



130t



50m



66.7m

# ZOOMLION

# TECHNICAL SPECIFICATIONS

## ZRT1300V5

ROUGH TERRAIN CRANE

Edition 1 March 2024



ZOOMLION

PROD  
4.0

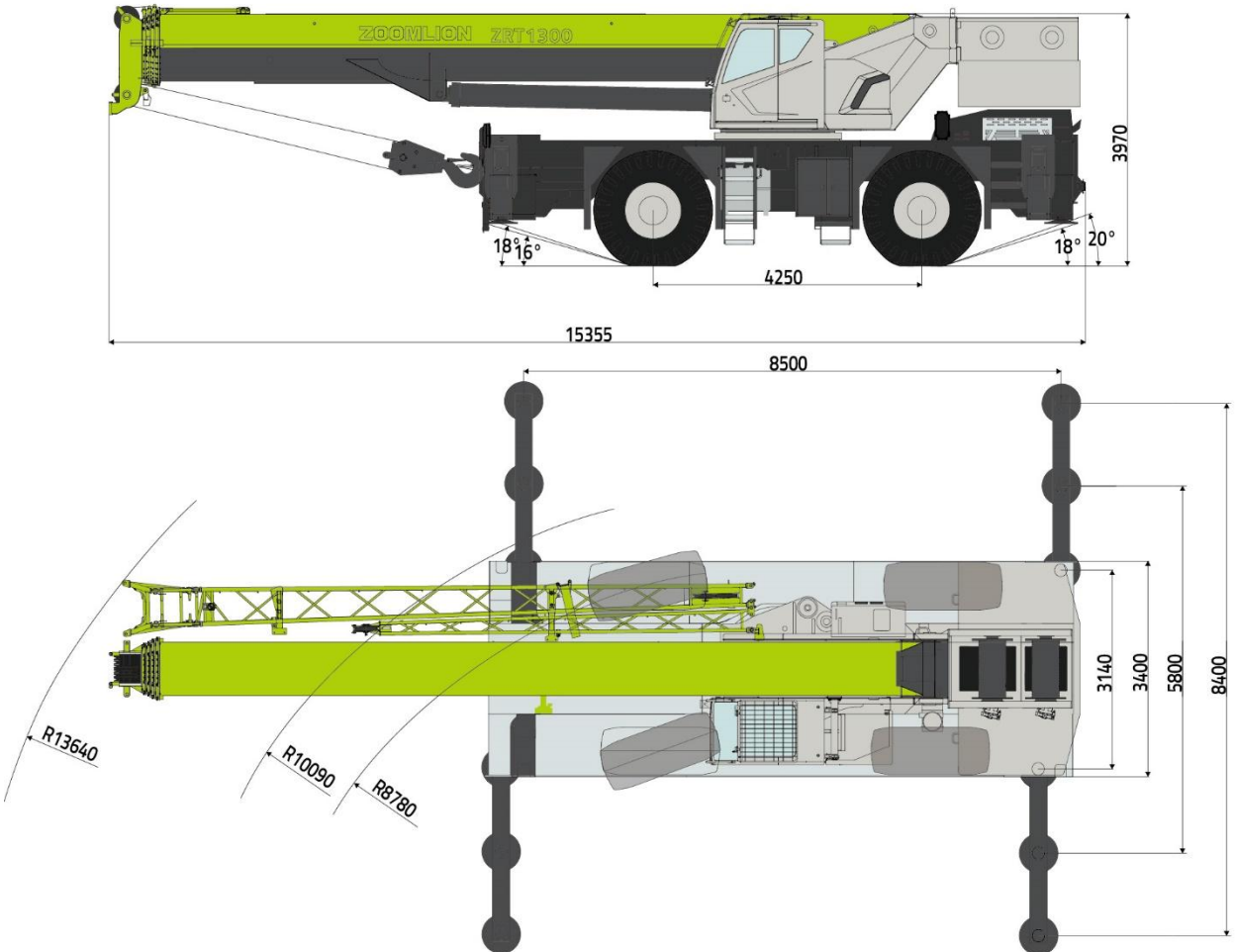


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# Overall Dimensions

Overall dimensions (Unit: mm)



