

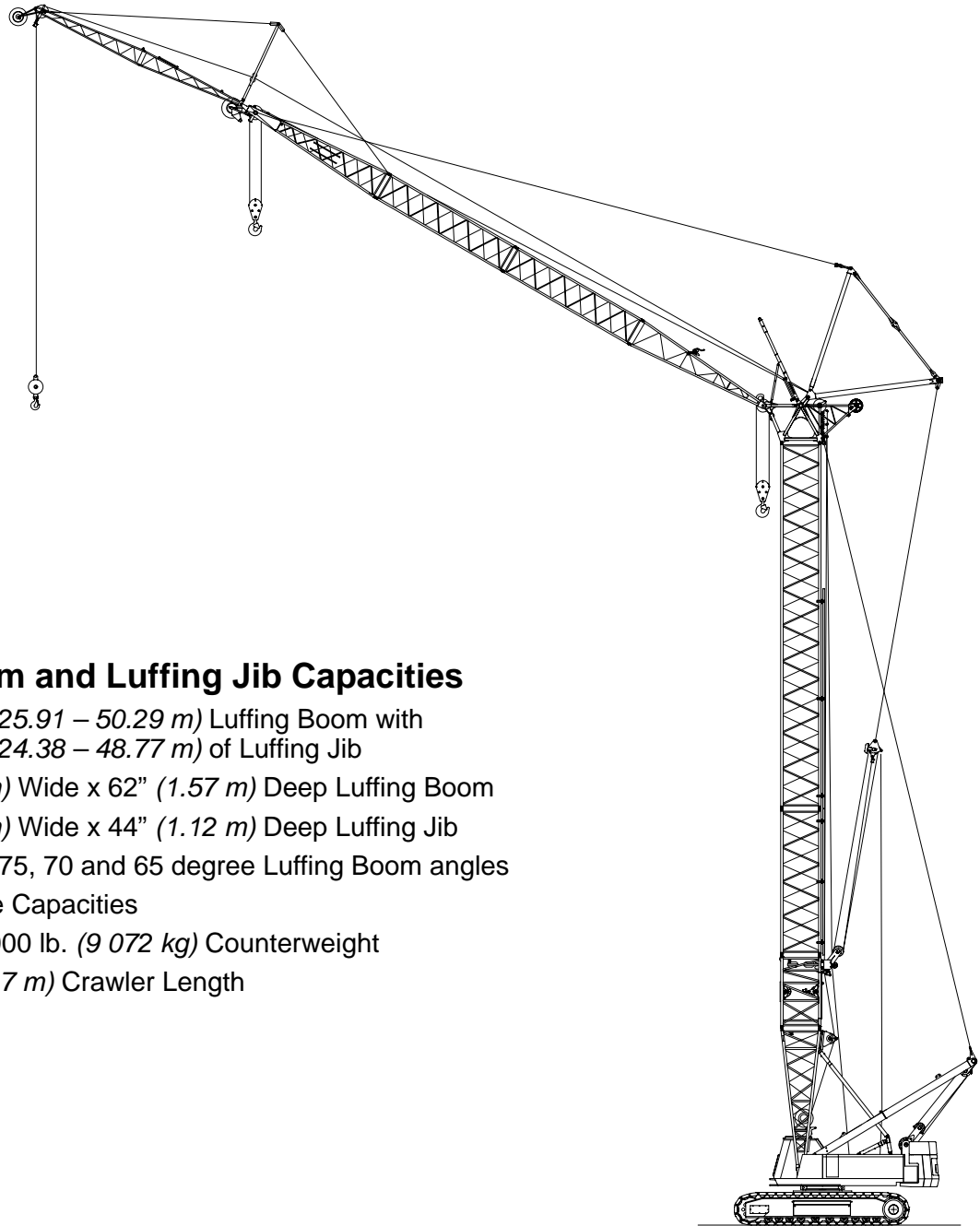
Lifting Capacities

Lattice Boom Crawler Crane with Luffing Attachment

LS-238H

27-ton (24.50 metric ton)

