

Liftcrane Boom Capacities

Boom No. B10:680

881,800 lb VPC (Variable Position Counterweight)

360 Degree Rating

MLC650 SERIES 3



LIFTING CAPACITIES: Lifting capacities for various boom lengths and operating radii are for freely suspended loads and may be based on percent of static tipping or strength of structural components. Capacities must be reduced by applicable deducts.

Upper boom point capacity for liftcrane service with single part whip line from Drum 3 is 30,000 lb or 60,000 lb with two part whip line. When Drum 1 or Drum 2 is used, capacity with single part whip line is 48,800 lb, or 73,500 lb with two part whip line. In all cases, upper boom point capacities cannot exceed those listed for main boom capacity.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom and jib point sheaves is considered part of load. Boom is not to be lowered beyond radii where combined weights are greater than rated capacity. Where no capacity is shown, operation is not intended or approved.

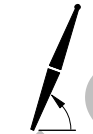
BOOM BACKWARD STABILITY: Capacities indicated by (b) require 12,000 lb minimum weight suspended beneath boom point and (c) require 24,000 lb minimum weight. **Caution: Do not operate in areas indicated by (b) or (c) without required minimum weight. Boom may not lower and boom hoist wire rope may go slack causing wire rope damage or failure.**

OPERATING CONDITIONS: Machine to operate on a firm, level, and uniformly supporting surface. Refer to Boom Rigging **No. 81018141**, Wire Rope Specifications chart **No. 9359-A**, Counterweight Arrangements chart **No. 9349-A**, and Wind Conditions chart **No. 9358-A**. Crane operator judgment must be used to allow for dynamic load effects of swinging, hoisting or lowering, travel, wind conditions, as well as adverse operating conditions and physical machine depreciation. Refer to the Operator Manual for operating guidelines.

MACHINE TRAVEL: Machine to travel on a firm, level, and uniformly supporting surface. Boom must be within boom angle range shown in capacity chart. Refer to Maximum Allowable Travel Specifications chart **No. 9354-A**.



OPERATING RADIUS: Operating radius is horizontal distance from axis of rotation to center of vertical hoist line or load block.



BOOM ANGLE: Boom angle in degrees (°) is angle between horizontal and centerline of boom butt and inserts, and is an indication of operating radius. In all cases, operating radius shall govern capacity.



BOOM POINT ELEVATION: Boom point elevation is vertical distance from ground level to centerline of boom point shaft.

MACHINE EQUIPMENT: Machine equipped with 36 ft 6 in. crawlers, 60 in. or 80 in. treads, 36 ft 1 in. live mast, 30 part boom hoist reeving, boom support straps, and 881,800 lb VPC.

Consult chart **No. 9488-A** when Jib No. 148 is attached.

Luffing Jib Backstay Deduct	
Boom Length (ft)	Deduct (lb)
105.0	3,500
124.7	5,000
144.4	6,000
164.0	7,500
183.7	8,500
203.4	10,000
223.1	10,000
242.8	10,000
262.5	11,000
282.2	12,500
Deduct the appropriate value from capacities when luffing jib backstays are stored on boom.	

Deduct From Capacities When Jib No. 148 Is Attached	
Jib Length (ft)	Deduct (lb)
39.4	18,800
59.1	23,500
78.7	29,400
98.4	35,300
118.1	42,500
137.8	48,100
Weight of jib and 6,500 lb suspended beneath jib point have been included in determination of deduct.	

Refer to Table 1 (with luffing jib backstays stored) and Table 2 (without luffing jib backstays stored) for raising ability with the maximum weight of all load blocks, hooks, weight ball, slings, and hoist lines beneath boom point sheaves. For block weights shown with #, load blocks, hooks, weight ball, and slings must remain on ground until combined weights are within rated capacity of chart. For boom lengths shown with (a), upper boom point must be removed and boom top equipped with a maximum of eight (8) sheaves in lower boom point. Raising is not permitted in shaded areas of table.

Combined weight beneath boom point sheaves must not exceed block weight shown.