# ZRT1300V5 Product Introduction





50m



9.5m-16m



194kw



14.5t

## Main Technical Parameters

Type	Item	Unit	Value
Working performance	Max. rated lifting capacity × working radius	kg.m	130000×2.5
	Max. load moment of the basic boom	kN.m	3760
	Max. load moment of the boom (fully extended)	kN.m	1862
	Max. lifting height of the boom (fully extended)	m	50.5
	Max. lifting height of the jib	m	66.7
Dimensions	Overall dimensions (L × W × H)	mm	15355×3400×3970
	Outrigger spread (longitudinal × transversal)	mm	8500×8400
	Boom length	mm	12700-50000
	Jib length	mm	9500, 16000
	Boom angle	°	-1-80
	Slewing range		360° unlimited slewing
Working speeds	Max. hoist rope speed (Main winch)	m/min	130
	Min. boom telescoping-out time	s	150
	Min. boom telescoping-in time	s	170
	Min. boom derricking-up time	s	70
	Min. boom derricking-down time	s	155
	Slewing speed	r/min	0-1.6
Hydraulic system	Rated working pressure	MPa	28
	Rated working flow	L/min	320
	Hydraulic oil tank capacity	L	1300
Gross vehicle mass	Gross weight	kg	62500
	Front axle load	kg	31500
	Rear axle load	kg	31000
Driving	Max. driving speed	km/h	30/30
	Wheelbase	mm	4250
	Treads (Front / Rear)	mm	2565
	Max. gradeability	%	75%

Type	Item	Unit	Main configuration
Power system	Engine manufacturer & model		Cummins QSB6.7
	Fuel type		Diesel
	Intake system		Turbo-charged, air-to-air inter-cooling
	Cooling system		Water-cooling
	Engine rated power	KW/rpm	194KW/2200rpm (Dongfeng Cummins) 194KW/2400rpm (US Cummins)
	Engine rated torque	N.m/rpm	990N.m/1500rpm
	Fuel tank capacity		300 L
Drive system	Transmission drive mode		4×2, 4×4
	Transmission brand or model		DANA
	Transmission gear		6 forward and 6 reverse gears
Travelling system	Suspension		Rigid (front) / Flexible (rear)
	Axle brand or model		Meritor
	Steering mode		2-wheel steering (front wheels) 2-wheel steering (rear wheels) 4-wheel steering Crab steering
	Tire size		29.5-25-34PR
	Tire number		4
Hydraulic system	Main valve brand		ZOOMLION
	Pump		HYTEK
	Balance valve / hydraulic lock		ZOOMLION
Electrical system	Load moment limiter		ZOOMLION/HIRSCHMANN
Emission			T III

# Configuration



## Superstructure

<b>Main boom</b>	<p>The box-shaped telescopic boom consists of 5 U-type boom sections made of high-strength steel. The telescopic boom sections are telescoped in / out via two telescopic cylinders and two sets of boom extension/retraction ropes. Each telescopic cylinder is equipped with a plug-in balance valve.</p> <p>The boom head is equipped with 6 pulleys, which is convenient for changing wire rope reevings without removing the wedges. A rooster sheave is optional.</p> <p>Main boom length (fully retracted): 12700mm  Main boom length (fully extended): 50000mm  Telescoping-out time: 150s</p>
<b>Jib</b>	<p>It consists of two lattice jib sections. The jib section II is secured into the jib section I, and the whole jib is fixed at one side of the main boom during transport. A single pulley is assembled at the jib head.</p> <p>Jib angle: 0°, 15° and 30°  Jib length: 9.5m ~ 16m</p>
<b>Derricking mechanism</b>	<p>A front-mounted single derricking cylinder is installed with a derricking balance valve.</p> <p>Derricking angle: -1° ~ 80°  Derricking speed: -1° ~ 80°/ 70s</p>
<b>Hoisting mechanism</b>	<p>Main and auxiliary winches</p> <p>Main and auxiliary winches share the same fittings. Load hoisting and lowering are realized through the rotation of the drum driven by the planetary reducer, which is driven by the variable axial piston hydraulic motor.</p>
	<p>Wire rope</p> <p>Anti-twisting wire rope</p> <p>Max. hoist rope tensile force: 8500kg  Max. hoist rope speed: 130m/min (At the 4th layer)  Rope diameter: Φ20mm  Main winch rope length: 260m  Auxiliary winch rope length: 140m</p>
	<p>Hook</p> <p>Rotatable main hook: 70t, with 6 pulleys and a hook latch, with 6 pulleys and a hook latch, secured at the front of the chassis frame.</p> <p>Rotatable auxiliary hook: 8t, with a hook latch, used with the rooster sheave and jib, secured at the auxiliary hook holder on the chassis frame.</p>
<b>Slewing mechanism</b>	<p>It consists of such parts as hydraulic motor, planetary gear reducer, pinion gear and slewing ring, etc. Via the planetary gear reducer, the hydraulic motor drives the pinion gear to rotate and makes the slewing bearing's outer ring rotate around its inner</p>

