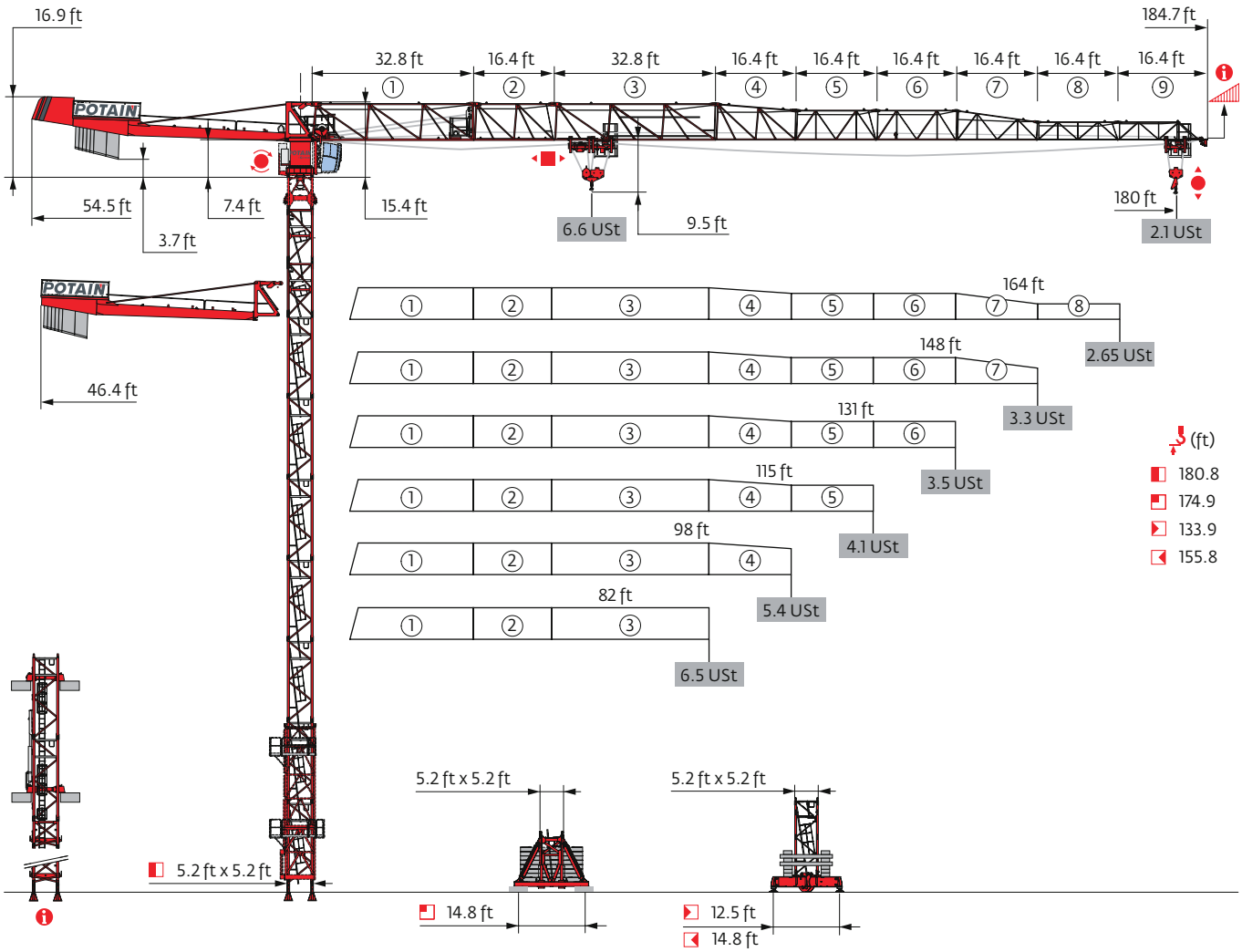
POTAIN®
by Manitowoc

MDT 139



Potain Plus | Power Control | Top Site | Top Tracing 3 | TCL

ASCE 7-10

Values have been rounded.