HYLAB Series



Luffing Boom and Luffing Jib Capacities

- 85' – 165' (25.91 – 50.29 m) Luffing Boom with 80' – 160' (24.38 – 48.77 m) of Luffing Jib
- 70" (1.78 m) Wide x 62" (1.57 m) Deep Luffing Boom
- 54" (1.37 m) Wide x 44" (1.12 m) Deep Luffing Jib
- 90, 85, 80, 75, 70 and 65 degree Luffing Boom angles
- 360 Degree Capacities
- ABC + 20,000 lb. (9 072 kg) Counterweight
- 23' 10" (7.27 m) Crawler Length



WARNING

READ AND UNDERSTAND THE OPERATOR'S AND SAFETY MANUAL AND THE FOLLOWING INSTRUCTIONS AND CHART VALUES BEFORE OPERATING THE CRANE. OPERATION WHICH DOES NOT FOLLOW THESE INSTRUCTIONS MAY RESULT IN AN ACCIDENT.

OPERATING INSTRUCTIONS

GENERAL:

1. Rated lifting capacities in kips (1,000 pounds) as shown on lift charts pertain to this crane as originally manufactured and normally equipped. Modifications to the crane or use of optional equipment other than that specified can result in a reduction of capacity.
2. Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this crane must be in compliance with the information in the Operator's, Parts, and Safety Manuals supplied with this crane. If these manuals are missing, order replacements through the distributor.
3. The operator and other personnel associated with this crane shall read and fully understand the latest applicable American National Standards Institute (ANSI) safety standards for cranes.
4. All capacities listed in this book are in compliance with ASME/ANSI B30.5c-1994, SAE J987-April 1994, and SAE J765-October 1990.

SET UP:

1. For all operating conditions, the crane must be leveled on a firm supporting surface that will adequately support the loadings without settling or collapsing.

⚠ WARNING

For over end capacities and lift off of combinations with luffing boom lengths longer than 125', the idlers/sprockets must be blocked with 5/8" steel plate.

2. Counterweights: All luffing attachment combinations require "ABC" (69,000 lb) upper counterweight and "20K" (20,000 lb) lower counterweight.
3. Refer to the Operator's Manual for instructions pertaining to assembly and raising and lowering of the attachment.
4. The fixed jib has only one length (30 ft) and only one offset with respect to the luffing jib (5 degrees).

LUFFING ATTACHMENT OPERATION:

1. Capacities shown are in kips (1,000 pounds) and are not more than 75% of the tipping loads with the crane standing level on a firm supporting surface. A deduction must be made from these capacities for weight of hook block, hook ball, sling, grapple, load weighing device, etc. Deduct 1.5 pounds for every foot of extra wire rope hoist line reeving. When lifting from the luffing jib with the fixed jib installed, reduce capacities by the values shown on the Capacity Deductions For Auxiliary Load Handling Equipment. See Operator's Manual for all limitations when raising or lowering the attachment.
2. Do not suspend more than one load at a time.
3. The crane capacities marked with an asterisk (*) are based on structural strength. The crane capacities in the non-asterisked areas are based on stability ratings.
4. For recommended reeving, parts of line, wire rope type, and wire rope inspection, see Operator's Manual and Parts Manual.
5. Load ratings in this Crane Rating Manual are based on freely suspended loads and make no allowances for such factors as the effect of the wind on load, ground conditions, and operating speeds. The operator shall therefore reduce load ratings in order to take these conditions into account. Refer to the Wind Speed Restrictions and Job Site Travel Restrictions for safe operation, travel, and storage of the attachment.
6. The 26 ft luffing boom live mast must be used for all capacities shown in this Crane Rating Manual.
7. The least stable rated condition is over the end with **unblocked** sprockets and idlers.
8. Refer to the enclosed charts for allowable attachment liftoff lengths and allowable working lengths at the various luffing boom angles.
9. Do not operate at radii or boom lengths where this Crane Rating Manual lists no capacity. Do not use longer booms or jibs than those listed in this Crane Rating Manual. Any of the above can cause a tipping condition or boom and jib failure.
10. Do not travel with a load.