	<p>toothed ring fixed on chassis frame, realizing 360 ° unlimited slewing of the superstructure.</p> <p>Hydraulically controlled normally-closed brake with controllable slewing function and 360° hydraulic slewing lock.</p> <p>Slewing speed: 0 ~ 1.6 r/min</p>
<b>Slewing platform</b>	The turntable adopts a wall plate structure.
<b>Counterweight</b>	Fixed counterweight of 14.5t
<b>Hydraulic system</b>	<p>Oil pump</p> <p>The two variable pumps mounted on the transmission together supply hydraulic oil to the telescoping, derricking and hoist mechanisms. Moreover, the two pumps also supply pilot oil.</p> <p>Duplex gear pumps are mounted on the transmission. One gear pump supplies hydraulic oil to outriggers, braking system, oil radiator of chassis torque converter, and superstructure AC. The other gear pump supplies hydraulic oil to outriggers, slewing and steering systems.</p>
	<p>Control valve</p> <p>Quadruple downstream-pressure compensation hydraulic-controlled multiplex directional valve.</p>
	<p>Pipeline</p> <p>Hydraulic oil return lines are fitted with an air-cooled hydraulic oil cooler driven by an electric motor.</p> <p>The system pressure can be displayed on the instrument console. Hydraulic pipelines are fitted with pressure test ports.</p>
	<p>Hydraulic oil tank</p> <p>Capacity: 1300 L</p> <p>The built-in return oil filter has a defoaming function. The filter fineness is 10μm.</p>
<b>Crane control</b>	<p>Operations of the superstructure are controlled by the two hydraulic joysticks on both sides of operator's seat (complying with ISO standard requirements).</p> <p>The left joystick controls the slewing mechanism and the auxiliary winch;</p> <p>The right joystick controls the derricking mechanism and the main winch.</p> <p>Hoisting, derricking and telescoping can be executed synchronously.</p>
<b>Driver's cab</b>	<p>There is only one cab for ZRT1300V5 rough terrain crane. It can be used as the operator's cab as well as the driver's cab. It is a side-mounted one-seat left-hand driving cab.</p> <p>Both sides of the seat are equipped with an armrest box. The left armrest box can be pulled up. Controls of the superstructure are arranged according to the requirements of ASME B30.5-2007 standard and comply with ISO (International Organization for Standardization) standard.</p> <p>Length: 1810±5mm</p> <p>Width: 1050±5mm</p> <p>Height: 1710±5mm</p>

<p><b>Load moment limiter</b></p>	<p>If the actual load moment approaches the rated one, the buzzer sends out a sound-light alarm and all dangerous operations of the crane are cut off automatically if the rated load moment is reached.</p> <p>The load moment limiter can also limit working ranges, such as working radius, boom angle, lifting height, slewing range, etc.</p> <p>The following information can be displayed on the monitor:</p> <ul style="list-style-type: none"> <li>-Boom angle or moment ratio;</li> <li>-Boom length or default hook weight;</li> <li>-Actual working radius or slewing angle;</li> <li>-Actual lifting capacity;</li> <li>-Max. permissible lifting capacity;</li> <li>-Jib angle or wire rope reeving;</li> <li>-Indication of boom position;</li> <li>-Outrigger position or “On Tires” indication.</li> </ul> <p>The following information is displayed by bar graph:</p> <ul style="list-style-type: none"> <li>-Dynamic moment percentage;</li> <li>-Working pressure of hydraulic system.</li> </ul>
<p><b>Outriggers</b></p>	<p>H-type outriggers, hydraulically controlled, can be operated in the cab simultaneously or independently.</p> <p>Each vertical jack cylinder is equipped with a two-way hydraulic lock to ensure the secure lock of outriggers during working or driving.</p> <p>Outrigger boxes are directly welded on the chassis frame.</p> <p>The outriggers can be completely extended, half extended or completely retracted for different operating modes.</p> <p>Outrigger spread (longitudinal):           8500 mm</p> <p>Outrigger spread (transversal):           8400 mm (fully extended)  5800 mm (half extended)  3140 mm (fully retracted)</p>