Mast - Reactions

5.2 ft City - P 41A								
(ft)		82	98	115	131	148	164	180
(ft)		179.5	179.5	179.5	179.5	168.6	168.6	168.6
/P+ (ft)		179.5	179.5	179.5	179.5	168.6	168.6	168.6
10.9 ft		0	0	0	0	2	2	2
16.4 ft		11	11	11	11	9	9	9
F2 (USt)	●	125	125	124	126	123	122	123
	■	189	189	195	196	176	175	181
F3 (USt)	●	97	96	95	96	93	91	92
	■	165	164	170	169	149	147	153

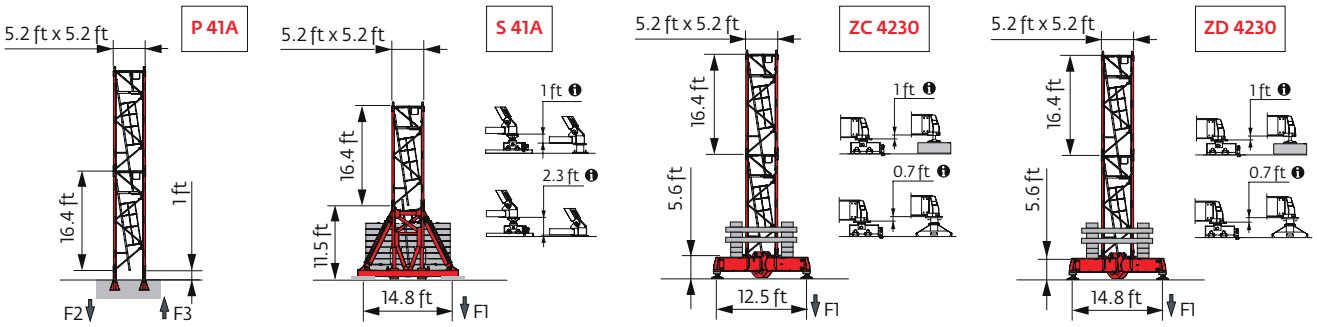
Motorized accesses of CabLIFT and TCL types:
Adapted mast compositions, base ballast and reactions.

5.2 ft City - ZC 4230 -								
(ft)		82	98	115	131	148	164	180
(ft)		128.6	133.9	133.9	133.9	128.6	123	123
/P+ (ft)		128.6	133.9	133.9	133.9	128.6	123	123
10.9 ft		1	0	0	0	1	2	2
16.4 ft		7	8	8	8	7	6	6
F1 (USt)	●	68	69	69	70	70	68	68
	■	65	67	71	71	67	64	67

5.2 ft City - ZD 4230 -								
(ft)		82	98	115	131	148	164	180
(ft)		155.8	155.8	155.8	155.8	150.3	150.3	150.3
/P+ (ft)		155.8	155.8	155.8	155.8	150.3	150.3	150.3
10.9 ft		2	2	2	2	0	0	0
16.4 ft		8	8	8	8	9	9	9
F1 (USt)	●	69	69	69	69	70	69	69
	■	81	80	84	85	75	74	78

5.2 ft - P 41A								
(ft)		82	98	115	131	148	164	180
(ft)		180.8	180.8	175.2	175.2	169.6	164.4	169.6
/P+ (ft)		180.8	180.8	175.2	175.2	169.6	164.4	169.6
6.6 ft		1	1	1	1	1	1	1
10.9 ft		1	1	2	2	0	1	0
16.4 ft		10	10	9	9	10	9	10
F2 (USt)	●	131	131	126	128	128	123	127
	■	209	208	205	206	188	178	194
F3 (USt)	●	99	98	94	94	94	89	93
	■	180	179	176	175	158	147	162