WIRE ROPE CAPACITY CHART

Parts of Line	3/4"		7/8"		Notes
	Type RB	Type N	Type LB	Type RB	
1	12,960*	22,740	25,020	17,520*	Capacities shown are in pounds and working loads must not exceed the ratings on the capacity charts in this Crane Rating Manual. Study Operator's Manual for wire rope inspection procedures.
2	25,920	45,480	50,050	35,040	
3	38,880	68,220	75,080	52,560	
4	51,840	90,970	100,110	70,080	
5	64,800	113,710	125,140	87,600	
6	77,760	136,450	150,170	105,120	
7	90,720	159,200	175,200	122,640	
8	103,680	181,940	200,220	140,160	
9	116,640	204,680	225,250	157,680	
10	129,600	227,420	250,280	175,200	
11	142,560	250,170	275,310	192,720	
12	155,520	272,910	300,340	210,240	
13	168,480	295,650	325,370	227,760	
14	181,440	318,400	350,400	245,280	

LBCE Type	Description
N	6 X 25 (6 X 19 Class) – Filler Wire – Extra Improved Plow Steel – Preformed – I.W.R.C. – Right Lay – Regular Lay
RB	Rotation Resistant – 19 Strand, Compacted Strand – Extra Extra Improved Plow Steel – Preformed – Right Lay – Regular Lay
LB	6 Strand, Compacted Strand – Seale or Warrington Seale – Preformed – I.W.R.C. – Right Lay – Regular Lay

* Use of swivel end with 1 part of line is not recommended.

CAPACITY DEDUCTIONS FOR AUXILIARY LOAD HANDLING EQUIPMENT

Lifting From Luffing Jib With:	Weight (lb)
30 ft Fixed Jib Installed	4,000
15-ton hook ball on fixed jib *	750
15-ton hook ball on auxiliary sheave *	750
60-ton hook block on auxiliary sheave *	1,700
Extra wire rope hoist line reeving	1.5 lbs/ft
Lifting From Auxiliary Sheave With:	Weight (lb)
15 Ton Hook Ball on Fixed Jib *	750
15 Ton Hook Ball on Luffing Jib *	750
60 Ton Hook Block on Luffing Jib *	1,700
Pendant Deflector (w/o Luffing Jib)	500
Luffing Jib Backstops (w/o Luffing Jib)	750
80' Luffing Jib	16,500
90' Luffing Jib	17,700
100' Luffing Jib	19,000
110' Luffing Jib	20,400
120' Luffing Jib	21,800
130' Luffing Jib	23,200
140' Luffing Jib	24,700
150' Luffing Jib	26,300
160' Luffing Jib	27,900
80' Luffing Jib + 30' Fixed Jib	20,200
90' Luffing Jib + 30' Fixed Jib	21,700
100' Luffing Jib + 30' Fixed Jib	23,200
110' Luffing Jib + 30' Fixed Jib	24,700
120' Luffing Jib + 30' Fixed Jib	26,300
130' Luffing Jib + 30' Fixed Jib	28,000
140' Luffing Jib + 30' Fixed Jib	29,600
150' Luffing Jib + 30' Fixed Jib	31,400
Extra Wire Rope Hoist Line Reeving	1.5 lbs/ft

* – (see hook block for actual weight)

WIND SPEED RESTRICTIONS

- Failure to follow these wind speed restrictions may result in structural failure of the luffing jib and/or luffing boom, which would cause property damage and/or bodily injury.
- The effects of the wind force on the hook load are the responsibility of the user and are not taken into account. When hoisting any load in windy conditions, the load wind area and load controllability must be considered for safe crane operation.
- Wind speed is to be determined at the luffing boom cap.