## Chassis

<b>Type</b>	Rear-mounted engine; left-hand drive; drive mode: 4 x 2 and 4 x 4
<b>Chassis frame</b>	An Integral box-type structure welded by high-strength steel
<b>Engine</b>	Model: CUMMINS QSB6.7
	Type: Four-stroke, 6-cylinder, direct injection, water-cooled, turbocharged diesel engine.
	Max. output power: : 194KW/2200rpm( (Dongfeng Cummins) 194KW/2400rpm (US Cummins)
	Max. output torque: 990 N.m /1500rpm
<b>Drive system</b>	Electrically controlled automatic hydraulic transmission, capable of four-wheel drive mode when the transmission drives both the front and rear axles, as well as rear-wheel drive mode when the transmission disengages from the front axle and only drives the rear axle. Electrically controlled automatic hydraulic transmission; front and rear axles driving mode; front-axle driving is separable. Multiple forward and reverse gears; electric-hydraulic power gear shift with an automatic locking mechanism; The working hydraulic oil pump and the steering oil pump directly take off power from the transmission.
<b>Axle</b>	Front axle:Steering and driving axle, rigidly mounted to the chassis frame, with a planetary reducer and brake.
	Rear axle:Full-floating steering and driving axle, with a planetary reducer and brake.
<b>Steering system</b>	Fully hydraulic power steering gear. The cylinder of the steering and driving axles is controlled by steering wheel to realize crane steering. 4 steering modes: 2-wheel steering – front wheel steering      2-wheel steering – rear wheel steering 4-wheel steering – all-wheel steering      4-wheel steering – crab steering
<b>Suspension system</b>	Front axle: rigidly mounted to the chassis frame Rear axle: a swing axle, connecting to the chassis frame via a hydraulic suspension cylinder
<b>Braking system</b>	Service brake: Hydraulically controlled disc brake acting on 4 wheels
	Parking brake Hydraulically released parking brake, acted by the spring mounted on the input shaft of the front axle.
<b>Electrical system</b>	24V DC, 2 batteries with 12V rated voltage and 120Ah rated current
<b>Fuel tank</b>	Capacity: 300 L

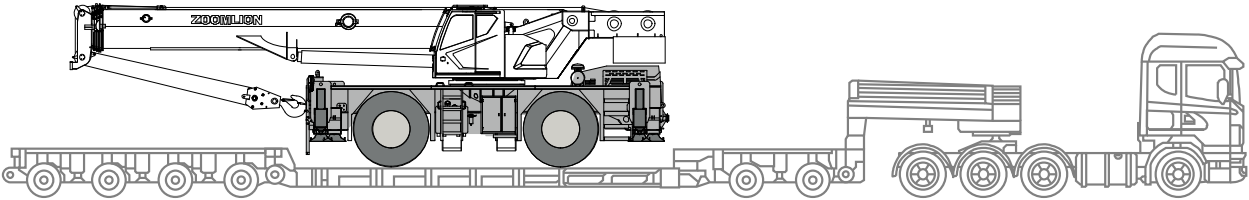
Tire	Size:	29.5-25-34PR
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# Transport

Transport of the main body (meeting road transport requirements)

Dimensions: width of 3.4m, height of 3.97m;



Weight: 62.5t (with counterweight, jib and hook)




Axle load distribution





62500kg	31500kg	31000kg

# Combination of Jib Sections






Jib - 9.5m	
Jib - 16m	

Component	Structural form	Dimensions (L×W×H)	Weight
Jib section 1 + jib section 2 + connecting bracket		Folded 9900mm×1200mm×800mm	800kg

## Hook

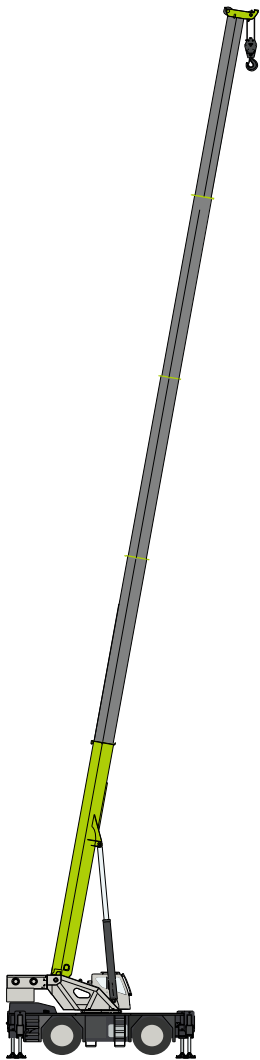
				Standard ● Optional ○
70t	580	1600×600×560	12	●
8t	125	850×300×300	1	●
90t	780	1650×750×550	12	○

