LHM 420

www.liebherr.com

LIEBHERR

Mobile harbour crane

EN

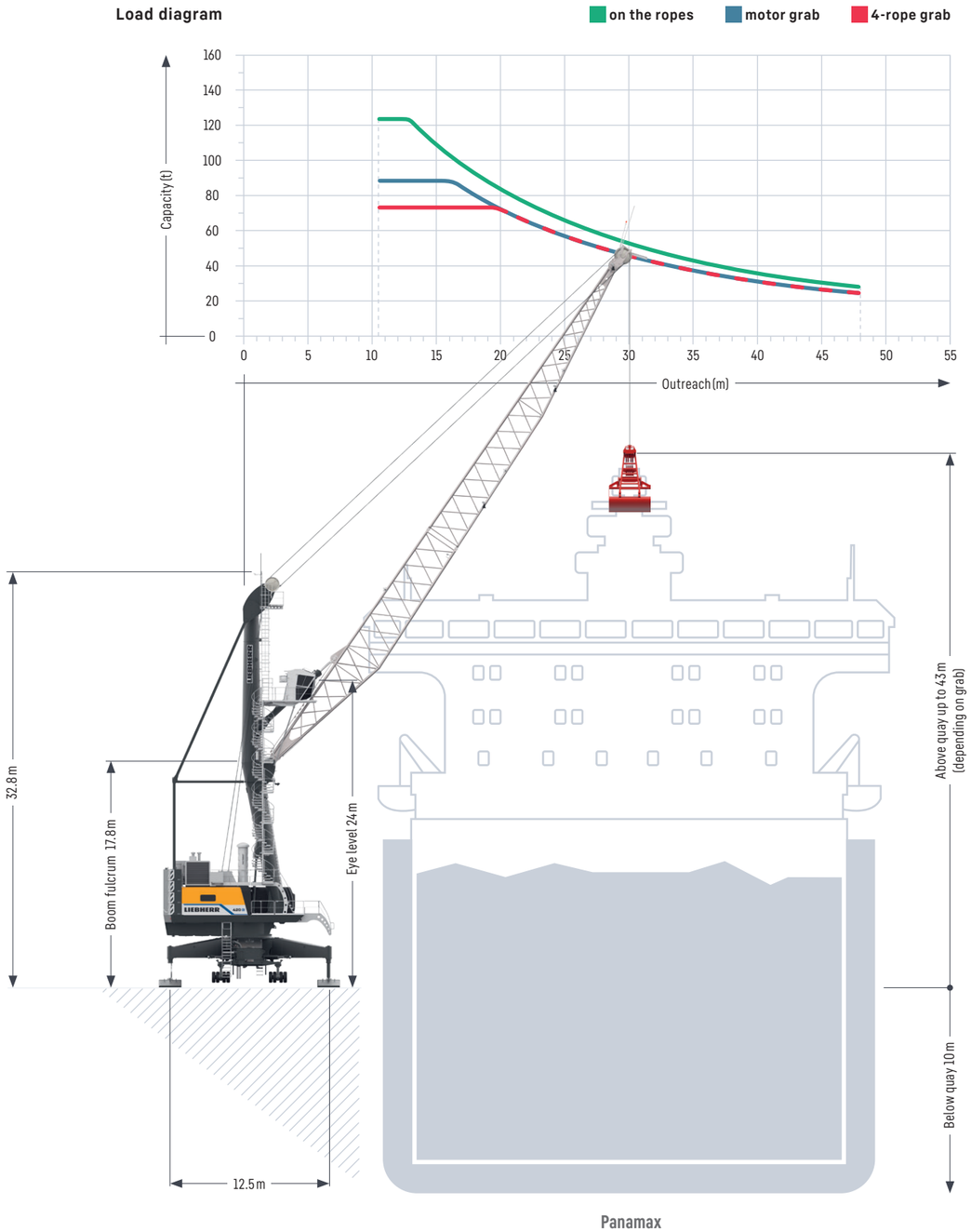
Maximum lifting capacity
124t

Maximum outreach
48m

Drive systems
Electric, Hybrid, Diesel (HVO 100-ready)