WIND SPEED CHART

Luffing Boom Lengths: 85' to 145'	
Luffing Jib Only Lengths: 80' to 120'	
Luffing Jib + Fixed Jib Lengths: 80 + 30' or 90' + 30'	
DESCRIPTION	ALLOWABLE WIND SPEED IN M.P.H.
1. Normal Lifting Operation. (See Capacity Charts)	0–25
2. Reduced Operation. Capacities must be reduced by 50%.	26–40
3. No Operation. Store Attachment On Ground.	Over 40
4. Job Site Travel Charts. (See Operator's Manual)	0–15
Luffing Boom Lengths: 155' or 165'	
Luffing Jib Only Lengths: 130' to 160'	
Luffing Jib + Fixed Jib Lengths: 100' + 30' to 150' + 30'	
DESCRIPTION	ALLOWABLE WIND SPEEDS IN M.P.H.
1. Normal Lifting Operation. (See Capacity Charts)	0–25
2. No Operation. Store Attachment.*	26–40
3. No Operation. Store Attachment On Ground.	Over 40
4. Job Site Travel Charts. (See Operator's Manual)	0–15

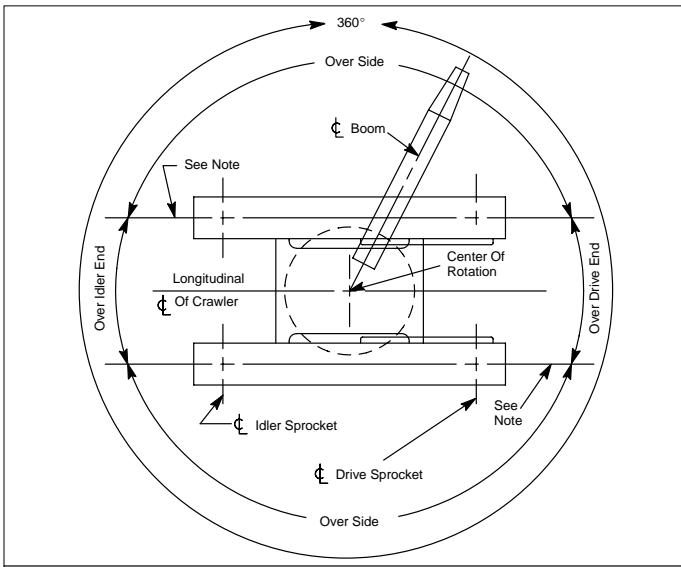
*The attachment must be stored in one of the following positions:

- Lay the luffing boom and luffing jib on the ground.
- Tie off luffing boom tip to an immovable object. For details and information on the tie-off procedure, see the Operator's Manual.

JOB SITE TRAVEL RESTRICTIONS

- All capacities listed in this Crane Rating Manual are static rated capacities. Job site travel with a load is prohibited.
- Travel with the luffing jib folded under and latched to the luffing boom is permitted only when the luffing boom is at a 75 degree luffing boom angle.
- Travel is prohibited at luffing boom angles greater than 85 degrees.
- If a luffing attachment combination has a capacity listed for a given radius and the luffing boom angle is less than 85 degrees, travel without load is permitted in that configuration.
- With the luffing boom set at 75 degrees, travel without load is permitted at the negative value of any luffing jib angle that has a rated capacity on the 360° chart for a 75° luffing boom angle.
- Travel is restricted to smooth, level, and solid surfaces.
- The upper must be positioned straight over the end of the crawler lower.
- The swing lock must be engaged.
- The wind speed must be less than 15 mph.
- See Operator's Manual for more information.

WORKING AREAS



Note: These Lines Determine The Limiting Position Of Any Load For Operation Within Working Areas Indicated.

AUXILIARY SHEAVES NOTES

1. Capacities are for a LS-238H Crawler Crane with ABC (69,000 lb) upper counterweight and 20K (20,000 lb) lower counterweight.
2. Capacities are for Crawler Crane working areas, as described on the Working Areas Chart found in the General Information section of this Crane Rating Manual and are based on the crane sitting level on a firm supporting surface.
3. Capacities are limited to an LBCE 62" x 70" tubular boom with a luffing boom top.
4. Four parts of line are required for maximum lift.
5. Capacities are for luffing boom lengths between 85 feet and 165 feet.
6. The least stable condition is over the end with **unblocked** idlers and sprockets.
7. All capacities are in pounds and are not more than 75% of the tipping loads. Those capacities followed by an asterisk are governed by factors other than those which would cause a tipping condition.
8. The appropriate deduction must be taken if any luffing jib or fixed jib components are installed. See the Capacity Deductions for Auxiliary Load Handling Equipment for more information.
9. If the luffing jib is installed, the minimum luffing boom angle is 65 degrees. The maximum boom angle is 80 degrees when using the auxiliary sheaves.
10. The luffing jib should be set to a 15 degree offset when using the auxiliary sheaves.
11. See Operator's Manual for more information.