Table 1: With Luffing Jib Backstays

Over End or Side of Crawlers	
Boom Length (ft)	Block Weight (lb)
105.0	46,500
124.7	46,500
144.4	46,500
164.0	46,500
183.7	46,500
203.4	46,500
223.1	46,500
242.8	22,600
262.5	16,200
282.2	#
301.8	Raising Not Permitted
321.5	
341.2	

Table 2: Without Luffing Jib Backstays

Over End or Side of Crawlers	
Boom Length (ft)	Block Weight (lb)
105.0	46,500
124.7	46,500
144.4	46,500
164.0	46,500
183.7	46,500
203.4	46,500
223.1	46,500
242.8	22,600
262.5	22,600
282.2	16,200
301.8	#
321.5	#
(a) 341.2	#

Explanation of Symbols



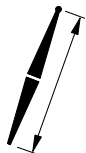
Boom No. B10:680



VPC (Variable Position Counterweight)



360 Degree Rating



Boom Length

Operating Radius
(see page 1)Boom Angle
(see page 1)Boom Point Elevation
(see page 1)Lifting Capacities
(see page 1)

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881,800 lb



360°

105.0 ft			
ft	°	ft	lb
19	84.9	114.4	1,433,000 c
20	84.3	114.2	1,300,800 c
22	83.2	113.9	1,205,700 c
24	82.1	113.6	1,123,200 b
26	81.0	113.2	1,051,100 b
28	79.9	112.8	987,500 b
30	78.8	112.3	931,000 b
32	77.6	111.8	880,500
34	76.5	111.2	835,100
36	75.4	110.6	794,100
38	74.2	110.0	756,700
40	73.1	109.3	722,700
45	70.2	107.4	649,400
50	67.2	105.2	589,300
55	64.1	102.7	539,100
60	61.0	99.8	496,600
65	57.7	96.5	450,500
70	54.3	92.8	409,200
75	50.8	88.6	374,700
80	47.0	83.8	345,300
85	43.0	78.4	320,100
90	38.6	72.0	298,100
95	33.6	64.5	278,900
100	27.8	55.2	261,800
105	20.4	42.5	246,600

124.7 ft			
ft	°	ft	lb
22	84.3	133.8	1,184,300 c
24	83.4	133.5	1,105,300 b
26	82.4	133.2	1,035,900 b
28	81.5	132.8	974,500
30	80.6	132.4	919,800
32	79.6	132.0	870,800
34	78.7	131.6	826,600
36	77.7	131.1	786,600
38	76.8	130.5	750,200
40	75.8	130.0	716,900
45	73.4	128.4	645,100
50	71.0	126.6	586,000
55	68.5	124.5	536,600
60	66.0	122.2	494,600
65	63.4	119.6	455,200
70	60.7	116.7	413,600
75	58.0	113.5	378,800
80	55.2	109.9	349,200
85	52.3	106.0	323,800
90	49.2	101.5	301,700
95	46.0	96.6	282,200
100	42.5	91.1	265,100
105	38.9	84.8	249,800
110	34.8	77.6	236,100
115	30.3	69.1	223,700
120	24.9	58.6	212,500
125	18.0	44.4	202,300

144.4 ft			
ft	°	ft	lb
24	84.3	153.4	1,083,900 b
26	83.5	153.1	1,017,500
28	82.7	152.8	958,500
30	81.9	152.5	905,800
32	81.1	152.1	858,400
34	80.3	151.7	815,600
36	79.4	151.3	776,800
38	78.6	150.8	741,300
40	77.8	150.3	708,900
45	75.8	149.0	638,700
50	73.7	147.5	580,800
55	71.6	145.7	532,200
60	69.5	143.8	490,900
65	67.3	141.6	455,400
70	65.1	139.2	416,100
75	62.9	136.6	381,100
80	60.6	133.7	351,300
85	58.2	130.5	325,700
90	55.8	127.0	303,400
95	53.3	123.2	283,900
100	50.7	119.0	266,600
105	48.0	114.4	251,200
110	45.2	109.4	237,400
115	42.2	103.8	225,000
120	39.1	97.6	213,700
125	35.7	90.6	203,500
130	31.9	82.6	194,100
135	27.7	73.2	185,500
140	22.7	61.6	175,800
145	16.1	45.7	160,100

