

# EFL453

## HIGH CAPACITY ELECTRIC COUNTERBALANCED FORKLIFT 4.5T

 4500 kg
  3000 mm
  96 V Li-Ion



Ideal for construction materials, logistics, and steel industries, the EFL453 handles heavy loads with precision and control. Its large wheels, sealed components, and weather-resistant design make it equally capable indoors or outdoors, replacing internal combustion forklifts in high-demand operations.

SPECIFICATION	REF	UNIT	VALUE
Battery type			Li-Ion
Battery nominal capacity		Ah	560
Battery voltage		V	96
Load capacity	Q	kg	4500
Load centre distance	c	mm	500
Service weight		kg	6900
Retracted mast height	$h_1$	mm	2250
Lift height	$h_3$	mm	3000
Height, mast extended	$h_4$	mm	4177/3835
Overall length		mm	4125
Overall width	$b_1/b_2$	mm	1495
Length to face of forks	$I_2$	mm	3055
Fork dimensions	s/e/l	mm	50×150×1070
Turning radius		Wa	2680
Load distance, centre of drive axle to fork		mm	545
Wheelbase		mm	2000

# Features

---

## Powerful 96V Li-ion Battery (560 Ah)

Delivers consistent high performance and long operating time for heavy-duty cycles with fast charging capability.

## Superior Hydraulic System

Provides smooth, precise control with excellent lifting and lowering speed under all load conditions.

## Safety Assured: Battery, motor protection, monitoring and mast buffering

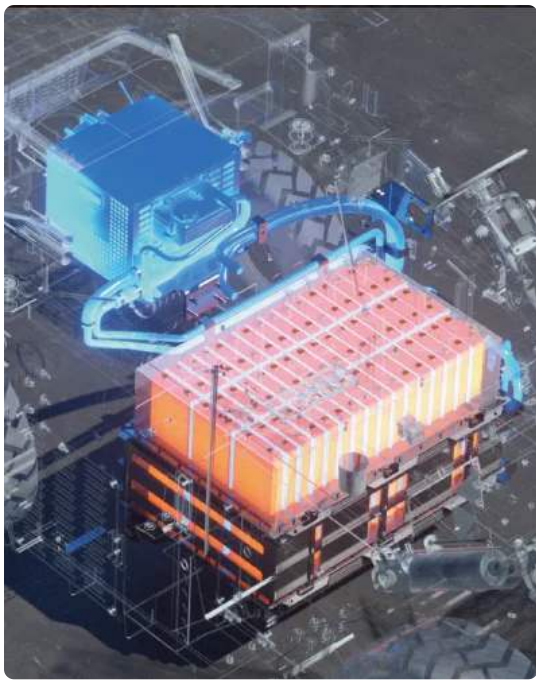
PMSM employ multiple protective measures to ensure safe operations including overcharge protection, over-temperature monitoring, short-circuit protection, etc. minimizing the risk of potential hazards and maximizing operational safety.

The central controlling module- VCU (Vehicle Control Unit) extends the safety of the forklifts. VCU provides precise control and real-time monitoring of critical parameters to ensure the truck operates within safe limits.

It also features turn speed control, which adjusts the forklift's speed based on the turning angle, ensuring stability during turns. An over-speed alarm alerts the operator if the forklift exceeds the safe speed limit.\*

The high-capacity forklift mast is equipped with a hydraulic buffering system that ensures smooth lifting and lowering of loads. With controlled deceleration, the fork movement is smooth with no abrupt stops that could damage the load or cause operator discomfort. This feature enhances operational safety and prolongs the lifespan of the mast components.





## Low maintenance: Longer battery life span

Operating at a higher voltage allows the battery to be designed with fewer individual cells. With fewer components and a simpler design, the risk of battery failure is lowered.

Thanks to advanced BMS (Battery Management System) which helps to regulate and monitor high-voltage battery, these batteries tend to have a longer life than low-voltage lithium batteries, reducing the need of battery replacement.

The brushless, simple rotor design of PMSM eliminates mechanical wear from brushes and commutators. This durable, low-friction construction requires minimal periodic maintenance, reducing associated labor costs and downtime.

