


# Liftcrane Boom Capacities

Boom No. B10:680  
200 000 kg 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 13 600 kg or 27 200 kg with two part whip line. When Drum 1 or Drum 2 is used, capacity with single part whip line is 22 100 kg, or 33 300 kg 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 5 440 kg minimum weight suspended beneath boom point and (c) require 10 880 kg 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 11 125 mm crawlers, 1 524 mm or 2 032 mm treads, 11 m live mast, 30 part boom hoist reeving, boom support straps, and 200 000 kg VPC.

Consult chart **No. 9490-AM** when Jib No. 148 is attached.

<b>Luffing Jib Backstay Deduct</b>	
Boom Length (m)	Deduct (kg)
32,0	1 600
38,0	2 300
44,0	2 800
50,0	3 500
56,0	3 900
62,0	4 600
68,0	4 600
74,0	4 600

Deduct the appropriate value from capacities when luffing jib backstays are stored on boom.

<b>Deduct From Capacities When Jib No. 148 Is Attached</b>	
Jib Length (m)	Deduct (kg)
12,0	8 600
18,0	10 700
24,0	13 400
30,0	16 100
36,0	19 300
42,0	21 900

Weight of jib and 2 950 kg 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 (m)	Block Weight (kg)
32,0	21 000
38,0	21 000
44,0	21 000
50,0	21 000
56,0	10 200
62,0	10 200
68,0	#
74,0	Raising Not Permitted
80,0	

**Table 2: With Luffing Jib Backstays**

Over End of Blocked Crawlers	
Boom Length (m)	Block Weight (kg)
32,0	21 000
38,0	21 000
44,0	21 000
50,0	21 000
56,0	10 200
62,0	10 200
68,0	#
74,0	#
80,0	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 (m)	Block Weight (kg)
32,0	21 000
38,0	21 000
44,0	21 000
50,0	21 000
56,0	21 000
62,0	10 200
68,0	7 300
74,0	#
80,0	Raising Not Permitted


**Table 4: Without Luffing Jib Backstays**

Over End of Blocked Crawlers	
Boom Length (m)	Block Weight (kg)
32,0	21 000
38,0	21 000
44,0	21 000
50,0	21 000
56,0	21 000
62,0	10 200
68,0	7 300
74,0	7 300
80,0	#

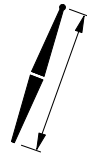
**Warning:** Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. Crane tipping or structural damage can occur.


## Explanation of Symbols


**B10**  Boom No. B10:680

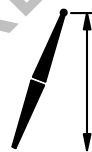
 VPC (Variable Position Counterweight)


 360 Degree Rating

 Boom Length

 Operating Radius  
(see page 1)

 Boom Angle  
(see page 1)

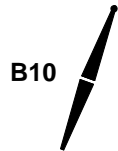
 Boom Point Elevation  
(see page 1)

 Lifting Capacities  
(see page 1)

REFERENCE ONLY!

# MLC650 S-1

ASME B30.5



**32,0 m**

m	°	m	kg
5,8	84,9	34,9	562 200 c
6,0	84,5	34,8	547 000 c
7,0	82,7	34,7	483 200 c
8,0	80,9	34,5	432 600 b
9,0	79,0	34,3	391 400 b
10,0	77,2	34,0	357 200
11,0	75,3	33,7	322 600
12,0	73,4	33,4	280 600
14,0	69,6	32,6	222 300
16,0	65,7	31,7	183 600
18,0	61,6	30,6	156 200
20,0	57,3	29,3	135 700
22,0	52,8	27,8	119 700
24,0	48,0	25,9	107 000
26,0	42,7	23,8	96 600
28,0	36,8	21,2	87 600
30,0	29,8	17,8	78 600
32,0	20,5	13,0	70 400

**38,0 m**

m	°	m	kg
6,7	84,3	40,8	491 900 c
7,0	83,9	40,8	476 000 c
8,0	82,3	40,6	426 700 b
9,0	80,8	40,4	386 800
10,0	79,3	40,2	353 600
11,0	77,7	40,0	325 300
12,0	76,1	39,7	284 700
14,0	73,0	39,0	225 500
16,0	69,8	38,3	186 400
18,0	66,5	37,4	158 600
20,0	63,1	36,4	137 900
22,0	59,6	35,2	121 700
24,0	55,9	33,8	108 800
26,0	52,1	32,2	98 200
28,0	48,0	30,4	88 300
30,0	43,7	28,3	79 000
32,0	38,9	25,9	71 100
34,0	33,5	22,9	64 100
36,0	27,1	19,2	58 000
38,0	18,6	13,9	52 500