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881,800 lb



360°

164.0 ft			
ft	°	ft	lb
24	85.0	173.2	1,061,400
26	84.3	173.0	998,300
28	83.6	172.7	942,000
30	82.9	172.4	891,500
32	82.2	172.1	845,900
34	81.4	171.7	804,700
36	80.7	171.4	767,100
38	80.0	171.0	732,800
40	79.3	170.6	701,300
45	77.5	169.4	632,900
50	75.7	168.0	576,300
55	73.9	166.5	528,700
60	72.0	164.8	488,100
65	70.2	163.0	453,100
70	68.3	160.9	419,900
75	66.4	158.6	384,600
80	64.4	156.2	354,600
85	62.4	153.5	328,800
90	60.4	150.6	306,300
95	58.4	147.4	286,600
100	56.3	144.0	269,200
105	54.1	140.3	253,700
110	51.8	136.3	239,800
115	49.5	132.0	227,300
120	47.1	127.3	215,900
125	44.6	122.2	205,600
130	42.0	116.6	196,100
135	39.2	110.4	187,400
140	36.3	103.5	179,400
145	33.1	95.8	171,500
150	29.5	87.1	160,000
155	25.6	76.8	148,600
160	20.8	64.1	137,100

183.7 ft			
ft	°	ft	lb
26	84.9	192.8	979,200
28	84.3	192.6	925,500
30	83.6	192.3	877,200
32	83.0	192.0	833,400
34	82.4	191.7	793,600
36	81.7	191.4	757,300
38	81.1	191.0	724,100
40	80.5	190.6	693,500
45	78.9	189.6	627,000
50	77.3	188.4	571,700
55	75.7	187.1	525,000
60	74.0	185.6	485,100
65	72.4	183.9	450,700
70	70.7	182.1	420,600
75	69.1	180.2	388,200
80	67.4	178.0	358,000
85	65.6	175.7	331,900
90	63.9	173.2	309,300
95	62.1	170.5	289,400
100	60.3	167.5	271,900
105	58.5	164.4	256,200
110	56.6	161.1	242,200
115	54.7	157.5	229,500
120	52.7	153.6	218,100
125	50.7	149.4	207,700
130	48.6	145.0	198,100
135	46.4	140.1	189,400
140	44.2	134.9	181,300
145	41.8	129.3	172,200
150	39.4	123.1	161,700
155	36.7	116.4	151,800
160	34.0	109.0	142,200
165	30.9	100.7	132,900
170	27.6	91.2	123,900
175	23.8	80.1	114,800
180	19.2	66.4	105,500

203.4 ft			
ft	°	ft	lb
28	84.8	212.4	905,500
30	84.3	212.1	859,700
32	83.7	211.9	818,100
34	83.1	211.6	780,200
36	82.5	211.3	745,500
38	82.0	211.0	713,500
40	81.4	210.7	684,100
45	80.0	209.7	619,800
50	78.5	208.6	566,100
55	77.1	207.4	520,600
60	75.6	206.1	481,600
65	74.2	204.6	447,800
70	72.7	203.0	418,300
75	71.2	201.3	391,700
80	69.7	199.4	361,200
85	68.2	197.3	335,000
90	66.6	195.1	312,100
95	65.1	192.7	292,100
100	63.5	190.1	274,400
105	61.9	187.4	258,600
110	60.2	184.5	244,500
115	58.6	181.4	231,700
120	56.9	178.1	220,200
125	55.2	174.5	209,700
130	53.4	170.8	200,100
135	51.6	166.7	191,300
140	49.7	162.4	180,600
145	47.8	157.9	170,000
150	45.9	153.0	160,000
155	43.8	147.7	150,600
160	41.7	142.0	141,700
165	39.5	135.9	133,100
170	37.1	129.3	125,000
175	34.6	122.0	117,100
180	32.0	114.0	109,500
185	29.1	105.1	102,000
190	25.9	94.9	94,600
195	22.3	83.0	87,200
200	17.9	68.3	79,500