## Wire rope

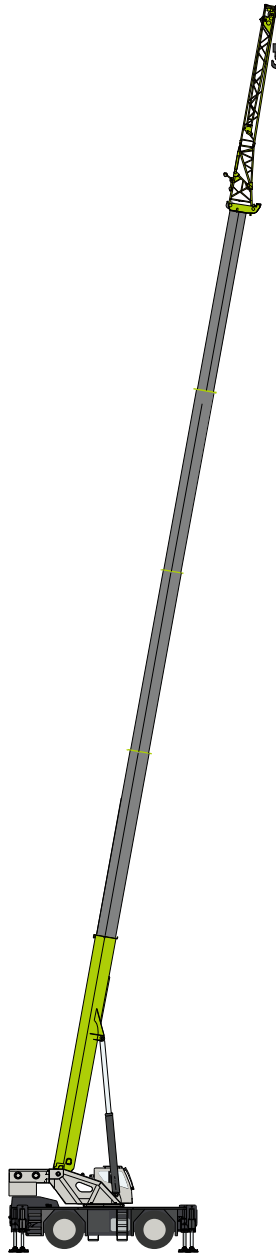
			
	20mm	260	8.5 t
	20mm	140	8.5 t

# Operating Modes

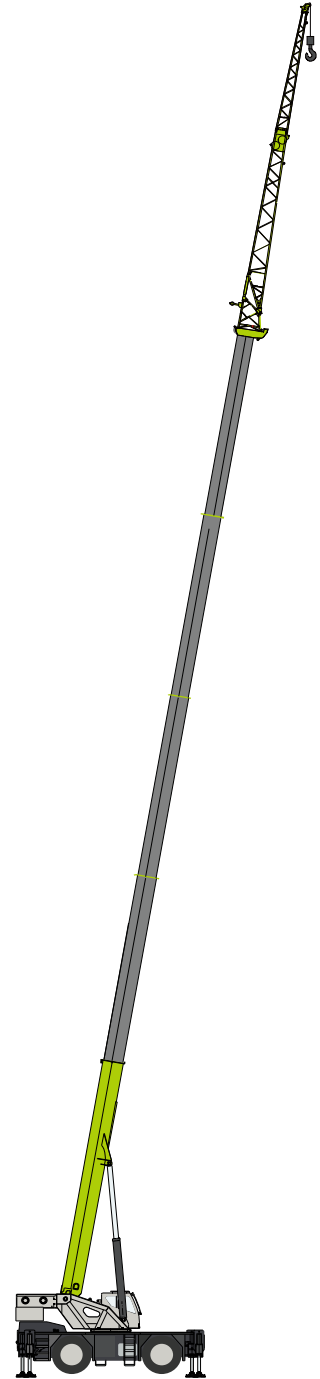
- T Main boom
- F Jib



T5



T5+F1



T5+F2

## Lifting Height Curve + Lifting Capacity Chart

Rated capacity charts are provided for different operating modes of the crane. The operator should choose the correct capacity chart and determine the rated lifting capacity according to the actual operating mode.

The values in Column "I" represent the extended length of the telescopic cylinder I under a corresponding OM. The values in Column II represent three times the extended length of the telescopic cylinder II under a corresponding OM.