**44,0 m**

m	°	m	kg
7,3	84,3	46,8	450 400 b
8,0	83,4	46,7	419 500
9,0	82,1	46,5	381 000
10,0	80,7	46,3	348 900
11,0	79,4	46,1	321 500
12,0	78,1	45,9	288 100
14,0	75,4	45,3	227 500
16,0	72,7	44,7	188 000
18,0	69,9	44,0	160 000
20,0	67,0	43,1	139 100
22,0	64,1	42,1	122 800
24,0	61,2	41,0	109 700
26,0	58,1	39,7	98 900
28,0	54,9	38,3	88 100
30,0	51,6	36,7	78 900
32,0	48,0	34,9	71 000
34,0	44,3	32,9	64 200
36,0	40,3	30,5	58 100
38,0	35,9	27,8	52 800
40,0	30,9	24,5	48 000
42,0	25,0	20,5	43 700
44,0	17,1	14,7	39 600

REFER TO THE MANITOWOC WEBSITE FOR THE COMPLETE CATALOGUE

# MLC650 S-1

ASME B30.5



**50,0 m**

m	°	m	kg
7,3	85,0	52,8	441 500
8,0	84,2	52,7	412 000
9,0	83,0	52,6	375 200
10,0	81,9	52,4	344 200
11,0	80,7	52,2	317 800
12,0	79,5	52,0	290 800
14,0	77,2	51,5	230 400
16,0	74,8	51,0	190 500
18,0	72,4	50,3	162 200
20,0	69,9	49,6	141 000
22,0	67,5	48,7	124 400
24,0	64,9	47,8	110 900
26,0	62,3	46,7	98 200
28,0	59,7	45,5	87 300
30,0	56,9	44,2	78 200
32,0	54,1	42,8	70 300
34,0	51,1	41,1	63 500
36,0	48,0	39,3	57 500
38,0	44,8	37,3	52 100
40,0	41,3	35,1	47 400
42,0	37,6	32,5	43 100
44,0	33,5	29,5	39 300
46,0	28,8	26,0	35 800
48,0	23,3	21,6	32 500

**56,0 m**

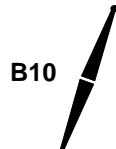
m	°	m	kg
7,9	84,9	58,8	407 500
8,0	84,8	58,7	404 700
9,0	83,8	58,6	369 300
10,0	82,7	58,5	339 500
11,0	81,7	58,3	314 000
12,0	80,7	58,1	291 600
14,0	78,6	57,7	233 500
16,0	76,5	57,2	193 000
18,0	74,3	56,6	164 400
20,0	72,2	56,0	142 900
22,0	70,0	55,2	125 700
24,0	67,8	54,4	110 100
26,0	65,5	53,5	97 100
28,0	63,2	52,5	86 200
30,0	60,9	51,3	77 000
32,0	58,5	50,1	69 200
34,0	56,0	48,7	62 300
36,0	53,5	47,3	56 300
38,0	50,8	45,6	51 000
40,0	48,1	43,8	46 300
42,0	45,2	41,8	42 100
44,0	42,1	39,6	38 200
46,0	38,9	37,2	34 800
48,0	35,4	34,4	31 600
50,0	31,5	31,2	28 600
52,0	27,1	27,4	25 900
54,0	21,9	22,7	23 400

**62,0 m**

m	°	m	kg
8,5	84,8	64,7	377 100
9,0	84,4	64,7	362 500
10,0	83,5	64,5	333 800
11,0	82,5	64,4	309 400
12,0	81,6	64,2	288 100
14,0	79,7	63,9	236 900
16,0	77,8	63,4	195 500
18,0	75,9	62,9	166 400
20,0	74,0	62,3	144 600
22,0	72,0	61,6	125 000
24,0	70,1	60,9	109 000
26,0	68,1	60,1	96 000
28,0	66,0	59,2	85 100
30,0	64,0	58,2	75 900
32,0	61,9	57,1	68 000
34,0	59,7	55,9	61 100
36,0	57,5	54,7	55 100
38,0	55,3	53,3	49 800
40,0	53,0	51,7	45 100
42,0	50,6	50,1	40 900
44,0	48,1	48,3	37 100
46,0	45,5	46,3	33 600
48,0	42,8	44,2	30 400
50,0	39,9	41,8	27 500
52,0	36,8	39,1	24 900
54,0	33,5	36,2	22 400
56,0	29,9	32,7	20 100
58,0	25,7	28,7	17 900
60,0	20,8	23,8	15 900

