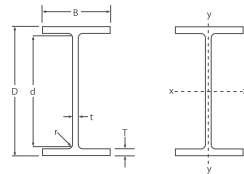


# Universal Beams

Dimensions and properties to BS 4: Part: 1993

1016 x 305 x 487 – 457 x 191 x 82

\*These dimensions are in addition to our standard range to BS4 specifications



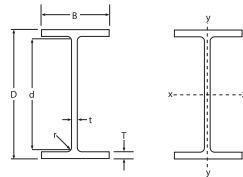
Serial Size	Mass per metre kg/m	Depth of Section D mm	Width of Section B mm	Thickness of Web t mm	Thickness of Flange T mm	Root Radius r mm	Depth between fillets d mm	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section cm <sup>2</sup>
								Flange B/2T	Web d/t	Axis x-x cm <sup>4</sup>	Axis x-x cm <sup>4</sup>	Axis x-x cm	Axis y-y cm	Axis x-x cm <sup>3</sup>	Axis y-y cm <sup>3</sup>	Axis x-x cm <sup>3</sup>	Axis y-y cm <sup>3</sup>					
*1016 x 305 x 487	486.6	1036.1	308.5	30.0	54.1	30.0	867.9	2.85	28.9	1021400	26720	40.6	6.57	19720	1732	23200	2800	0.867	21.1	64.4	4299	620
*1016 x 305 x 437	436.9	1025.9	305.4	26.9	49.0	30.0	867.9	3.12	32.3	909900	23450	40.4	6.49	17740	1535	20760	2469	0.868	23.1	55.9	3185	557
*1016 x 305 x 393	392.7	1016.0	303.0	24.4	43.9	30.0	868.2	3.45	35.6	807700	20500	40.2	6.40	15900	1353	18540	2168	0.868	25.5	48.4	2330	500
*1016 x 305 x 349	349.4	1008.1	302.0	21.1	40.0	30.0	868.1	3.78	41.1	723100	18460	40.3	6.44	14350	1223	16590	1941	0.872	27.9	43.3	1718	445
*1016 x 305 x 314	314.3	1000.0	300.0	19.1	35.9	30.0	868.2	4.18	45.5	644200	16230	40.1	6.37	12880	1082	14850	1713	0.872	30.7	37.7	1264	400
*1016 x 305 x 272	272.3	990.1	300.0	16.5	31.0	30.0	868.1	4.84	52.6	554000	14000	40.0	6.35	11190	934	12830	1470	0.873	35.0	32.2	835	347
*1016 x 305 x 249	248.7	980.2	300.0	16.5	26.0	30.0	868.2	5.77	52.6	481300	11750	39.0	6.09	9821	784	11350	1245	0.861	39.9	26.8	582	317
*1016 x 305 x 222	222.0	970.3	300.0	16.0	21.1	30.0	868.1	7.11	54.3	408000	9546	38.0	5.81	8409	636	9807	1020	0.850	45.7	21.5	390	283
914 x 419 x 388	388.0	921.0	420.5	21.4	36.6	24.1	799.6	5.74	37.4	719600	45440	38.2	9.59	15630	2161	17670	3341	0.885	26.7	88.9	1734	494
914 x 419 x 343	343.3	911.8	418.5	19.4	32.0	24.1	799.6	6.54	41.2	625800	39160	37.8	9.46	13730	1871	15480	2890	0.883	30.1	75.8	1193	437
914 x 305 x 289	289.1	926.6	307.7	19.5	32.0	19.1	824.4	4.81	42.3	504200	15600	37.0	6.51	10880	1014	12570	1601	0.867	31.9	31.2	926	368
914 x 305 x 253	253.4	918.4	305.5	17.3	27.9	19.1	824.4	5.47	47.7	436300	13300	36.8	6.42	9501	871	10940	1371	0.866	36.2	26.4	626	323
914 x 305 x 224	224.2	910.4	304.1	15.9	23.9	19.1	824.4	6.36	51.8	376400	11240	36.3	6.27	8269	739	9535	1163	0.861	41.3	22.1	422	286
914 x 305 x 201	200.9	903.0	303.3	15.1	20.2	19.1	824.4	7.51	54.6	325300	9423	35.7	6.07	7204	621	8351	982	0.854	46.8	18.4	291	256
838 x 292 x 226	226.5	850.9	293.8	16.1	26.8	17.8	761.7	5.48	47.3	339700	11360	34.3	6.27	7985	773	9155	1212	0.870	35.0	19.3	514	289

