (r = laser seam).



Structural properties

Designation	Axis y-y			Axis z-z			Axis u-u		Axis v-v		$I_{yz}$ mm <sup>4</sup> x10 <sup>4</sup>	$\alpha$
	$I_y$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,y}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_y$ mm x10	$I_z$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,z}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_z$ mm x10	$I_u$ mm <sup>4</sup> x10 <sup>4</sup>	$i_u$ mm x10	$I_v$ mm <sup>4</sup> x10 <sup>4</sup>	$i_v$ mm x10		
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

# L



## 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

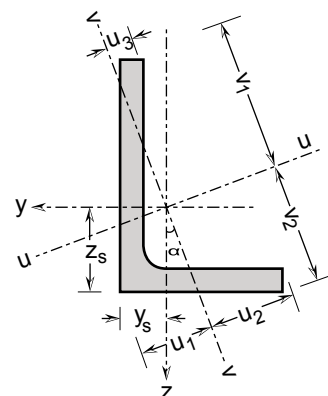
according to ASTM A1069, dimensional tolerances and grades, according to ASTM A276, ASTM A484, ASTM A479, ASME SA479, MTC EN 10204 3.1

### 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 mm <sup>2</sup> x10 <sup>2</sup>	y <sub>s</sub> mm	z <sub>s</sub> mm	v <sub>1</sub> mm	v <sub>2</sub> mm	u <sub>1</sub> mm	u <sub>2</sub> mm	u <sub>3</sub> 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

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Structural properties

Designation	Axis y-y			Axis z-z			Axis u-u		Axis v-v		$I_{yz}$ mm <sup>4</sup> x10 <sup>4</sup>	$\alpha$
	$I_y$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,y}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_y$ mm x10	$I_z$ mm <sup>4</sup> x10 <sup>4</sup>	$W_{el,z}$ mm <sup>3</sup> x10 <sup>3</sup>	$i_z$ mm x10	$I_u$ mm <sup>4</sup> x10 <sup>4</sup>	$i_u$ mm x10	$I_v$ mm <sup>4</sup> x10 <sup>4</sup>	$i_v$ mm x10		
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