Main dimensions

Bulk operation



Panamax

Lifting capacities

Bulk operation

Lifting capacity 124 t

	Hook operation	Grab operation	
Outreach	on the ropes	4-rope grab	motor grab
(m)	(t)	(t)	(t)
10.5 – 12	124.0	75.0	90.0
13	117.6	75.0	90.0
14	111.5	75.0	90.0
15	105.6	75.0	90.0
16	100.1	75.0	90.0
18	90.0	75.0	81.0
19	85.3	75.0	76.8
20	81.0	72.9	72.9
22	73.1	65.8	65.8
24	66.2	59.6	59.6
26	60.2	54.2	54.2
28	55.1	49.5	49.5
30	50.6	45.5	45.5
32	46.8	42.1	42.1
34	43.4	39.1	39.1
36	40.5	36.5	36.5
38	38.0	34.2	34.2
40	35.7	32.1	32.1
42	33.5	30.2	30.2
44	31.4	28.3	28.3
46	29.3	26.3	26.3
48	27.3	24.5	24.5

Weight rotator 3.5 t

Lifting capacity 84 t

	Hook operation	Grab operation	
Outreach	on the ropes	4-rope grab	motor grab
(m)	(t)	(t)	(t)
10.5 – 12	84.0	45.0	52.0
13	84.0	45.0	52.0
14	84.0	45.0	52.0
15	84.0	45.0	52.0
16	84.0	45.0	52.0
18	84.0	45.0	52.0
19	84.0	45.0	52.0
20	81.0	45.0	52.0
22	73.1	45.0	52.0
24	66.2	45.0	52.0
26	60.2	45.0	52.0
28	55.1	45.0	49.5
30	50.6	45.0	45.5
32	46.8	42.1	42.1
34	43.4	39.1	39.1
36	40.5	36.5	36.5
38	38.0	34.2	34.2
40	35.7	32.1	32.1
42	33.5	30.2	30.2
44	31.4	28.3	28.3
46	29.3	26.3	26.3
48	27.3	24.5	24.5