838 x 292 x 194	193.8	840.7	292.4	14.7	21.7	17.8	761.7	6.74	51.8	279200	9066	33.6	6.06	6641	620	7640	974	0.862	41.6	15.2	306	247
838 x 292 x 176	175.9	834.9	291.7	14.0	18.8	17.8	761.7	7.76	54.4	246000	7799	33.1	5.90	5893	535	6808	842	0.856	46.5	13.0	221	224
762 x 267 x 197	196.8	769.8	268.0	15.6	25.4	16.5	686.0	5.28	44.0	240000	8175	30.9	5.71	6234	610	7167	959	0.869	33.2	11.3	404	251
762 x 267 x 173	173.0	762.2	266.7	14.3	21.6	16.5	686.0	6.17	48.0	205300	6850	30.5	5.58	5387	514	6198	807	0.864	38.1	9.39	267	220
762 x 267 x 147	146.9	754.0	265.2	12.8	17.5	16.5	686.0	7.58	53.6	168500	5455	30.0	5.40	4470	411	5156	647	0.858	45.2	7.40	159	187
762 x 267 x 134	133.9	750.0	264.4	12.0	15.5	16.5	686.0	8.53	57.2	150700	4788	29.7	5.30	4018	362	4644	570	0.854	49.8	6.46	119	171
686 x 254 x 170	170.2	692.9	255.8	14.5	23.7	15.2	615.1	5.40	42.4	170300	6630	28.0	5.53	4916	518	5631	811	0.872	31.8	7.42	308	217
686 x 254 x 152	152.4	687.5	254.5	13.2	21.0	15.2	615.1	6.06	46.6	150400	5784	27.8	5.46	4374	455	5000	710	0.871	35.5	6.42	220	194
686 x 254 x 140	140.1	683.5	253.7	12.4	19.0	15.2	615.1	6.68	49.6	136300	5183	27.6	5.39	3987	409	4558	638	0.868	38.7	5.72	169	178
686 x 254 x 125	125.2	677.9	253.0	11.7	16.2	15.2	615.1	7.81	52.6	118000	4383	27.2	5.24	3481	346	3994	542	0.862	43.9	4.80	116	159
610 x 305 x 238	238.1	635.8	311.4	18.4	31.4	16.5	540.0	4.96	29.3	209500	15840	26.3	7.23	6589	1017	7486	1574	0.886	21.3	14.5	785	303
610 x 305 x 179	179.0	620.2	307.1	14.1	23.6	16.5	540.0	6.51	38.3	153000	11410	25.9	7.07	4935	743	5547	1144	0.886	27.7	10.2	340	228
610 x 305 x 149	149.2	612.4	304.8	11.8	19.7	16.5	540.0	7.74	45.8	125900	9308	25.7	7.00	4111	611	4594	937	0.886	32.7	8.17	200	190
610 x 229 x 140	139.9	617.2	230.2	13.1	22.1	12.7	547.6	5.21	41.8	111800	4505	25.0	5.03	3622	391	4142	611	0.875	30.6	3.99	216	178
610 x 229 x 125	125.1	612.2	229.0	11.9	19.6	12.7	547.6	5.84	46.0	98610	3932	24.9	4.97	3221	343	3676	535	0.873	34.1	3.45	154	159
610 x 229 x 113	113.0	607.6	228.2	11.1	17.3	12.7	547.6	6.60	49.3	87320	3434	24.6	4.88	2874	301	3281	469	0.870	38.0	2.99	111	144
610 x 229 x 101	101.2	602.6	227.6	10.5	14.8	12.7	547.6	7.69	52.2	75780	2915	24.2	4.75	2515	256	2881	400	0.864	43.1	2.52	77.0	129
533 x 210 x 122	122.0	544.5	211.9	12.7	21.3	12.7	476.5	4.97	37.5	76040	3388	22.1	4.67	2793	320	3196	500	0.877	27.6	2.32	178	155
533 x 210 x 109	109.0	539.5	210.8	11.6	18.8	12.7	476.5	5.61	41.1	66820	2943	21.9	4.60	2477	279	2828	436	0.875	30.9	1.99	126	139
533 x 210 x 101	101.0	536.7	210.0	10.8	17.4	12.7	476.5	6.03	44.1	61520	2692	21.9	4.57	2292	256	2612	399	0.874	33.2	1.81	101	129
533 x 210 x 92	92.1	533.1	209.3	10.1	15.6	12.7	476.5	6.71	47.2	55230	2389	21.7	4.51	2072	228	2360	356	0.872	36.5	1.60	75.7	117
533 x 210 x 82	82.2	528.3	208.8	9.6	13.2	12.7	476.5	7.91	49.6	47540	2007	21.3	4.38	1800	192	2059	300	0.864	41.6	1.33	51.5	105
457 x 191 x 98	98.3	467.2	192.8	11.4	19.6	10.2	407.6	4.92	35.8	45730	2347	19.1	4.33	1957	243	2232	379	0.881	25.7	1.18	121	125
457 x 191 x 89	89.3	463.4	191.9	10.5	17.7	10.2	407.6	5.42	38.8	41020	2089	19.0	4.29	1770	218	2014	338	0.880	28.3	1.04	90.7	114
457 x 191 x 82	82.0	460.0	191.3	9.9	16.0	10.2	407.6	5.98	41.2	37050	1871	18.8	4.23	1611	196	1831	304	0.877	30.9	0.922	69.2	104