ROLLED OUT LIFTOFF CAPABILITIES

Luffing Boom Length		Luffing Jib Length		Luffing Jib + Fixed Jib Length	
ft	m	ft	m	ft	m
85	25.9	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
95	29.0	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
105	32.0	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
115	35.1	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
125	38.1	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
*135	41.1	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
*145	44.2	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
*155	47.2	80-160	24.4-48.8	80+30 - 150+30	24.4+9.1-45.7+9.1
*165	50.3	110-160	33.5-48.8	110+30 - 150+30	33.5+9.1-45.7+9.1

ROLLED UNDER LIFTOFF CAPABILITIES				LATCHED UNDER LIFTOFF CAPABILITIES			
Luffing Boom Length		Luffing Jib Length		Luffing Boom Length		Luffing Jib Length	
ft	m	ft	m	ft	m	ft	m
95	29.0	80	24.4	95	29.0	80	24.4
105	32.0	80-90	24.4-27.4	105	32.0	80-90	24.4-27.4
115	35.1	80-100	24.4-30.5	115	35.1	80-100	24.4-30.5
125	38.1	80-110	24.4-33.5	125	38.1	80-110	24.4-33.5
*135	41.1	80-120	24.4-36.6	*135	41.1	80-120	24.4-36.6
*145	44.2	80-130	24.4-39.6	*145	44.2	80-130	24.4-39.6
*155	47.2	80-140	24.4-42.7	*155	47.2	80-140	24.4-42.7
*165	50.3	110-150	33.5-45.7				

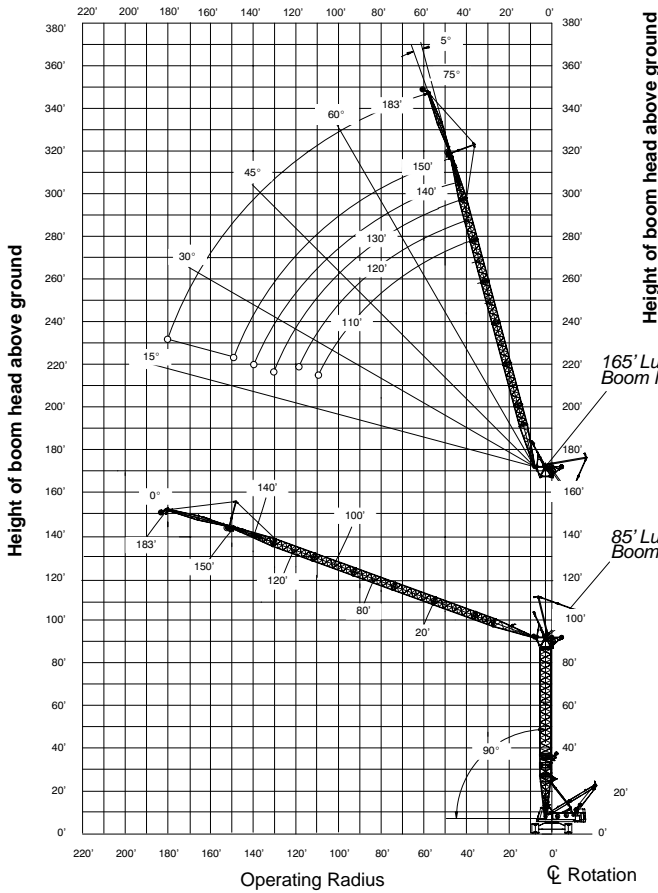
Notes:

1. Erection must be done over the end of the lower, with the idlers / sprockets blocked with 5/8" steel plate.
2. Counterweights: "ABC" 69,000 lb Upper + 20,000 lb Lower.