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881,800 lb



360°

223.1 ft			
ft	°	ft	lb
30	84.8	232.0	836,900
32	84.2	231.7	797,800
34	83.7	231.5	762,000
36	83.2	231.2	729,100
38	82.7	230.9	698,700
40	82.2	230.6	670,700
45	80.9	229.8	609,000
50	79.6	228.8	557,200
55	78.2	227.7	513,100
60	76.9	226.5	475,200
65	75.6	225.1	442,200
70	74.3	223.7	413,300
75	72.9	222.1	387,800
80	71.6	220.4	361,500
85	70.2	218.5	335,100
90	68.8	216.5	312,200
95	67.4	214.4	292,100
100	66.0	212.1	274,300
105	64.6	209.7	258,500
110	63.1	207.1	244,300
115	61.7	204.4	231,500
120	60.2	201.5	219,900
125	58.7	198.4	209,400
130	57.1	195.1	199,700
135	55.6	191.6	190,900
140	54.0	187.9	180,300
145	52.3	184.0	169,900
150	50.7	179.8	160,200
155	49.0	175.4	151,100
160	47.2	170.7	142,500
165	45.4	165.8	134,300
170	43.5	160.5	126,600
175	41.6	154.8	119,200
180	39.5	148.7	112,100
185	37.4	142.1	105,200
190	35.2	135.0	98,700
195	32.8	127.2	92,300
200	30.3	118.7	86,000
205	27.5	109.2	79,900
210	24.5	98.4	73,800
215	21.0	85.7	67,500
220	16.7	70.0	61,000

242.8 ft			
ft	°	ft	lb
32	84.7	251.5	778,800
34	84.2	251.3	745,100
36	83.8	251.1	714,000
38	83.3	250.8	685,300
40	82.8	250.5	658,600
45	81.6	249.7	599,700
50	80.4	248.8	549,800
55	79.2	247.8	507,200
60	78.0	246.7	470,400
65	76.8	245.5	438,300
70	75.6	244.2	410,100
75	74.3	242.7	385,100
80	73.1	241.2	362,800
85	71.9	239.5	337,900
90	70.6	237.7	314,800
95	69.3	235.8	294,600
100	68.1	233.7	276,700
105	66.8	231.5	260,700
110	65.5	229.2	246,400
115	64.2	226.7	233,500
120	62.8	224.1	221,800
125	61.5	221.3	210,000
130	60.1	218.4	197,300
135	58.7	215.3	185,600
140	57.3	212.1	174,700
145	55.9	208.6	164,500
150	54.4	205.0	154,900
155	52.9	201.2	145,900
160	51.4	197.1	137,500
165	49.9	192.9	129,500
170	48.3	188.4	121,900
175	46.7	183.6	114,800
180	45.0	178.6	107,900
185	43.3	173.2	101,400
190	41.5	167.5	95,100
195	39.6	161.4	89,100
200	37.7	154.9	83,300
205	35.6	147.9	77,700
210	33.5	140.4	72,200
215	31.2	132.1	66,900
220	28.8	123.1	61,600
225	26.1	113.0	56,400
230	23.2	101.5	51,200
235	19.8	88.1	45,800
240	15.7	71.4	40,100

