

# CONTAINER CRANE DATA

Type, capacity, performance, geometry, design crane loads, and design wharf loads of recent container cranes from various manufacturers for various Ports.

October 2, 2003

## General

Manufacturer	ZPMC	ZPMC	Concept	ZPMC	ZPMC	IMPESA	ZPMC	Mitsui	Noell	Samsung	MHI
Year	2003	2004	2003	2000	2000	1999	1999	1998	1998	1992-2000	1998
Location	Yantian International Terminals	Virginia Port Authority	Port of Los Angeles	Ceres Paragon Terminal	Port of Oakland	Operadora Portuaria de Manzanillo	Virginia Port Authority	Port of Long Beach	Port of Los Angeles	Port of Everglades	Singapore
Description	A-Frame	A-Frame - Elevating Girder	Low Profile	A-Frame	A-Frame	A-Frame	A-Frame	A-Frame	A-Frame	Low Profile	A-Frame
Girder type	Twin	Twin	Truss	Twin	Twin	Single	Twin	Twin	Single	Truss	Single
Machinery or Rope trolley	RT	RT	RT	RT	RT	RT	RT	RT	MT	RT	MT
Rated load under spreader	60	65	60	64	65	50	50	50	50	40	40
Lifted load under cargo beam	70	80	100	98.4	100	60	60	60	60	57	

## Performance - Design

Main Hoist w/ Load	mpm	70.0	90.0	75.0	70.0	70.1	52.0	75.0	61.0	51.8	54.9	70.0
Lowering w/ Load	mpm	70.0	90.0	75.0	70.0	70.1	62.5	86.0	70.1	62.5	54.9	70.0
Hoisting w/ Spreader	mpm	150.0	180.0	180.0	180.0	152.4	122.0	160.0	131.1	111.3	115.8	170.0
Lowering w/ Spreader	mpm	150.0	180.0	180.0	180.0	152.4	122.0	160.0	131.1	111.3	115.8	170.0
Trolley Speed	mpm	240.0	244.0	244.0	250.0	243.8	244.0	243.8	243.8	243.8	182.9	210.0
Gantry Speed	mpm	50.0	46.0	46.0	45.0	45.7	46.0	45.7	45.7	45.7	45.7	46.0
Boom Hoist Time	minutes	5.0	4.0 to 45 deg	n.a.	3.0 to 45 deg, 5.0 to 80 deg	3.0 to 45 deg, 6.0 to 80 deg	5.0	4.0 to 45 deg	3.0	3.0	n.a.	3.0

## Crane Geometry

Outreach to Waterside rail	m	65.00	70.50	61.50	61.00	65.00	47.20	61.27	50.29	48.80	44.40	55.47
Gage	m	30.00	30.48	30.48	30.48	30.48	16.76	30.48	30.48	30.48	30.48	30.48
Backreach to Landside rail	m	22.00	22.87	23.00	15.00	18.29	15.24	22.86	15.24	15.24	13.72	21.00
Lift Height above Rail	m	42.20	40.00	36.6 / 42.8	36.00	35.05	33.50	36.58	33.53	33.53	32.31	34.66
Total Lift	m	59.00	58.30	55.1 / 61.3	50.00	53.34	48.80	54.90	51.82	51.82	47.24	49.65
Clear Height at Portal	m	16.50	16.80	15.25	17.00	18.29	14.00	16.90	15.24	12.19	15.24	11.60
Clearance between Legs	m	18.30	18.30	18.30	18.25	18.29	18.00	18.29	18.29	18.29	18.29	17.00
Bumper to Bumper distance	m	25.50	27.00	25.90	26.50	25.91	25.90	26.98	26.98	26.98	26.37	24.20
Average Wheel Spacing	m	1.50	1.50	1.50	1.30	1.50	1.09	1.50	1.15	1.31	1.49	
Tiedown Spacing	m	19.60	22.80	17.80				22.50				

## Liftech Design Data <sup>2</sup>

DL, Crane weight	t	1440	1790	1850 <sup>4</sup>	1200	1250	950	1100	1050	1050	1270	1125
TL, Trolley load	t	26.8	35.0	37.0	31.0	22.5	17.8	24.8	20.8	65.0	22.7	90.0
LS, Lift system load	t	18.0	21.0	18.0	18.0	16.8	17.0	17.0	16.8	16.8	20.4	15.0
LL, Lifted Load	t	61.0	66.1	66.1	65.0	66.0	50.8	50.8	50.8	50.8	40.6	40.6
LLF, Fatigue Lifted Load	t	32.0	38.1	38.1	37.5	30.5	30.5	30.5	30.5	30.5	40.6	40.6
TL+LS+LL	t	105.8	122.1	121.1	114.0	105.3	85.6	92.6	88.4	132.6	83.7	145.6
Design Duty Cycles	million	4.0	2.0	4.0	3.5	2.6	3.5	2.0	3.5	3.5	4.0	2.0

1) Additional data will be added periodically.

2) Design data based on calculations. Actual values may differ.

3) See next "Crane Operating Terms.PDF" for definitions of terms.

4) Includes 360 t ballast

5) Duty cycle = trolley movement from wharf to water and back to wharf

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