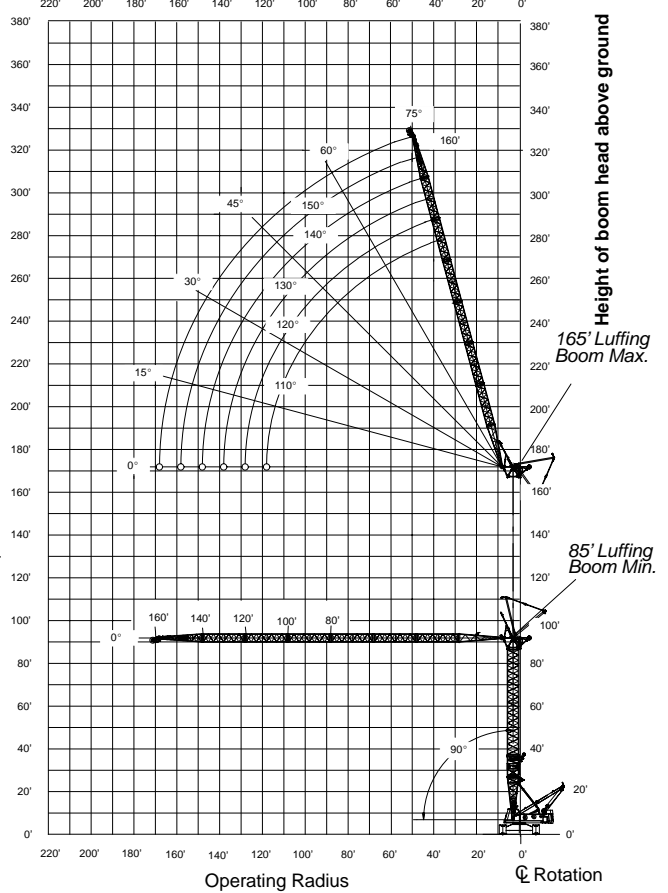
CRANE ASSEMBLY COMPONENT WEIGHTS

Component	Weight	
	lbs	kg
1. 20 ft Luffing Boom Base Section (w/o 3rd Drum)	3,780	1 715
• 3rd Drum (w/o Rope)	1,910	866
• 3rd Drum Rope (745 Ft. of 7/8" type "RB")	1,120	508
2. 10 ft Self Assembly Section	3,160	1 433
3. Luffing Boom Extensions (w/o Luffing Jib Bail Guide Rails and Pendants)	62 lbs/ft	92 kg/m
• Luffing Jib Bail Guide Rails (50' Required)	25 lbs/ft	37 kg/m
• Luffing Boom Pendants	13 lbs/ft	19 kg/m
4. Luffing Jib Bail	1,010	458
5. Luffing Jib Bridle	460	209
6. Luffing Boom Cap	2,820	1 279
7. Pendant Deflector	500	227
8. Luffing Jib Backstops	750	340
9. Fan Post Assembly	2,530	1 148
10. Luffing Jib Base	1,510	685
11. Luffing Jib Extensions (w/o Pendants)	44 lbs/ft	65 kg/m
• Luffing Jib Pendants	11 lbs/ft.	17 kg/m
12. Luffing Jib Peak (w/2 Sheaves)	2800	1 270
13. 30' Fixed Jib Assembly	1,740	789
14. Upper Counterweights		
• CTWT. "A"	23,000	10 433
• CTWT. "B"	19,330	8 768
• CTWT. "C"	26,670	12 098
• CTWT. "AB"	42,330	19 201
• CTWT. "ABC"	69,000	31 298
15. Lower Counterweights (Each)	10,000	4 536
16. Counterweight Assist Frame	3,400	1 542
17. Side Frames (Each)	35,000	15 876
18. Carbody Jack Cylinders (Each)	560	254