262.5 ft			
ft	°	ft	lb
34	84.7	271.1	712,500
36	84.2	270.9	702,400
38	83.8	270.6	674,800
40	83.4	270.4	649,100
45	82.2	269.7	592,200
50	81.1	268.8	543,900
55	80.0	267.9	502,400
60	78.9	266.9	466,400
65	77.8	265.8	435,000
70	76.7	264.6	407,300
75	75.5	263.2	382,800
80	74.4	261.8	360,800
85	73.3	260.2	340,000
90	72.1	258.6	316,800
95	71.0	256.8	296,500
100	69.8	254.9	278,400
105	68.6	252.9	262,400
110	67.4	250.8	248,000
115	66.2	248.6	235,100
120	65.0	246.2	220,300
125	63.8	243.7	206,700
130	62.6	241.1	194,200
135	61.3	238.3	182,600
140	60.1	235.4	171,800
145	58.8	232.3	161,700
150	57.5	229.0	152,300
155	56.2	225.7	143,400
160	54.8	222.1	135,100
165	53.5	218.3	127,300
170	52.1	214.4	119,900
175	50.7	210.2	112,900
180	49.2	205.9	106,200
185	47.7	201.3	99,800
190	46.2	196.5	93,800
195	44.6	191.4	88,000
200	43.0	186.0	82,400
205	41.4	180.3	77,100
210	39.7	174.2	71,900
215	37.9	167.7	66,900
220	36.0	160.8	62,100
225	34.1	153.4	57,400
230	32.0	145.4	52,800
235	29.8	136.8	48,300
240	27.5	127.2	43,800
245	24.9	116.6	39,300
250	22.1	104.5	34,800
255	18.8	90.3	30,200

B10



881,800 lb



360°

282.2 ft			
ft	°	ft	lb
36	84.6	290.7	604,200
38	84.2	290.5	602,400
40	83.8	290.2	600,500
45	82.8	289.6	582,600
50	81.8	288.8	536,200
55	80.7	287.9	496,200
60	79.7	287.0	461,300
65	78.7	286.0	430,800
70	77.6	284.8	403,800
75	76.6	283.6	379,700
80	75.5	282.3	358,200
85	74.5	280.8	338,900
90	73.4	279.3	319,300
95	72.3	277.7	298,800
100	71.3	275.9	280,600
105	70.2	274.1	262,800
110	69.1	272.1	245,100
115	68.0	270.1	229,100
120	66.9	267.9	214,400
125	65.8	265.6	200,900
130	64.7	263.2	188,400
135	63.5	260.7	176,900
140	62.4	258.0	166,200
145	61.2	255.2	156,200
150	60.0	252.3	146,800
155	58.8	249.2	138,100
160	57.6	246.0	129,900
165	56.4	242.7	122,100
170	55.2	239.1	114,800
175	53.9	235.5	107,900
180	52.6	231.6	101,400
185	51.3	227.5	95,100
190	50.0	223.3	89,200
195	48.6	218.9	83,600
200	47.2	214.2	78,100
205	45.8	209.3	73,000
210	44.4	204.1	68,000
215	42.9	198.7	63,200
220	41.3	193.0	58,600
225	39.7	186.9	54,100
230	38.1	180.5	49,800
235	36.4	173.7	45,600
240	34.6	166.4	41,500
245	32.7	158.7	37,500
250	30.7	150.2	33,500
255	28.6	141.1	29,700
260	26.3	131.1	25,800
265	23.8	119.9	21,900
270	21.0	107.2	18,000

301.8 ft			
ft	°	ft	lb
36	85.0	310.5	518,100
38	84.6	310.3	516,300
40	84.2	310.1	514,700
45	83.3	309.4	510,500
50	82.3	308.7	506,500
55	81.3	307.9	489,400
60	80.4	307.0	455,700
65	79.4	306.1	426,100
70	78.4	305.0	399,800
75	77.5	303.9	376,400
80	76.5	302.6	355,400
85	75.5	301.3	336,400
90	74.5	299.9	319,300
95	73.5	298.4	299,000
100	72.5	296.8	278,200
105	71.5	295.0	258,900
110	70.5	293.2	241,300
115	69.5	291.3	225,300
120	68.5	289.3	210,700
125	67.5	287.2	197,200
130	66.4	285.0	184,800
135	65.4	282.7	173,400
140	64.3	280.2	162,700
145	63.3	277.7	152,800
150	62.2	275.0	143,500
155	61.1	272.2	134,900
160	60.0	269.3	126,700
165	58.9	266.2	119,100
170	57.7	263.0	111,800
175	56.6	259.7	105,000
180	55.5	256.2	98,500
185	54.3	252.6	92,400
190	53.1	248.8	86,600
195	51.9	244.8	81,000
200	50.6	240.7	75,700
205	49.4	236.3	70,600
210	48.1	231.8	65,800
215	46.8	227.1	61,100
220	45.5	222.1	56,600
225	44.1	216.9	52,300
230	42.7	211.5	48,100
235	41.2	205.7	44,100
240	39.8	199.7	40,200
245	38.2	193.3	36,400
250	36.6	186.6	32,700
255	35.0	179.4	29,100
260	33.2	171.8	25,600
265	31.4	163.6	22,100
270	29.5	154.8	18,700

