Liftcrane Boom Capacities

Boom No. B10:680
440,900 lb VPC (Variable Position Counterweight)
360 Degree Rating

MLC650 SERIES 1

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.

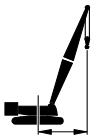
Upper boom point capacity for liftcrane service with single part whip line from Drum 3 is 30,000 lb or 60,000 lb with two part whip line. When Drum 1 or Drum 2 is used, capacity with single part whip line is 48,800 lb, or 73,500 lb with two part whip line. In all cases, upper boom point capacities cannot 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 440,900 lb VPC.

Consult chart **No. 9490-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
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 Tables 1 and 2 (with luffing jib backstays stored) and Tables 3 and 4 (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. 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	22,600
203.4	22,600
223.1	#
242.8	Raising Not Permitted
262.5	

Table 2: With Luffing Jib Backstays

Over End of Blocked 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	22,600
203.4	22,600
223.1	#
242.8	#
262.5	Raising Not Permitted

Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. *Crane tipping or structural damage can occur.*

Table 3: 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	22,600
223.1	16,200
242.8	#
262.5	Raising Not Permitted

Table 4: Without Luffing Jib Backstays

Over End of Blocked 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	22,600
223.1	16,200
242.8	16,200
262.5	#

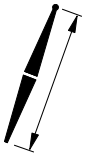
Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. *Crane tipping or structural damage can occur.*

Explanation of Symbols

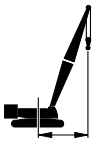
Boom No. B10:680

VPC (Variable Position Counterweight)

360 Degree Rating

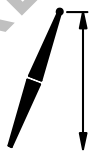


Boom Length



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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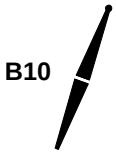
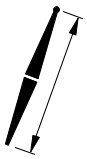
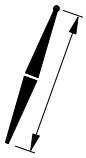
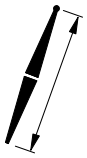




ft	°	ft	lb
19	84.9	114.4	1,239,600 **c**
20	84.3	114.2	1,190,600 **c**
22	83.2	113.9	1,103,200 **c**
24	82.1	113.6	1,027,600 **b**
26	81.0	113.2	961,400 **b**
28	79.9	112.8	903,100 **b**
30	78.8	112.3	851,300 **b**
32	77.6	111.8	805,000
34	76.5	111.2	763,300
36	75.4	110.6	713,800
38	74.2	110.0	654,300
40	73.1	109.3	603,700
45	70.2	107.4	505,400
50	67.2	105.2	434,000
55	64.1	102.7	379,900
60	61.0	99.8	337,300
65	57.7	96.5	303,100
70	54.3	92.8	274,900
75	50.8	88.6	251,300
80	47.0	83.8	231,200
85	43.0	78.4	213,900
90	38.6	72.0	198,900
95	33.6	64.5	183,600
100	27.8	55.2	168,800
105	20.4	42.5	155,200



ft	°	ft	lb
22	84.3	133.8	1,084,500 **c**
24	83.4	133.5	1,011,800 **b**
26	82.4	133.2	948,100 **b**
28	81.5	132.8	891,700
30	80.6	132.4	841,500
32	79.6	132.0	796,500
34	78.7	131.6	755,900
36	77.7	131.1	719,200
38	76.8	130.5	663,300
40	75.8	130.0	612,200
45	73.4	128.4	512,700
50	71.0	126.6	440,400
55	68.5	124.5	385,600
60	66.0	122.2	342,600
65	63.4	119.6	307,900
70	60.7	116.7	279,300
75	58.0	113.5	255,400
80	55.2	109.9	235,100
85	52.3	106.0	217,600
90	49.2	101.5	200,800
95	46.0	96.6	184,400
100	42.5	91.1	169,800
105	38.9	84.8	156,700
110	34.8	77.6	144,900
115	30.3	69.1	134,200
120	24.9	58.6	124,300
125	18.0	44.4	115,100



ft	°	ft	lb
24	84.3	153.4	993,000 **b**
26	83.5	153.1	931,900
28	82.7	152.8	877,600
30	81.9	152.5	829,100
32	81.1	152.1	785,600
34	80.3	151.7	746,200
36	79.4	151.3	710,500
38	78.6	150.8	669,400
40	77.8	150.3	617,700
45	75.8	149.0	517,300
50	73.7	147.5	444,400
55	71.6	145.7	389,000
60	69.5	143.8	345,600
65	67.3	141.6	310,600
70	65.1	139.2	281,800
75	62.9	136.6	257,700
80	60.6	133.7	237,200
85	58.2	130.5	219,200
90	55.8	127.0	200,600
95	53.3	123.2	184,100
100	50.7	119.0	169,600
105	48.0	114.4	156,600
110	45.2	109.4	144,900
115	42.2	103.8	134,300
120	39.1	97.6	124,700
125	35.7	90.6	115,900
130	31.9	82.6	107,800
135	27.7	73.2	100,300
140	22.7	61.6	93,300
145	16.1	45.7	86,600