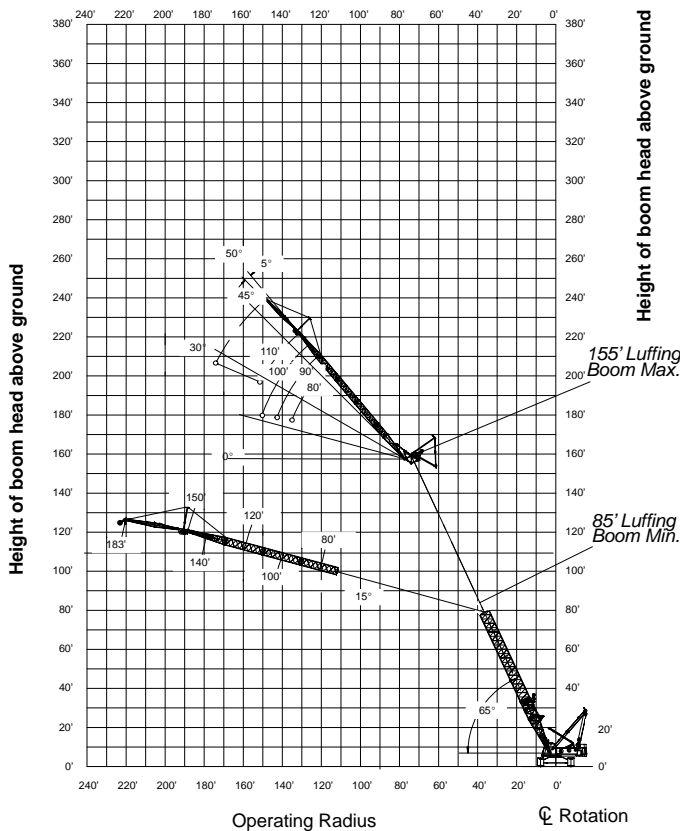
90° LUFFING BOOM ANGLE – 360° LUFFING JIB + FIXED JIB



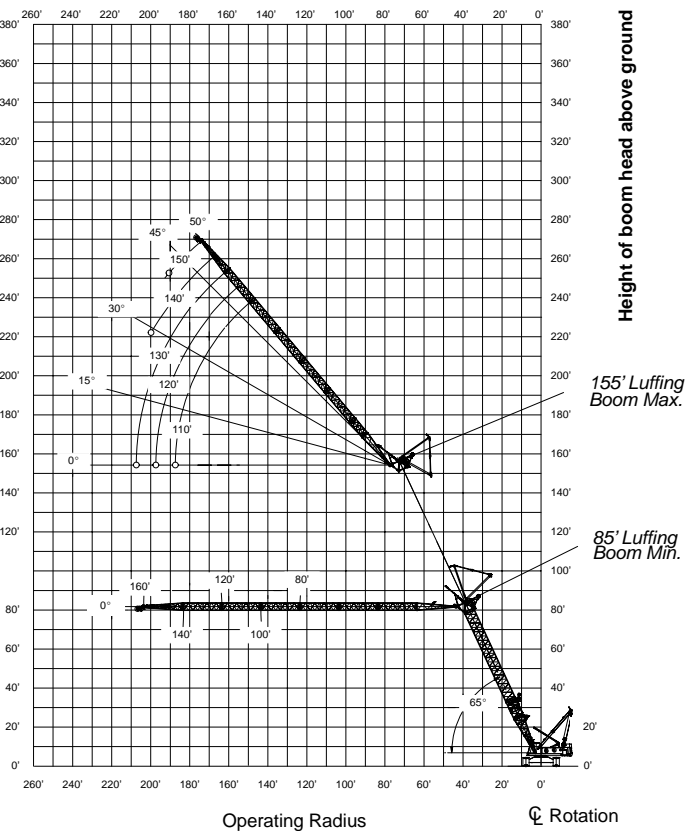
90° LUFFING BOOM ANGLE – 360° LUFFING JIB