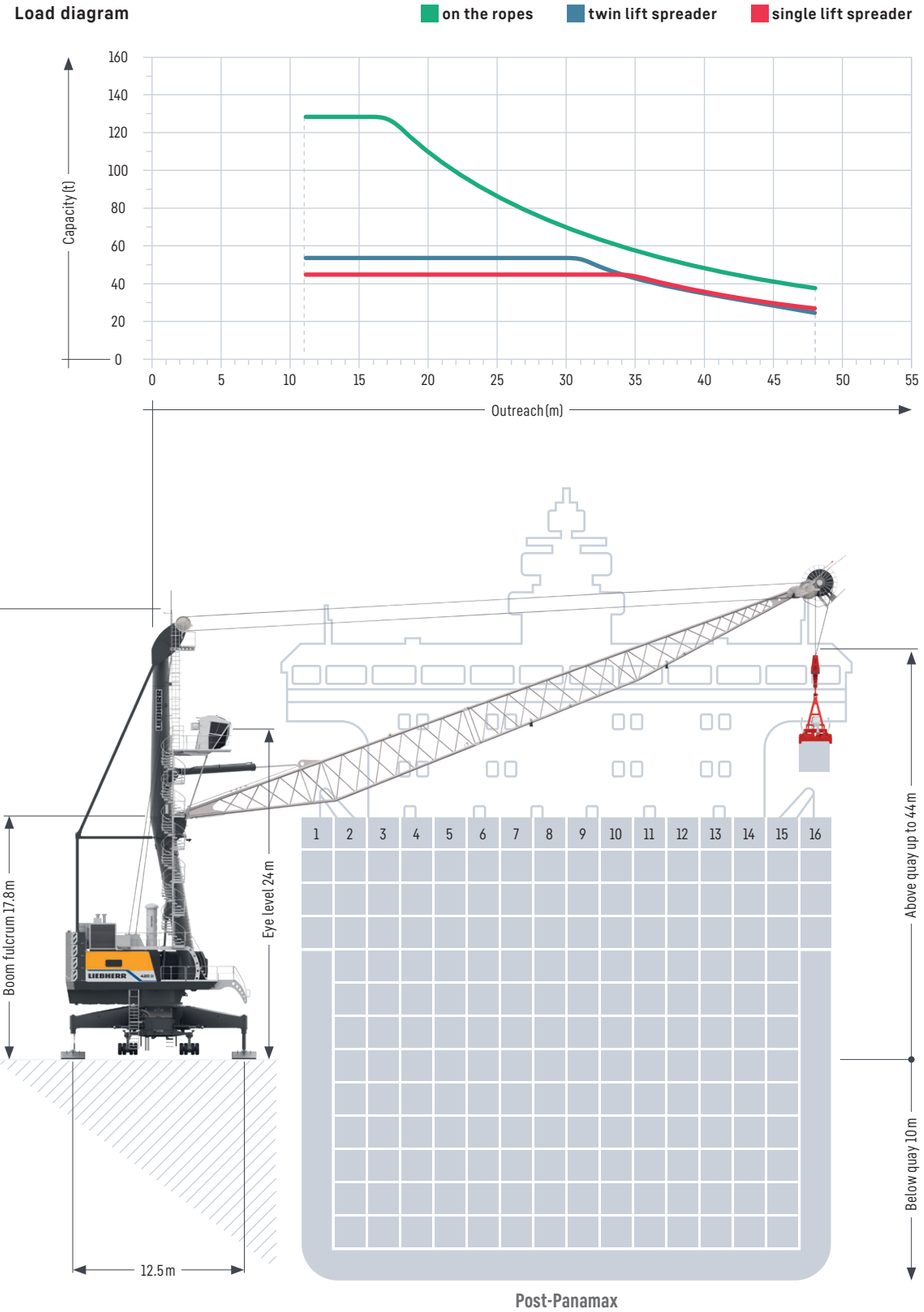
Weight rotator 2.5 t

Standard configuration – Turnover up to 1,500 t per hour
Pactronic® – Turnover up to 2,000 t per hour

The powerful hydrostatic transmission and advanced Liebherr electronics ensure short, productive working cycles during bulk handling.

Main dimensions

Container operation



Lifting capacities

Container operation

Lifting capacity 124 t

	Spreader operation under		Hook operation on the ropes
Outreach	Single lift	Twin lift	Heavy lift
(m)	(t)	(t)	(t)
11	41.0	50.0	124.0
12	41.0	50.0	124.0
13	41.0	50.0	124.0
14	41.0	50.0	124.0
16	41.0	50.0	124.0
18	41.0	50.0	113.9
20	41.0	50.0	102.5
22	41.0	50.0	92.5
24	41.0	50.0	83.8
26	41.0	50.0	76.2
28	41.0	50.0	69.7
30	41.0	49.9	64.1
32	41.0	45.0	59.2
34	41.0	40.8	55.0
35	40.5	38.8	53.0
36	38,8	37.1	51.3
38	35.6	33.9	48.1
40	32.7	31.0	45.2
42	30.0	28.3	42.5
44	27.3	25.6	39.8
46	24.6	22.9	37.1
48	22.0	20.3	34.5

Weight rotator 3.5 t
Weight fully automatic (telescopic) spreader 9 t
Weight twin lift spreader 10.7 t

Lifting capacity 84 t

	Spreader operation under		Hook operation on the ropes
Outreach	Single lift	Twin lift	Heavy lift
(m)	(t)	(t)	(t)
11	41.0	50.0	84.0
12	41.0	50.0	84.0
13	41.0	50.0	84.0
14	41.0	50.0	84.0
16	41.0	50.0	84.0
18	41.0	50.0	84.0
20	41.0	50.0	84.0
23	41.0	50.0	84.0
24	41.0	50.0	83.8
26	41.0	50.0	76.2
28	41.0	50.0	69.7
30	41.0	50.0	64.1
32	41.0	46.0	59.2
34	41.0	41.8	55.0
35	41.0	39.8	53.0
36	39.8	38.1	51.3
38	36.6	34.9	48.1
40	33.7	32.0	45.2
42	31.0	29.3	42.5
44	28.3	26.6	39.8
46	25.6	23.9	37.1
48	23.0	21.3	34.5