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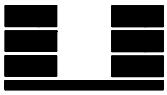

164.0 ft

ft	°	ft	lb
24	85.0	173.2	973,300
26	84.3	173.0	915,100
28	83.6	172.7	863,200
30	82.9	172.4	816,700
32	82.2	172.1	774,700
34	81.4	171.7	736,700
36	80.7	171.4	702,200
38	80.0	171.0	670,600
40	79.3	170.6	625,500
45	77.5	169.4	523,900
50	75.7	168.0	450,100
55	73.9	166.5	394,100
60	72.0	164.8	350,200
65	70.2	163.0	314,800
70	68.3	160.9	285,600
75	66.4	158.6	261,200
80	64.4	156.2	239,200
85	62.4	153.5	217,700
90	60.4	150.6	199,000
95	58.4	147.4	182,500
100	56.3	144.0	168,000
105	54.1	140.3	155,000
110	51.8	136.3	143,300
115	49.5	132.0	132,800
120	47.1	127.3	123,200
125	44.6	122.2	114,500
130	42.0	116.6	106,500
135	39.2	110.4	99,100
140	36.3	103.5	92,200
145	33.1	95.8	85,900
150	29.5	87.1	79,900
155	25.6	76.8	74,400
160	20.8	64.1	69,100

183.7 ft

ft	°	ft	lb
26	84.9	192.8	898,500
28	84.3	192.6	848,900
30	83.6	192.3	804,200
32	83.0	192.0	763,800
34	82.4	191.7	727,200
36	81.7	191.4	693,700
38	81.1	191.0	663,100
40	80.5	190.6	633,700
45	78.9	189.6	530,800
50	77.3	188.4	456,100
55	75.7	187.1	399,400
60	74.0	185.6	354,900
65	72.4	183.9	319,100
70	70.7	182.1	289,600
75	69.1	180.2	261,900
80	67.4	178.0	236,800
85	65.6	175.7	215,300
90	63.9	173.2	196,500
95	62.1	170.5	180,100
100	60.3	167.5	165,500
105	58.5	164.4	152,500
110	56.6	161.1	140,800
115	54.7	157.5	130,300
120	52.7	153.6	120,700
125	50.7	149.4	112,000
130	48.6	145.0	104,000
135	46.4	140.1	96,700
140	44.2	134.9	89,900
145	41.8	129.3	83,600
150	39.4	123.1	77,700
155	36.7	116.4	72,300
160	34.0	109.0	67,100
165	30.9	100.7	62,300
170	27.6	91.2	57,800
175	23.8	80.1	53,400
180	19.2	66.4	49,300

203.4 ft

ft	°	ft	lb
28	84.8	212.4	831,500
30	84.3	212.1	789,100
32	83.7	211.9	750,700
34	83.1	211.6	715,600
36	82.5	211.3	683,500
38	82.0	211.0	654,000
40	81.4	210.7	626,900
45	80.0	209.7	537,400
50	78.5	208.6	461,800
55	77.1	207.4	404,500
60	75.6	206.1	359,500
65	74.2	204.6	323,200
70	72.7	203.0	289,100
75	71.2	201.3	259,600
80	69.7	199.4	234,500
85	68.2	197.3	212,800
90	66.6	195.1	194,000
95	65.1	192.7	177,500
100	63.5	190.1	162,900
105	61.9	187.4	149,900
110	60.2	184.5	138,200
115	58.6	181.4	127,700
120	56.9	178.1	118,100
125	55.2	174.5	109,400
130	53.4	170.8	101,400
135	51.6	166.7	94,000
140	49.7	162.4	87,200
145	47.8	157.9	81,000
150	45.9	153.0	75,100
155	43.8	147.7	69,700
160	41.7	142.0	64,600
165	39.5	135.9	59,900
170	37.1	129.3	55,400
175	34.6	122.0	51,200
180	32.0	114.0	47,200
185	29.1	105.1	43,400
190	25.9	94.9	39,800
195	22.3	83.0	36,300
200	17.9	68.3	33,000