321.5 ft			
ft	°	ft	lb
38	84.9	330.1	444,600
40	84.6	329.9	443,100
45	83.7	329.3	439,500
50	82.8	328.6	435,800
55	81.9	327.9	432,300
60	81.0	327.0	428,900
65	80.1	326.1	423,000
70	79.2	325.1	397,600
75	78.3	324.1	374,800
80	77.3	322.9	354,300
85	76.4	321.7	333,000
90	75.5	320.3	308,300
95	74.6	318.9	286,000
100	73.6	317.4	265,900
105	72.7	315.8	247,800
110	71.8	314.1	231,200
115	70.8	312.4	216,100
120	69.9	310.5	202,200
125	68.9	308.5	189,400
130	68.0	306.5	177,100
135	67.0	304.3	165,800
140	66.0	302.1	155,200
145	65.0	299.7	145,400
150	64.0	297.2	136,300
155	63.0	294.6	127,700
160	62.0	292.0	119,700
165	61.0	289.1	112,200
170	60.0	286.2	105,000
175	58.9	283.2	98,300
180	57.9	280.0	92,000
185	56.8	276.7	85,900
190	55.7	273.2	80,200
195	54.6	269.6	74,800
200	53.5	265.9	69,600
205	52.4	262.0	64,600
210	51.2	258.0	59,900
215	50.1	253.7	55,300
220	48.9	249.3	51,000
225	47.7	244.7	46,800
230	46.4	239.9	42,700
235	45.2	234.9	38,900
240	43.9	229.7	35,100
245	42.6	224.2	31,500
250	41.2	218.5	28,000
255	39.8	212.5	24,500
260	38.4	206.1	21,200
265	36.9	199.4	18,000

MLC650 S-3

ASME B30.5



B10



881,800 lb



360°

 ft	 °	 ft	 lb
40	84.9	349.7	384,500
45	84.0	349.1	381,200
50	83.2	348.5	378,000
55	82.4	347.8	374,900
60	81.5	347.0	371,900
65	80.7	346.1	368,800
70	79.8	345.2	365,700
75	78.9	344.2	362,900
80	78.1	343.1	350,700
85	77.2	341.9	328,000
90	76.4	340.7	303,700
95	75.5	339.4	281,700
100	74.6	338.0	261,900
105	73.7	336.5	243,900
110	72.9	334.9	227,500
115	72.0	333.2	212,500
120	71.1	331.5	198,700
125	70.2	329.7	186,000
130	69.3	327.7	174,200
135	68.4	325.7	162,900
140	67.5	323.6	152,400
145	66.6	321.4	142,600
150	65.6	319.1	133,500
155	64.7	316.7	124,900
160	63.8	314.2	116,900
165	62.8	311.6	109,400
170	61.9	308.9	102,300
175	60.9	306.1	95,600
180	59.9	303.2	89,300
185	58.9	300.1	83,300
190	58.0	297.0	77,600
195	56.9	293.7	72,200
200	55.9	290.3	67,000
205	54.9	286.7	62,100
210	53.9	283.0	57,400
215	52.8	279.2	52,900
220	51.7	275.2	48,600
225	50.6	271.1	44,500
230	49.5	266.8	40,500
235	48.4	262.3	36,700
240	47.3	257.6	33,000
245	46.1	252.8	29,400
250	44.9	247.7	26,000
255	43.7	242.5	22,700
260	42.4	237.0	19,500