### Matters needing attention:





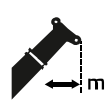
- a) A hook for higher lifting capacity should be used if the rated lifting capacity exceeds 70t. For operating modes marked with "\*" in the table, the crane should be retrofitted with special devices.
- b) Rated load of the crane is provided based on the fact that the crane stands on a leveled, solid and flat supporting ground.
- c) Rated load of the outriggers is provided based on the fact that the outriggers are fully or half extended or fully retracted and the tires are supported off the ground.
- d) Rated load must not be exceeded and do not load the crane with heavy objects to determine its allowable loads.
- e) The load must be lifted vertically. Do not pull the load with an angle.
- f) When the working radius and the main boom length are within the range of the listed values in the table, the smaller value of rated load should be adopted.
- g) The boom angle shown on the lifting height chart is an approximate value for the working radius of a certain boom length. The boom angle should be larger before loading to account for boom deflection.
- h) Rated load includes the weight of hook, wire rope, and auxiliary lifting devices. The net load is obtained by subtracting the weight of these devices from the rated load.
- i) The load rating of crane tires depends on proper tire pressure and tire condition. Extra care must be taken when increasing tire pressure. See the *Operator's Manual* for precautions.
- j) For pick-and-carry operations in tires, the boom must be centered at the front of the crane with the slewing brake lock engaged. Keep the minimum lifting height of the boom so that the load approaches the ground. The crane must travel on a smooth and flat surface.
- k) Avoid swinging during load lifting.
- l) Creeping means the crane travels less than 61m (200ft) within 30 minutes. The maximum creeping speed shall not exceed 1.44 km/h (0.9mph).
- m) Please refer to the *Operator's Manual* for more details on pulley reeving and installation of wire rope.
- n) If a rope reeving larger than the specified reeving is adopted, the hook may not be able to touch the ground due to insufficient length of rope. Choose correct rope reeving according to Table 1.1 in *Load Ratings*.
- o) Proper maintenance of wire rope is an inseparable part of safe crane operation. Please refer to the *Operator's Manual* and *Maintenance Manual* for proper maintenance and inspection requirements.
- p) Rated load should be reduced according to adverse working conditions, such as soft or uneven ground, unbalanced surface, strong wind, lateral load, swing operation, on-load yanking or sudden stop, dangerous state, inexperienced personnel, lifting with two cranes, traveling with load, electric wires, etc. (Lateral push and pull of the main boom or the jib is dangerous). Stop working immediately and retract the boom to the state for driving if the wind speed is higher than 14.1m/s (46.2 ft/s) or there is lightning

when the crane is working.

- q) Maintenance of the crane should be carried out in line with the *Operator's Manual* and *Maintenance Manual* so as not affect its load ratings.

## Symbolic signs

Sign	Description
	Main boom
	Boom length (m)
	Jib
	Slewing of 360°
	Rope reeving

Sign	Description
	Outriggers fully extended
	Outriggers half extended
	Outriggers fully retracted
	14.5t counterweight
	Working radius (m)