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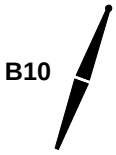

223.1 ft

ft	°	ft	lb
30	84.8	232.0	769,000
32	84.2	231.7	732,700
34	83.7	231.5	699,600
36	83.2	231.2	669,100
38	82.7	230.9	641,000
40	82.2	230.6	615,000
45	80.9	229.8	539,200
50	79.6	228.8	463,200
55	78.2	227.7	405,600
60	76.9	226.5	360,300
65	75.6	225.1	323,800
70	74.3	223.7	289,300
75	72.9	222.1	259,700
80	71.6	220.4	234,500
85	70.2	218.5	212,800
90	68.8	216.5	194,000
95	67.4	214.4	177,400
100	66.0	212.1	162,800
105	64.6	209.7	149,700
110	63.1	207.1	138,000
115	61.7	204.4	127,500
120	60.2	201.5	117,900
125	58.7	198.4	109,100
130	57.1	195.1	101,200
135	55.6	191.6	93,800
140	54.0	187.9	87,000
145	52.3	184.0	80,800
150	50.7	179.8	75,000
155	49.0	175.4	69,500
160	47.2	170.7	64,500
165	45.4	165.8	59,700
170	43.5	160.5	55,300
175	41.6	154.8	51,100
180	39.5	148.7	47,200
185	37.4	142.1	43,400
190	35.2	135.0	39,900
195	32.8	127.2	36,600
200	30.3	118.7	33,400
205	27.5	109.2	30,300
210	24.5	98.4	27,400
215	21.0	85.7	24,500
220	16.7	70.0	21,800

242.8 ft

ft	°	ft	lb
32	84.7	251.5	716,300
34	84.2	251.3	684,900
36	83.8	251.1	656,100
38	83.3	250.8	629,400
40	82.8	250.5	604,600
45	81.6	249.7	545,500
50	80.4	248.8	468,700
55	79.2	247.8	410,400
60	78.0	246.7	364,600
65	76.8	245.5	322,200
70	75.6	244.2	286,700
75	74.3	242.7	257,000
80	73.1	241.2	231,700
85	71.9	239.5	210,000
90	70.6	237.7	191,100
95	69.3	235.8	174,500
100	68.1	233.7	159,800
105	66.8	231.5	146,700
110	65.5	229.2	135,000
115	64.2	226.7	124,400
120	62.8	224.1	114,800
125	61.5	221.3	106,000
130	60.1	218.4	98,000
135	58.7	215.3	90,700
140	57.3	212.1	83,900
145	55.9	208.6	77,600
150	54.4	205.0	71,800
155	52.9	201.2	66,400
160	51.4	197.1	61,300
165	49.9	192.9	56,600
170	48.3	188.4	52,100
175	46.7	183.6	48,000
180	45.0	178.6	44,000
185	43.3	173.2	40,300
190	41.5	167.5	36,800
195	39.6	161.4	33,500
200	37.7	154.9	30,300
205	35.6	147.9	27,300
210	33.5	140.4	24,500
215	31.2	132.1	21,700
220	28.8	123.1	19,100

262.5 ft

ft	°	ft	lb
34	84.7	271.1	673,600
36	84.2	270.9	645,900
38	83.8	270.6	620,200
40	83.4	270.4	596,400
45	82.2	269.7	543,500
50	81.1	268.8	472,700
55	80.0	267.9	414,000
60	78.9	266.9	364,400
65	77.8	265.8	321,100
70	76.7	264.6	285,600
75	75.5	263.2	255,800
80	74.4	261.8	230,400
85	73.3	260.2	208,600
90	72.1	258.6	189,700
95	71.0	256.8	173,000
100	69.8	254.9	158,300
105	68.6	252.9	145,200
110	67.4	250.8	133,400
115	66.2	248.6	122,800
120	65.0	246.2	113,200
125	63.8	243.7	104,400
130	62.6	241.1	96,400
135	61.3	238.3	89,000
140	60.1	235.4	82,300
145	58.8	232.3	76,000
150	57.5	229.0	70,100
155	56.2	225.7	64,700
160	54.8	222.1	59,700
165	53.5	218.3	54,900
170	52.1	214.4	50,500
175	50.7	210.2	46,300
180	49.2	205.9	42,400
185	47.7	201.3	38,700
190	46.2	196.5	35,200
195	44.6	191.4	31,900
200	43.0	186.0	28,800
205	41.4	180.3	25,800
210	39.7	174.2	22,900
215	37.9	167.7	20,200
220	36.0	160.8	17,600

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