Weight rotator 2.5 t
Weight fully automatic (telescopic) spreader 9 t
Weight twin lift spreader 10.7 t

Standard configuration – Turnover up to 32 cycles per hour
Pactronic® – Turnover up to 38 cycles per hour

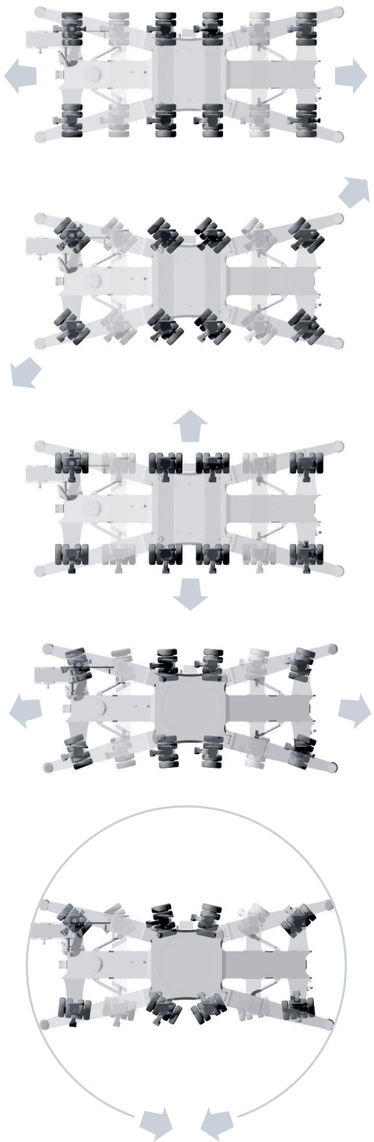
Precision to perfection: With incredibly short acceleration times for all crane motions, Liebherr is the top performer in container handling.

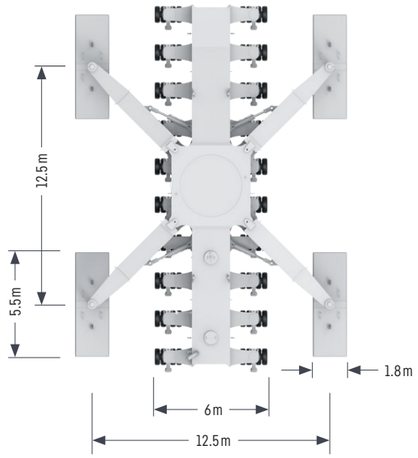
Undercarriage

Mobility
- Outstanding mobility and manoeuvrability
- Curves at any possible radii and even slewing on the spot

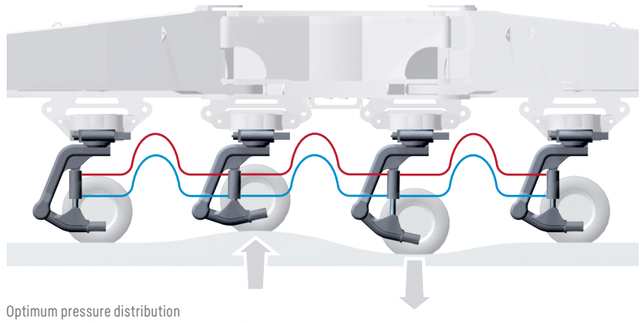
Modular propping system
- Minimised stress and strain of undercarriage due to cruciform support base which directs the load path from boom tip to quay
- Modular system allows further reduction of quay loads by installing additional axle sets
- Easy adaptation to various sizes of support pads and bases

Schematic diagram





Hydraulic load distribution
- Hydraulic suspension avoids overloading of individual wheel sets
- Standard trailer tyres making requisition of spares economical and time-saving
- Increased lifetime of tyres due to individually steerable wheel sets