# Universal Beams

Dimensions and properties to BS 4: Part: 1993

457 x 191 x 74 – 127 x 76 x 13



Designation Serial Size	Mass per metre kg/m	Depth of Section D mm	Width of Section B mm	Thick-ness of Web t mm	Thick-ness of Flange T mm	Root Radius r mm	Depth between fillets d mm	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section cm <sup>2</sup>
								Flange B/2T	Web d/t	Axis x-x cm <sup>4</sup>	Axis x-x cm <sup>4</sup>	Axis x-x cm	Axis y-y cm	Axis x-x cm <sup>3</sup>	Axis y-y cm <sup>3</sup>	Axis x-x cm <sup>3</sup>	Axis y-y cm <sup>3</sup>					
457 x 191 x 74	74.3	457.0	190.4	9.0	14.5	10.2	407.6	6.57	45.3	33320	1671	18.8	4.20	1458	176	1653	272	0.877	33.9	0.818	94.6	74.3
457 x 191 x 67	67.1	453.4	189.9	8.5	12.7	10.2	407.6	7.48	48.0	29380	1452	18.5	4.12	1296	153	1471	237	0.872	37.9	0.705	37.1	85.5
457 x 152 x 82	82.1	465.8	155.3	10.5	18.9	10.2	407.6	4.11	38.8	36590	1185	18.7	3.37	1571	153	1811	240	0.873	27.4	0.591	89.2	105
457 x 152 x 74	74.2	462.0	154.4	9.6	17.0	10.2	407.6	4.54	42.5	32670	1047	18.6	3.33	1414	136	1627	213	0.873	30.1	0.518	65.9	94.5
457 x 152 x 67	67.2	458.0	153.8	9.0	15.0	10.2	407.6	5.13	45.3	28930	913	18.4	3.27	1263	119	1453	187	0.869	33.6	0.448	47.7	85.6
457 x 152 x 60	59.8	454.6	152.9	8.1	13.3	10.2	407.6	5.75	50.3	25500	795	18.3	3.23	1122	104	1287	163	0.868	37.5	0.387	33.8	76.2
457 x 152 x 52	52.3	449.8	152.4	7.6	10.9	10.2	407.6	6.99	53.6	21370	645	17.9	3.11	950	84.6	1096	133	0.859	43.9	0.311	21.4	66.6
406 x 178 x 74	74.2	412.8	179.5	9.5	16.0	10.2	360.4	5.61	37.9	27310	1545	17.0	4.04	1323	172	1501	267	0.882	27.6	0.608	62.8	94.5
406 x 178 x 67	67.1	409.4	178.8	8.8	14.3	10.2	360.4	6.25	41.0	24330	1365	16.9	3.99	1189	153	1346	237	0.880	30.5	0.533	46.1	85.5
406 x 178 x 60	60.1	406.4	177.9	7.9	12.8	10.2	360.4	6.95	45.6	21600	1203	16.8	3.97	1063	135	1199	209	0.880	33.8	0.466	33.3	76.5
406 x 178 x 54	54.1	402.6	177.7	7.7	10.9	10.2	360.4	8.15	46.8	18720	1021	16.5	3.85	930	115	1055	178	0.871	38.3	0.392	23.1	69.0
406 x 140 x 46	46.0	403.2	142.2	6.8	11.2	10.2	360.4	6.35	53.0	15690	538	16.4	3.03	778	75.7	888	118	0.871	38.9	0.207	19.0	58.6
406 x 140 x 39	39.0	398.0	141.8	6.4	8.6	10.2	360.4	8.24	56.3	12510	410	15.9	2.87	629	57.8	724	90.8	0.858	47.5	0.155	10.7	49.7
356 x 171 x 67	67.1	363.4	173.2	9.1	15.7	10.2	311.6	5.52	34.2	19460	1362	15.1	3.99	1071	157	1211	243	0.886	24.4	0.412	55.7	85.5
356 x 171 x 57	57.0	358.0	172.2	8.1	13.0	10.2	311.6	6.62	38.5	16040	1108	14.9	3.91	896	129	1010	199	0.882	28.8	0.330	33.4	72.6