# MLC650 S-1

ASME B30.5



**68,0 m**

m	°	m	kg
9,1	84,8	70,7	348 800
10,0	84,0	70,6	326 100
11,0	83,2	70,5	302 900
12,0	82,3	70,3	282 500
14,0	80,6	70,0	238 100
16,0	78,9	69,6	196 000
18,0	77,2	69,1	166 900
20,0	75,4	68,6	144 900
22,0	73,7	68,0	125 100
24,0	71,9	67,3	109 000
26,0	70,1	66,6	96 000
28,0	68,3	65,8	85 000
30,0	66,4	64,9	75 800
32,0	64,6	63,9	67 900
34,0	62,7	62,9	61 000
36,0	60,7	61,7	55 000
38,0	58,8	60,5	49 700
40,0	56,7	59,2	45 000
42,0	54,7	57,8	40 800
44,0	52,5	56,2	37 000
46,0	50,4	54,6	33 500
48,0	48,1	52,8	30 400
50,0	45,7	50,8	27 500
52,0	43,3	48,7	24 800
54,0	40,7	46,4	22 400
56,0	38,0	43,8	20 100
58,0	35,1	41,0	18 000
60,0	31,9	37,9	16 000
62,0	28,4	34,2	14 200
64,0	24,5	30,0	12 400
66,0	19,8	24,8	10 700

**74,0 m**

m	°	m	kg
9,8	84,7	76,7	324 900
10,0	84,5	76,6	319 100
11,0	83,7	76,5	297 000
12,0	83,0	76,4	277 700
14,0	81,4	76,1	241 500
16,0	79,8	75,7	198 300
18,0	78,2	75,3	168 800
20,0	76,6	74,8	144 000
22,0	75,0	74,2	123 800
24,0	73,4	73,6	107 800
26,0	71,8	73,0	94 700
28,0	70,1	72,2	83 700
30,0	68,5	71,4	74 500
32,0	66,8	70,6	66 500
34,0	65,1	69,6	59 700
36,0	63,3	68,6	53 600
38,0	61,6	67,5	48 300
40,0	59,8	66,3	43 600
42,0	57,9	65,1	39 300
44,0	56,1	63,7	35 500
46,0	54,2	62,3	32 100
48,0	52,2	60,7	28 900
50,0	50,2	59,1	26 000
52,0	48,1	57,3	23 400
54,0	45,9	55,3	20 900
56,0	43,7	53,2	18 700
58,0	41,4	51,0	16 600
60,0	38,9	48,5	14 600
62,0	36,3	45,8	12 800
64,0	33,5	42,8	11 100
66,0	30,5	39,5	9 500

**80,0 m**

m	°	m	kg
10,4	84,7	82,6	305 500
11,0	84,2	82,6	292 400
12,0	83,5	82,4	273 800
14,0	82,0	82,2	241 100
16,0	80,6	81,8	200 400
18,0	79,1	81,4	169 200
20,0	77,7	81,0	143 500
22,0	76,2	80,5	123 300
24,0	74,7	79,9	107 200
26,0	73,2	79,3	94 000
28,0	71,7	78,6	83 100
30,0	70,2	77,9	73 800
32,0	68,6	77,1	65 800
34,0	67,1	76,3	59 000
36,0	65,5	75,3	52 900
38,0	63,9	74,3	47 600
40,0	62,3	73,3	42 900
42,0	60,6	72,1	38 600
44,0	59,0	70,9	34 800
46,0	57,2	69,6	31 300
48,0	55,5	68,3	28 200
50,0	53,7	66,8	25 300
52,0	51,9	65,2	22 600
54,0	50,0	63,5	20 200
56,0	48,1	61,7	18 000
58,0	46,1	59,8	15 900
60,0	44,1	57,7	13 900
62,0	41,9	55,5	12 100
64,0	39,7	53,1	10 400
66,0	37,3	50,5	8 800