5.2 ft - S 41A -								
(ft)		82	98	115	131	148	164	180
(ft)		174.9	174.9	169.3	174.9	174.9	169.3	174.9
/P+ (ft)		174.9	174.9	169.3	174.9	174.9	169.3	174.9
6.6 ft		1	1	1	1	1	1	1
10.9 ft		1	1	2	1	1	2	1
16.4 ft		9	9	8	9	9	8	9
F1 (USt)	●	84	84	81	85	87	82	87
	■	111	111	109	115	113	106	117



Note: When "ASCE" is noted in this data sheet it is referring to 115 mph Wind Zone, Exposure B, Design Wind Speed = 98 mph.
See back cover for design wind speed calculations.

Anchorages

Base ballast

(USt) / 5.2 ft City - ZC 4230 -

(ft)	82	98	115	131	148	164	180
133.9		88.2	88.2	88.2			
128.6	88.2	88.2	82.7	82.7	88.2		
123	82.7	82.7	77.2	77.2	82.7	88.2	88.2
106.6	71.7	71.7	66.1	66.1	71.7	71.7	71.7
90.2	71.7	71.7	66.1	66.1	66.1	66.1	66.1
73.8	71.7	71.7	66.1	66.1	66.1	66.1	66.1
57.4	71.7	71.7	66.1	66.1	66.1	66.1	66.1
41	71.7	71.7	66.1	66.1	66.1	66.1	66.1

(USt) / 5.2 ft City - ZD 4230 -

(ft)	82	98	115	131	148	164	180
155.8	88.2	88.2	88.2	88.2			
150.3	82.7	82.7	77.2	77.2	88.2	88.2	88.2
133.9	66.1	66.1	66.1	66.1	71.7	71.7	71.7
117.5	55.1	55.1	49.6	55.1	60.6	60.6	60.6
101.1	55.1	49.6	49.6	44.1	44.1	44.1	44.1
84.7	55.1	49.6	49.6	44.1	44.1	44.1	44.1
68.2	55.1	49.6	49.6	44.1	44.1	44.1	44.1
51.8	55.1	49.6	49.6	44.1	44.1	44.1	44.1
35.4	55.1	49.6	49.6	44.1	44.1	44.1	44.1

(USt) / 5.2 ft - S 41A -

(ft)	82	98	115	131	148	164	180
174.9	125.7	125.7		125.7	125.7		125.7
169.3	119.1	112.4	119.1	119.1	112.4	112.4	119.1
152.9	86	86	92.6	92.6	92.6	92.6	92.6
136.5	72.8	72.8	66.1	72.8	79.4	79.4	79.4
120.1	59.5	59.5	52.9	59.5	59.5	66.1	59.5
103.7	46.3	46.3	46.3	46.3	46.3	52.9	46.3
87.3	46.3	46.3	46.3	46.3	46.3	46.3	46.3
70.9	46.3	46.3	46.3	46.3	46.3	46.3	46.3
54.5	46.3	46.3	46.3	46.3	46.3	46.3	46.3
38.1	46.3	46.3	46.3	46.3	46.3	46.3	46.3