## VDI Chart

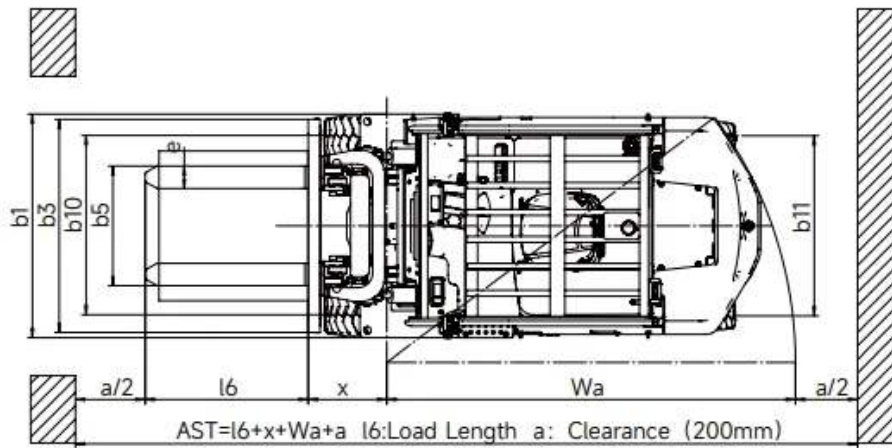
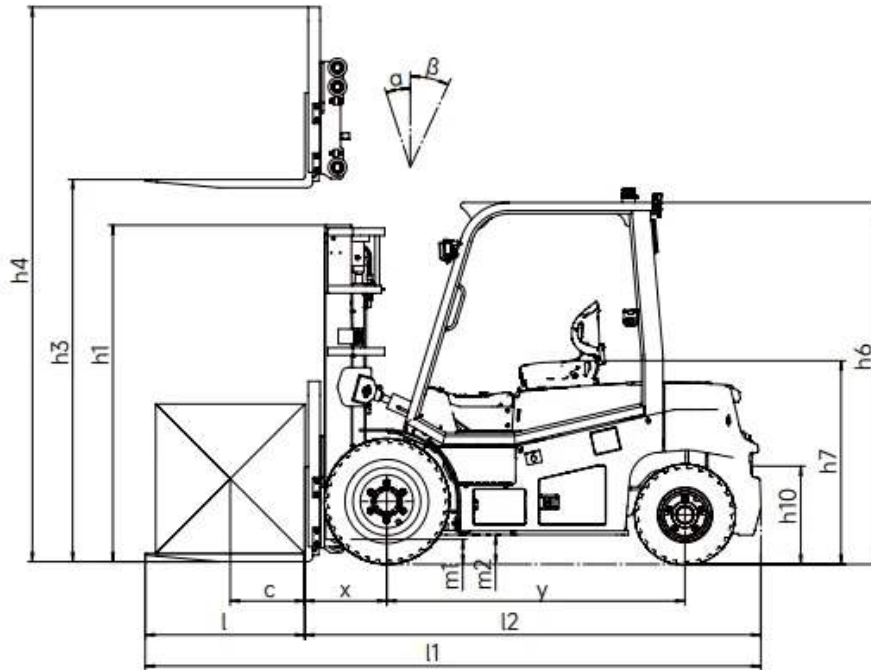
	SPECIFICATION	REF	UNIT	VALUE
1.5	Load capacity	Q	kg	4500
1.6	Load centre distance	c	mm	500
1.8	Load distance, centre of drive axle to fork		mm	545
1.9	Wheelbase		mm	2000
2.1	Service weight		kg	6900
2.2	Axle loading, laden front/rear		kg	10267/1133
2.3	Axle loading, unladen front/rear		kg	3415/3485
3.1	Tyre type			充气胎
3.2	Tyre size, front			300-15-20PR
3.3	Tyre size, rear			7.00-12-12PR
3.5	Additional wheels (castor wheels)			2
3.5	Wheels, number front/rear (x=drive wheels)			2x/2
3.6	Tread width, front	b <sub>10</sub>	mm	1176
3.7	Tread width, rear	b <sub>11</sub>	mm	1190
4.1	Tilt of mast/fork carriage forward/backward		°	6/12
4.10	Height of wheel arms		mm	1290
4.12	Tow coupling height		mm	640
4.13	Loading height, unladen			2250
4.15	Lowered height			2400