356 x 171 x 51	51.0	355.0	171.5	7.4	11.5	10.2	311.6	7.46	42.1	14140	968	14.8	3.86	796	113	896	174	0.881	32.1	0.286	23.8	64.9
356 x 171 x 45	45.0	351.4	171.1	7.0	9.7	10.2	311.6	8.82	44.5	12070	811	14.5	3.76	687	94.8	775	147	0.874	36.8	0.237	15.8	57.3
356 x 127 x 39	39.1	353.4	126.0	6.6	10.7	10.2	311.6	5.89	47.2	10170	358	14.3	2.68	576	56.8	659	89.1	0.871	35.2	0.105	15.1	49.8
356 x 127 x 33	33.1	349.0	125.4	6.0	8.5	10.2	311.6	7.38	51.9	8249	280	14.0	2.58	473	44.7	543	70.3	0.863	42.2	0.0812	8.79	42.1
305 x 165 x 54	54.0	310.4	166.9	7.9	13.7	8.9	265.2	6.09	33.6	11700	1063	13.0	3.93	754	127	846	196	0.889	23.6	0.234	34.8	68.8
305 x 165 x 46	46.1	306.6	165.7	6.7	11.8	8.9	265.2	7.02	39.6	9899	896	13.0	3.90	646	108	720	166	0.891	27.1	0.195	22.2	58.7
305 x 165 x 40	40.3	303.4	165.0	6.0	10.2	8.9	265.2	8.09	44.2	8503	764	12.9	3.86	560	92.6	623	142	0.889	31.0	0.164	14.7	51.3
305 x 127 x 48	48.1	311.0	125.3	9.0	14.0	8.9	265.2	4.48	29.5	9575	461	12.5	2.74	616	73.6	711	116	0.873	23.3	0.102	31.8	61.2
305 x 127 x 42	41.9	307.2	124.3	8.0	12.1	8.9	265.2	5.14	33.2	8196	389	12.4	2.70	534	62.6	614	98.4	0.872	26.5	0.0846	21.1	53.4
305 x 127 x 37	37.0	304.4	123.4	7.1	10.7	8.9	265.2	5.77	37.4	7171	336	12.3	2.67	471	54.5	539	85.4	0.872	29.7	0.0725	14.8	47.2
305 x 102 x 33	32.8	312.7	102.4	6.6	10.8	7.6	275.9	4.74	41.8	6501	194	12.5	2.15	416	37.9	481	60.0	0.866	31.6	0.0442	12.2	41.8
305 x 102 x 28	28.2	308.7	101.8	6.0	8.8	7.6	275.9	5.78	46.0	5366	155	12.2	2.08	348	30.5	403	48.5	0.859	37.4	0.0349	7.40	35.9