Load curves

(ft)			56	66	72	82	89	98	105	115	121	131	138	148	154	164	171	180	ft
	6.6 USt	3.3 USt																	
180	9 → 67	116 - 126	6.6	6.6	6	5.2	4.8	4.2	3.8	3.4	3.3	3.1	2.95	2.7	2.5	2.3	2.15	1.95	USt
	9 → 68	118 - 130	6.6	6.6	6.2	5.3	4.8	4.2	3.9	3.4	3.3	3.3	3.1	2.8	2.65	2.45	2.3	2.1	USt P+
164	9 → 73	123 - 135	6.6	6.6	6.6	5.7	5.1	4.5	4.1	3.6	3.4	3.3	3.2	2.95	2.8	2.55	USt		
	9 → 74	127 - 138	6.6	6.6	6.6	5.8	5.3	4.6	4.2	3.8	3.5	3.3	3.3	3.1	2.9	2.65	USt P+		
148	9 → 71	126 - 140	6.6	6.6	6.4	5.6	5.1	4.5	4.2	3.7	3.5	3.3	3.3	3.1	USt				
	9 → 77	135 - 148	6.6	6.6	6.6	6.1	5.6	5	4.6	4.1	3.8	3.4	3.3	3.3	USt P+				
131	9 → 68	122 - 131	6.6	6.6	6.2	5.4	4.9	4.3	4	3.6	3.3	3.3	USt						
	9 → 74		6.6	6.6	6.6	5.9	5.4	4.8	4.4	3.9	3.7	3.3	USt P+						
115	9 → 68		6.6	6.6	6.2	5.4	4.9	4.3	4	3.6	USt								
	9 → 74		6.6	6.6	6.6	5.9	5.4	4.8	4.4	3.9	USt P+								
98	9 → 73		6.6	6.6	6.6	5.8	5.3	4.7	USt										
	9 → 80		6.6	6.6	6.6	6.4	5.9	5.2	USt P+										
82	9 → 72		6.6	6.6	6.6	5.7	USt												
	9 → 79		6.6	6.6	6.6	6.3	USt P+												

= - 0.42 USt max.

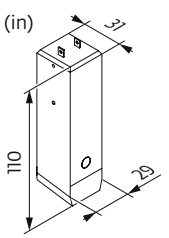
(ft)			56	66	72	82	89	98	105	115	121	131	138	148	154	164	171	180	ft
	6.6 USt	3.3 USt																	
180	7 → 69	121 - 121	6.6	6.6	6.2	5.4	5	4.4	4	3.6	3.3	3	2.8	2.55	2.4	2.15	2.05	1.85	USt
	7 → 70	124 - 125	6.6	6.6	6.4	5.5	5	4.4	4.1	3.7	3.4	3.1	2.95	2.7	2.5	2.3	2.2	1.95	USt P+
164	7 → 75	128 - 131	6.6	6.6	6.6	5.9	5.3	4.7	4.3	3.8	3.6	3.3	3.1	2.8	2.65	2.45	USt		
	7 → 76	133 - 133	6.6	6.6	6.6	6	5.5	4.8	4.4	4	3.7	3.4	3.2	2.95	2.75	2.55	USt P+		
148	7 → 73	132 - 135	6.6	6.6	6.6	5.8	5.3	4.7	4.4	3.9	3.7	3.3	3.2	2.95	USt				
	7 → 79	141 - 142	6.6	6.6	6.6	6.4	5.8	5.2	4.8	4.3	4	3.6	3.4	3.2	USt P+				
131	7 → 70	128 - 131	6.6	6.6	6.4	5.6	5.1	4.5	4.2	3.8	3.5	3.3	USt						
	7 → 76		6.6	6.6	6.6	6.1	5.6	5	4.6	4.1	3.9	3.5	USt P+						
115	7 → 70		6.6	6.6	6.4	5.6	5.1	4.5	4.2	3.8	USt								
	7 → 76		6.6	6.6	6.6	6.1	5.6	5	4.6	4.1	USt P+								
98	7 → 75		6.6	6.6	6.6	6	5.5	4.9	USt										
	7 → 82		6.6	6.6	6.6	6.6	6.1	5.4	USt P+										
82	7 → 74		6.6	6.6	6.6	5.9	USt												
	7 → 81		6.6	6.6	6.6	6.5	USt P+												

= - 0.08 USt max.