# Lifting Height Curves

T

Lifting height curves with outriggers fully extended

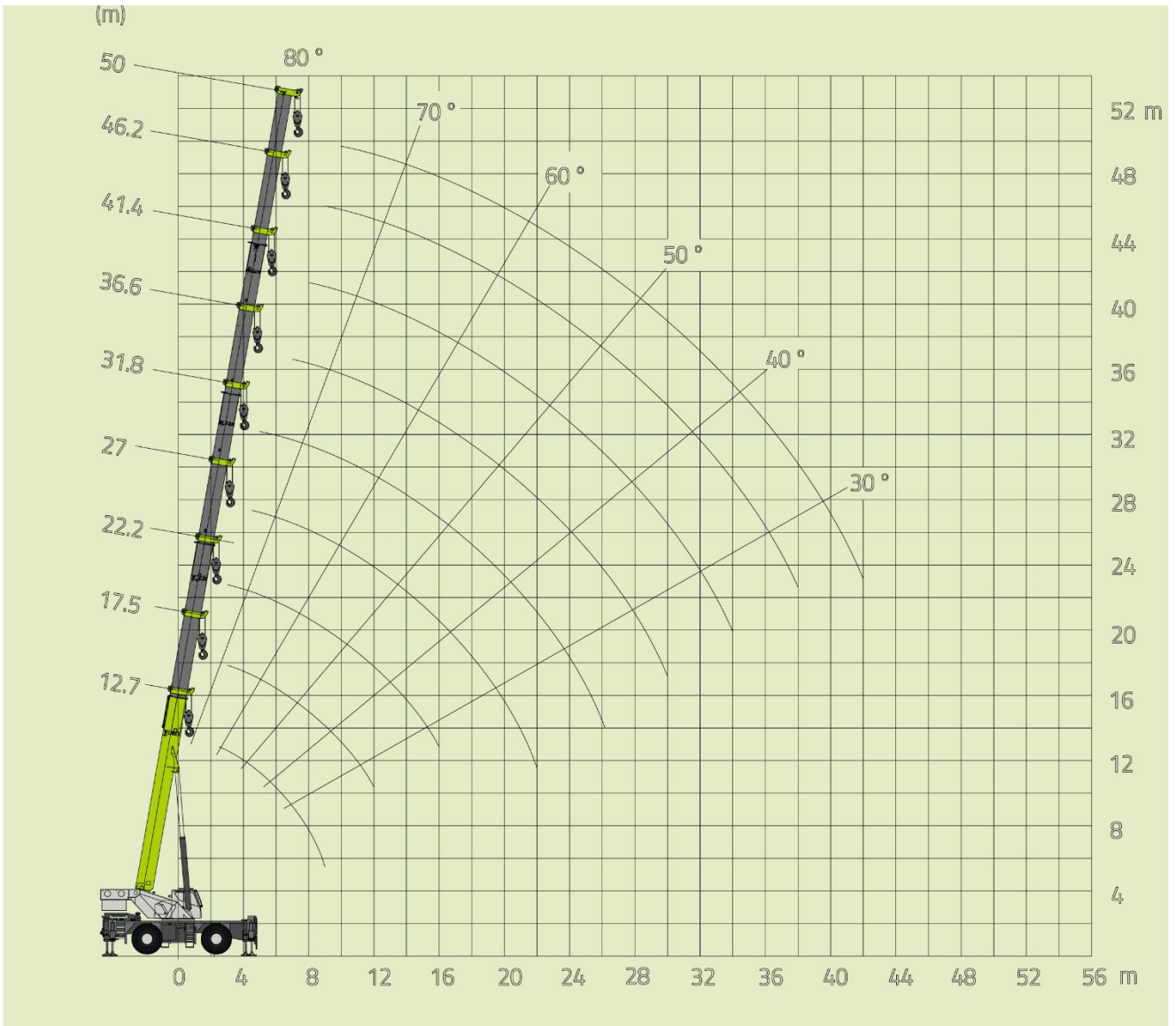






Table 1 Rated lifting capacity chart of main boom with outriggers fully extended

 <span style="float: right;">Unit: t</span>									
	12.7	17.5	22.2	27.0	31.8	36.6	41.4	46.2	50.0
2.5	130.0*								
3.0	110.0*	70.0	50.0						
3.5	96.0*	70.0	50.0						
4.0	86.0*	70.0	50.0	38.0					
4.5	80.0*	70.0	50.0	38.0					
5.0	73.0*	65.0	50.0	38.0	36.0				
5.5	69.0	60.0	48.0	38.0	36.0				
6.0	64.0	55.0	46.5	37.0	36.0				
7.0	53.0	47.0	42.0	36.0	35.0	31.0			
8.0	45.0	41.0	38.0	34.0	33.0	30.0	22.0		
9.0	36.0	35.5	35.0	32.0	30.0	28.0	22.0	19.0	
10.0		31.4	31.0	29.0	27.5	26.0	21.0	18.0	14.5
11.0		26.0	25.7	27.0	25.5	24.0	20.0	17.0	14.0
12.0		21.8	21.5	22.7	23.5	22.0	18.5	16.0	13.5
14.0			15.5	16.7	17.5	18.3	16.0	14.0	13.0
16.0			11.5	12.7	13.5	14.2	14.6	12.5	11.5
18.0				9.9	10.7	11.4	11.8	11.5	10.5
20.0				7.9	8.6	9.2	9.6	10.0	9.5
22.0				6.2	6.9	7.5	7.9	8.3	8.6
24.0					5.6	6.2	6.5	6.9	7.2
26.0					4.5	5.1	5.4	5.8	6.0
28.0						4.2	4.5	4.9	5.1
30.0						3.4	3.7	4.1	4.3
32.0							3.1	3.4	3.6
34.0							2.5	2.8	3.0
36.0								2.4	2.5
38.0								2.0	2.1
40.0									1.7
42.0									1.4
I	0	4.8	9.5	9.5	9.5	9.5	9.5	9.5	9.5
II	0	0	0	4.8	9.6	14.4	19.2	24.0	27.8
	12	11	8	7	6	5	4	3	3
	70t								