305 x 102 x 25	24.8	305.1	101.6	5.8	7.0	7.6	275.9	7.26	47.6	4455	123	11.9	1.97	292	24.2	342	38.8	0.846	43.4	0.0273	4.77	31.6
254 x 146 x 43	43.0	259.6	147.3	7.2	12.7	7.6	219.0	5.80	30.4	6544	677	10.9	3.52	504	92.0	566	141	0.891	21.2	0.103	23.9	54.8
254 x 146 x 37	37.0	256.0	146.4	6.3	10.9	7.6	219.0	6.72	34.8	5537	571	10.8	3.48	433	78.0	483	119	0.890	24.3	0.0857	15.3	47.2
254 x 146 x 31	31.1	251.4	146.1	6.0	8.6	7.6	219.0	8.49	36.5	4413	448	10.5	3.36	351	61.3	393	94.1	0.880	29.6	0.0660	8.55	39.7
254 x 102 x 28	28.3	260.4	102.2	6.3	10.0	7.6	225.2	5.11	35.7	4005	179	10.5	2.22	308	34.9	353	54.8	0.874	27.5	0.0280	9.57	36.1
254 x 102 x 25	25.2	257.2	101.9	6.0	8.4	7.6	225.2	6.07	37.5	3415	149	10.3	2.15	266	29.2	306	46.0	0.866	31.5	0.0230	6.42	32.0
254 x 102 x 22	22.0	265.0	101.6	5.7	6.8	7.6	225.2	7.47	393.5	2841	119	10.1	2.06	224	23.5	259	37.3	0.856	36.4	0.0182	4.15	28.0
203 x 133 x 30	30.0	206.8	133.9	6.4	9.6	7.6	172.4	6.97	26.9	2896	385	8.71	3.17	280	57.5	314	88.2	0.881	21.5	0.0374	10.3	38.2
203 x 133 x 25	25.1	203.2	133.2	5.7	7.8	7.6	172.4	8.54	30.2	2340	308	8.56	3.10	230	46.2	258	70.9	0.877	25.6	0.0294	5.96	32.0
203 x 102 x 23	23.1	203.2	101.8	5.4	9.3	7.6	169.4	5.47	31.4	2105	164	8.46	2.36	207	32.2	234	49.8	0.888	22.5	0.0154	7.02	29.4
178 x 102 x 19	19.0	177.8	101.2	4.9	7.9	7.6	146.8	6.41	30.6	1356	137	7.48	2.37	153	27.0	171	41.6	0.888	22.6	0.0099	4.41	24.3
152 x 89 x 16	16.0	152.4	88.7	4.5	7.7	7.6	121.8	5.76	27.1	834	89.9	6.41	2.10	109	20.2	123	31.2	0.890	19.6	0.0047	3.56	20.3
127 x 76 x 13	13.0	127.0	76.0	4.0	7.6	7.6	96.6	5.00	24.2	473	55.7	5.35	1.84	74.6	14.7	84.2	22.6	0.895	16.3	0.0020	2.85	16.5