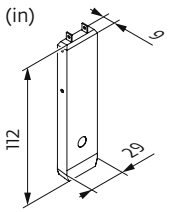
Jib weight & counter-jib ballast

	(lb) - 25 LVF (+/- 5%)					
				7,937 lb	2,425 lb	(lb)
180 ft	16,925	16,616	17,262	2	5	27,999
164 ft	16,495	16,186	16,832	2	5	27,999
148 ft	15,988	15,679	16,325	2	4	25,574
131 ft	15,338	15,029	15,675	2	3	23,149
115 ft	14,588	14,279	14,925	2	2	20,723
98 ft	13,986	13,678	14,323	2	2	20,723
82 ft	13,186	12,877	13,523	2	1	18,298

CAU - 7,937 lb



CAV - 2,425 lb

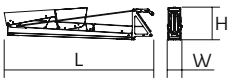
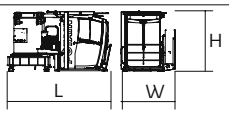
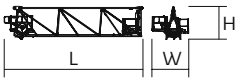
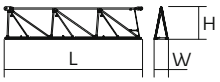
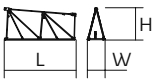
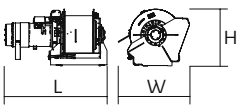
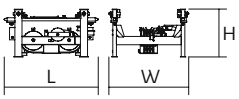
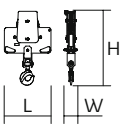
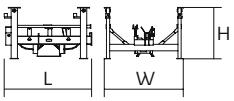
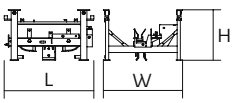
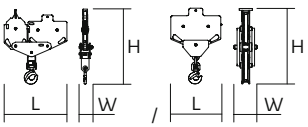


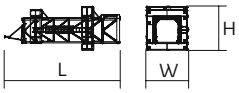
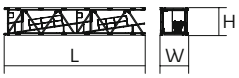
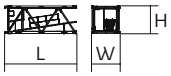
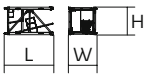
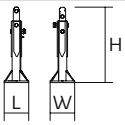
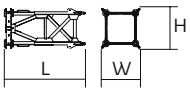
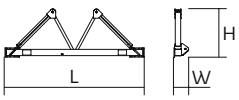
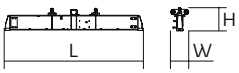
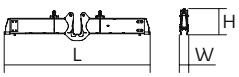
Dimensions and weight

Slewing crane part: 180 ft - - 25 LVF

x 3

x 3

Slewing crane part			L (ft)	W (ft)	H (ft)	lb (+/- 5%)
Counter-jib			39	3.9	8.2	10,406
Towerhead + cab		Ultra View	14.2	7.4	8	11,890
Jib section		① 25 LVF 6 DVF	35.9	9.6	8.5	7,110
Jib section		② ⑤ ⑥ ⑧	17.2 17 17 16.9	3.4 3.4 3.4 3.4	7.7 6.3 6.2 3.9	1,620 886 756 503
Jib section		③	33.4	3.4	7.7	2,482
Jib section		④ ⑦	17 16.9	3.4 3.4	7.6 6.2	990 646
Jib section		⑨	17	3.4	3.8	417
Hoisting winch (+ rope)		25 LVF 33 LVF 50 LVF	4.3 4.5 5	2.3 3 3.1	2.3 2.9 3	1,687 2,127 3,075
Trolley		6.6 USt	5.2	4.4	2.9	617
Pulley block		6.6 USt	3	0.9	4.3	628
Trolley		6.6 USt	4.6	4.1	3.1	617
Trolley		6.6 USt 3.3 USt	4.7 5	4.1 4.3	3.1 3.1	617 518
Pulley block		6.6 USt 3.3 USt	4.1 2.6	0.9 0.7	5 4.2	551 287