# Lifting Height Curves

TF

Lifting height curves with outriggers fully extended + jib installed

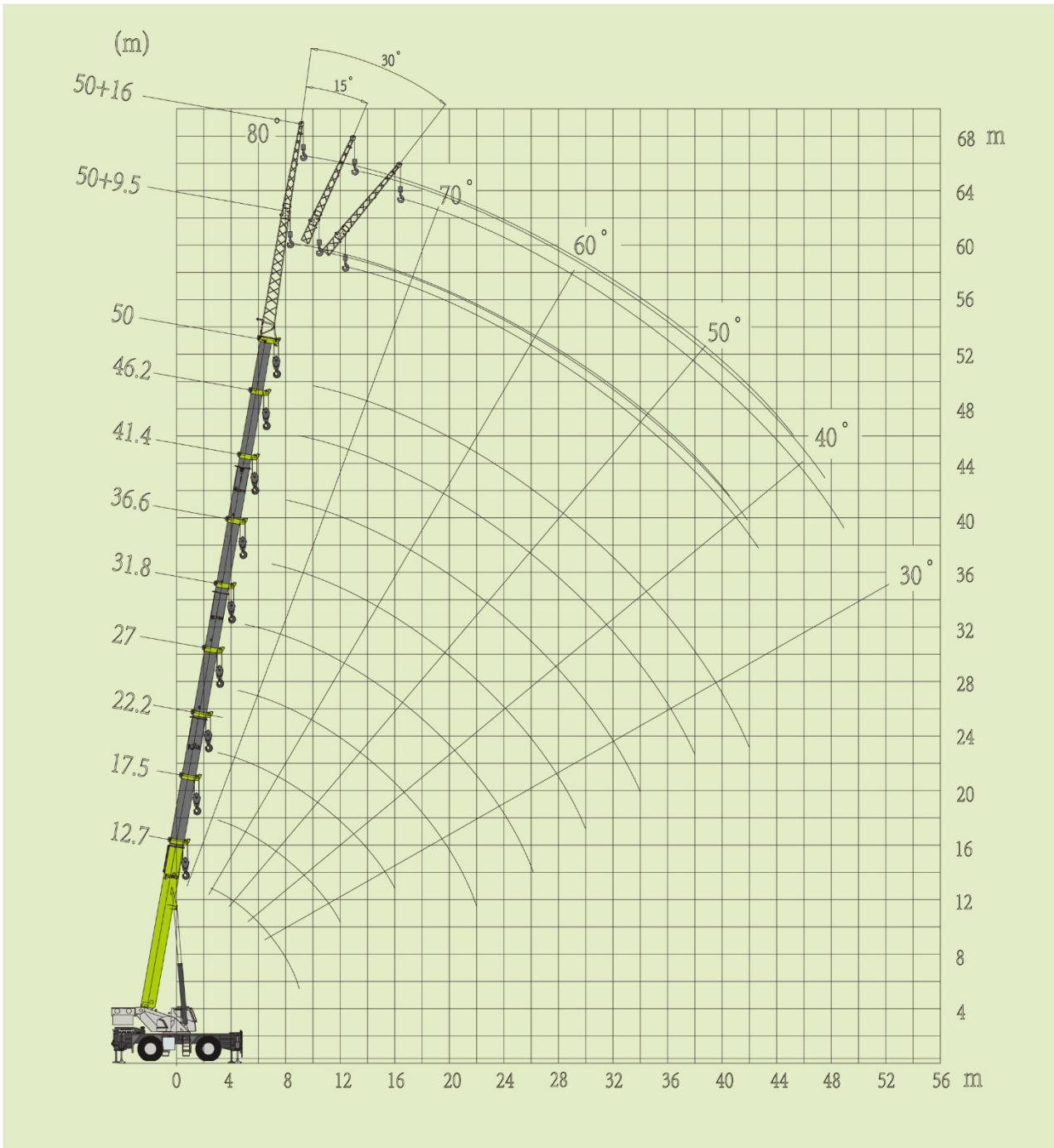




Table 2 Rated lifting capacity chart of main boom + jib with outriggers fully extended




Unit: t

Main boom angle (°)	50.0+9.5			50.0+16.0		
	0°	15°	30°	0°	15°	30°
80	5.5	3.3	2.5	3.0	2.0	1.5
78	5.0	3.3	2.5	3.0	2.0	1.45
76	4.8	3.2	2.5	2.9	1.9	1.4
74	4.5	3.1	2.5	2.7	1.8	1.35
72	4.2	3.0	2.5	2.5	1.7	1.3
70	3.9	2.9	2.4	2.3	1.65	1.25
68	3.6	2.8	2.3	2.1	1.6	1.25
66	3.4	2.7	2.2	2.0	1.55	1.2
64	3.2	2.6	2.1	1.9	1.5	1.2
62	3.0	2.5	2.05	1.8	1.45	1.15
60	2.8	2.4	2	1.7	1.4	1.15
58	2.7	2.3	1.95	1.6	1.35	1.1
56	2.6	2.2	1.9	1.55	1.3	1.1
54	2.5	2.1	1.85	1.5	1.25	1.05
52	2.2	2.0	1.8	1.45	1.2	1.05
50	1.9	1.8	1.7	1.4	1.15	1.0
48	1.7	1.6	1.5	1.35	1.1	0.95
46	1.5	1.4	1.3	1.2	1.05	0.9
44	1.3	1.2	1.1	1.0	0.9	0.85
42	1.1	1.0	0.9	0.8	0.75	0.7
40	0.9	0.8	0.7			
	1					
	8t					


**ZOOMLION**



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