Optimum pressure distribution
and adaption of wheel sets on uneven surfaces

Technical Data

Capacity and Classification

	Capacity	Classification
Four rope grab operation	≤ 52t	A8
Motor grab operation	≤ 52t	A8
Container operation	≤ 52t	A8
Four rope grab operation	≤ 60t	A7
Container operation	≤ 57t	A7
Heavy lift operation	≤ 124t	A3

Main Dimensions

Min. to max. outreach	11 – 48m	
Height of boom fulcrum	17.8m	
Tower cabin height (eye level)	24.0m	
Overall height (top of tower)	32.8m	
Overall length of undercarriage	20.0m	
Overall width of undercarriage	6.0m	
	Bulk	**Container**
Number of axle sets (standard)	16	16
Number of axle sets (optional)	24	24

Working Speeds

Hoisting / lowering	0 – 120m/min
Slewing	0 – 1.6rpm
Luffing (average horizontal speed)	0 – 56m/min
Travelling	0 – 5km/h

Propping Arrangements

Standard supporting base	12.5m x 12.5m
Standard pad dimension	5.5m x 1.8m
Standard supporting area of pads	9.9m²

Optional size of supporting pads and bases on request

Quay Load Arrangements

	Bulk	Container
Uniformly distributed load	1.9t/m²	1.9t/m²
Max. load per tyre	6.0t	5.8t

Due to a unique undercarriage design the quay loads specified above can even be reduced. Pad sizes, supporting base and the number of axle sets can easily be adapted to comply with the most stringent quay load restrictions.

Weight

	Bulk	Container
Total weight of crane LHM 420	approx. 342t	approx. 371t

Hoisting Heights

Above quay at minimum radius	45.0m
Above quay at maximum radius	29.0m
Below quay level (approx.)	12.0m