65° LUFFING BOOM ANGLE – 360° LUFFING JIB + FIXED JIB

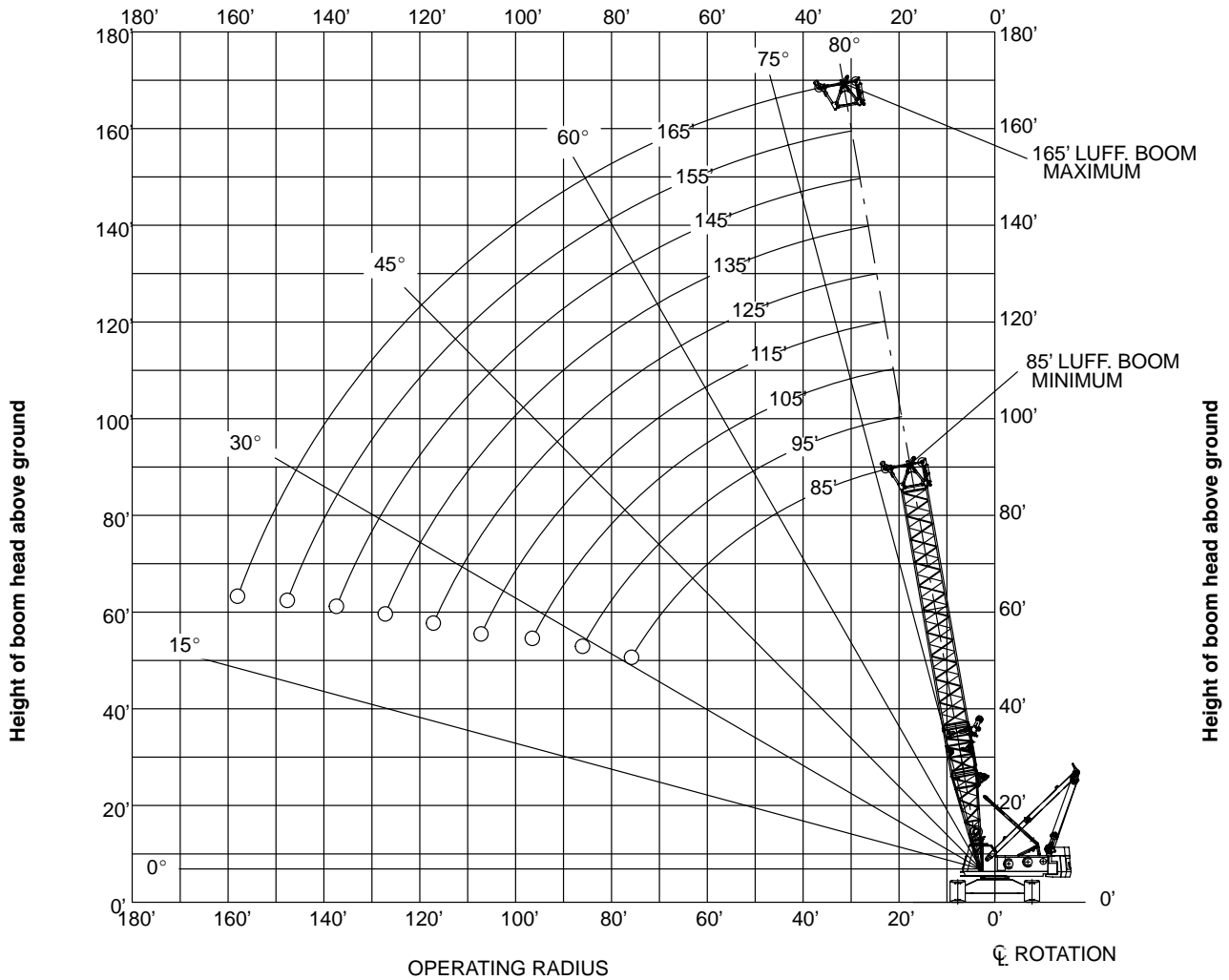


65° LUFFING BOOM ANGLE – 360° LUFFING JIB



Note: Boom and jib geometry shown are for unloaded condition and crane standing level on firm supporting surface. Boom deflection, subsequent radius, and boom angle change must be accounted for when applying load to hook.

AUXILIARY SHEAVES – 360°



Note: Boom and jib geometry shown are for unloaded condition and crane standing level on firm supporting surface. Boom deflection, subsequent radius, and boom angle change must be accounted for when applying load to hook.

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