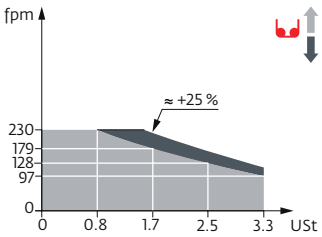
Crane tower			L (ft)	W (ft)	H (ft)	lb (+/- 5%)
Telescopic cage		⍁5.2 ft	36.8	13.1	11.7	14,220
K40/K40		⍁5.2 ft	7.3	6.9	6.8	3,208
K 447B K 447E KM 447E KM 449E		⍁5.2 ft	33.5 33.5 33.5 33.5	5.5 5.3 5.3 5.3	5.3 5.3 5.3 5.3	7,606 7,474 7,088 8,448
K 447A KMT 447A K 449A KMT 449A		⍁5.2 ft	17.1 17.1 17.1 17.1	5.5 5.5 5.5 5.5	5.3 5.3 5.3 5.3	4,079 3,847 4,916 4,696
K 447C		⍁5.2 ft	11.3	5.5	5.3	2,998
Fixing angles		P 41A	1.2	1.2	3.7	293
Basic mast unit		S 41A	11.9	6.4	6.8	6,537
Struts		S 41A	10.4	0.9	0.8	489
Half-bearer		S 41A	16.7	2	5.8	2,524
Cross girder		ZC 4230 ZD 4230	18.5 21.8	2.7 2.7	3.4 3.4	3,505 4,035
Cross girder		ZC 4230 ZD 4230	18.5 21.8	1.5 1.5	4.4 4.4	4,178 4,707

Mechanisms

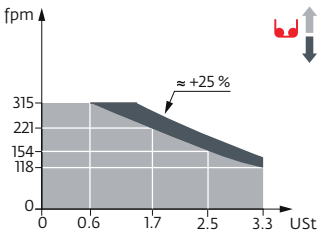
480 V - 60 Hz											hp	kW	
	25 LVF 15 Optima	fpm	97	128	179	230	49	66	92	115	25	18	912 ft
		USt	3.3	2.5	1.7	0.8	6.6	5	3.3	1.8			
	33 LVF 15 Optima	fpm	118	154	221	315	59	79	116	157	33	22	1,001 ft
		USt	3.3	2.5	1.7	0.6	6.6	5	3.3	1.4			
	50 LVF 15 Optima	fpm	203	262	374	535	105	138	205	267	50	37	1,549 ft
		USt	3.3	2.5	1.7	0.8	6.6	5	3.3	1.9			
	6 DVF 4 Optima	fpm	0 → 262 (6.6 USt) 0 → 328 (2.2 USt)								5.5	4	
	RVF 152 Optima+	rpm	0 → 0.8								2 x 5.5	2 x 4	

IEC 60204-32	kVA
480 V (+6% -10%) 60 Hz	25 LVF: 34 → 24 kVA 33 LVF: 41 → 28 kVA 50 LVF: 54 → 34 kVA

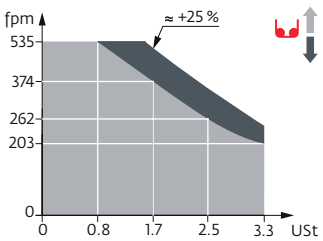
25 LVF 15 Optima



33 LVF 15 Optima



50 LVF 15 Optima



These mast combinations meet the EN 14439 and ASME B30.3-2012 specifications for "out of service" wind conditions, provided the illustrated wind speed matches required design wind for the location of the tower crane. The "out of service" design wind speed was determined in accordance with ASCE 7-10, Figure 26.5-A. The wind velocity, used for this configuration was 98 mph (158 kph), which represents a nominal design 3-second wind gust at 33 ft (10 m) above ground for Exposure B category A. Factor of 0.85 was applied to the 50-year ultimate design wind speed of 115 mph (185 kph), per ASCE 37-02, with the assumption that this crane is considered a temporary structure used during a construction period of 2 years or less.

- Jib elevation
- Standard equipment
- Options
- Potain Plus function: Plus load curves
- Hook heights with Plus load curves
- Reactions in service
- Reactions out of service
- Total ballast weight
- Jib weight
- Lorry 44 ft
- Container High Cube 40 ft, and/or Flat Rack 20 ft
- Trolleying
- Slewing
- Hoisting
- Travelling
- Required power
- Power Control Function: winch speeds adapted to the available power
- Consult us

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