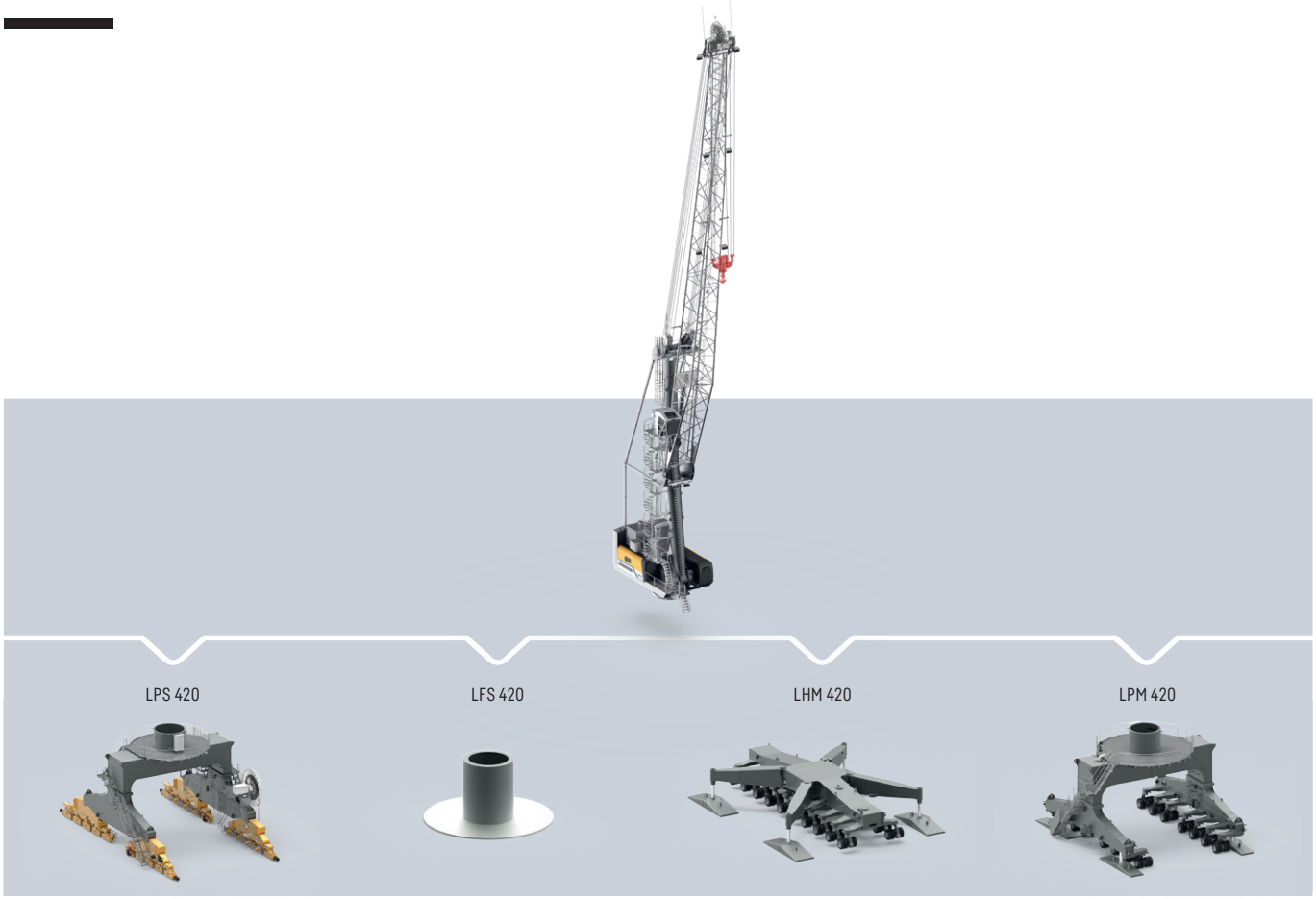
Noise emissions and vibrations

Emission sound pressure level LPA in the cabin	69.3dB(A)
Guaranteed sound power level LWA oft he machine	110dB(A)
Vibrations on upper limbs of the machine operator	< 2.5m/s²
Vibrations on the entire body of machine operator	< 0.5m/s²

Optional Equipment

Additional products and services
- Electric drive with high or low voltage connection
- Fully biodegradable hydraulic fluids
- HVO 100 certified drives
- Pactronic® – power by accumulator and electronics
- SmartGrip – intelligent grabbing
- Anti-sway system
- Teach-In – semi-automatic point to point system
- Sycratronic® – synchronizing crane control system
- Vertical Line Finder – diagonal pull preventing system
- Collision alert system
- LiDAT® smartApp
- Economy software – for optimised fuel consumption
- Video monitoring system
- Radio remote control
- Autopropping undercarriage
- Cyclone air-intake system for the engine
- Low temperature package
- Customer-specific painting & logo
- Additional (driven) axle sets
- Axle sets equipped with foamed tyres
- Different supporting bases and pad sizes
- And many more as per customers´ requirements

Practical Solutions



Liebherr develops and produces special designs and solutions to meet customer-specific requirements

The Liebherr Portal Crane (LPS) is an efficient combination of a space-saving portal (mounted on rails) and the proven mobile harbour crane concept. Particularly on narrow quays, individual portal solutions permit (railway) trains and (road) trucks to travel below the portal.

Liebherr Fixed Slewing Cranes (LFS) are an efficient combination of a mobile harbour crane upper carriage and a fixed pedestal. LFS cranes provide an economical and space-saving solution for the installation on quaysides and jetties, especially where room for manoeuvring is limited and low ground pressure is essential. Additionally LFS solutions are also ideally suited for the installation on crane barges.

The Liebherr Portal Mobile Crane (LPM) is the perfect combination of a space-saving portal undercarriage, efficient mobile harbour crane technology and unrestricted mobility. A gantry on rubber tyres enables the crane to be travelled from one quay to another. Supporting pads allow the crane to be used on quays with or without rail tracks. The LPM offers the same 360-degree mobility as the LHM. Driving in longitudinal, diagonal or transverse direction. Performance of conventional steering or slewing on the spot is possible and provided as standard.

Liebherr-MCCtec Rostock GmbH • Liebherrstraße 1 • 18147 Rostock, Germany • Phone +49 381 6006-5020 • Fax +49 381 6006-3999
mobile.harbour.crane@liebherr.com • www.liebherr.com • www.linkedin.com/company/liebherr-maritime-cranes

HM 3513.03.04 MCR-10558651-06.25_en