SPECIFICATION		REF	UNIT	VALUE
4.19	Overall length		mm	4125
4.2	Retracted mast height	$h_1$	mm	2250
4.2.1	Overall height			4177
4.20	Length to face of forks	$I_2$	mm	3055
4.21	Overall width	$b_1/b_2$	mm	1495
4.22	Fork dimensions	s/e/l	mm	50×150×1070
4.23	A,B Fork carriage class/type A, B			3A
4.24	Fork carriage width		mm	1380 (1424)
4.3	Free lift		mm	150
4.31	Ground clearance, laden, below mast		mm	150
4.32	Ground clearance, centre of wheelbase		mm	180
4.34.1	Aisle width for pallets 1000×1200 crossways		Ast	4495
4.34.2	Aisle width for pallets 800×1200 lengthways		Ast	4495
4.35	Turning radius		Wa	2680
4.36	Internal turning radius			2680
4.4	Lift height	$h_3$	mm	3000
4.4.1	Max lift height		mm	7000
4.5	Height, mast extended	$h_4$	mm	4177/3835
4.6	Initial lift		mm	150
4.7	Height of overhead guard (cabin)		mm	2400
4.8	Seat height/standing height		mm	1290
5.1	Travel speed, laden/unladen		km/h	24/25
5.10	Service brake			Hydraulic
5.11	Parking brake			Mechanical
5.2	Lifting speed, laden/unladen		m/s	0.43/0.53
5.3	Lowering speed, laden/unladen		m/s	0.41/0.42
5.8	Max. gradeability, laden/unladen		%	25/28
6.1	Drive motor rating S2 60 min		kW	30
6.2	Lift motor rating at S3 15%		kW	27.8
6.4	Battery nominal capacity		Ah	560
6.4	Battery voltage		V	96
6.4.1	Battery type			Li-Ion
6.5	Battery weight		kg	473
8.1	Type of drive control			PMSM
10.5	Steering design			Hydraulic

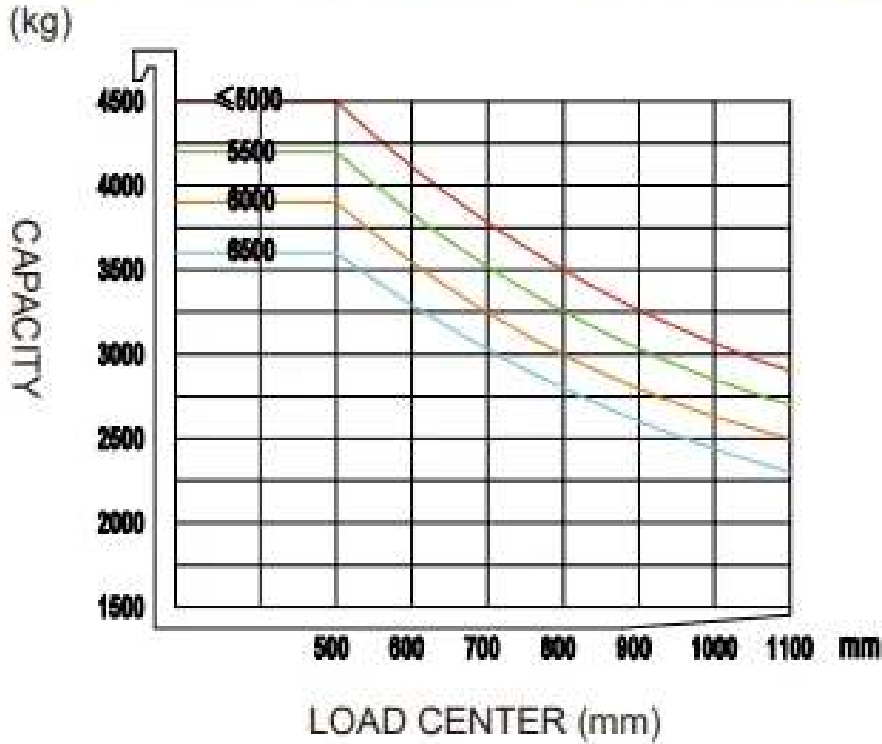
10.7 Sound pressure level at the drivers ear

dB(A) /

## VDI Drawing



## EFL453-HV RATED CAPACITIES AND LOAD CENTERES GRAPH



## Mast Options

MAST TYPE	LIFT HEIGHT (H3, MM)	MAST LOWERED HEIGHT (H1, MM)	MAST EXTENDED HEIGHT, NO BACKREST (H4, MM)	MAST EXTENDED HEIGHT, WITH BACKREST (H4, MM)	FREE LIFT HEIGHT, NO BACKREST (H2, MM)	FREE LIFT HEIGHT, WITH BACKREST (H2, MM)
2-Standard Mast	3000	2250	3835	4177	150	150
2-Standard Mast	3500	2500	4335	4677	150	150
2-Standard Mast	4000	2750	4835	5177	150	150
2-Standard Mast	4500	3050	5385	5677	150	150
2-Standard Mast	5000	3300	5885	6177	150	150
2-Standard Mast	5500	3600	6435	6677	150	150
2-Standard Mast	6000	3850	6935	7177	150	150
2-Standard Mast	6500	4150	7485	7677	150	150
2-Free Mast	3000	2250	-	4244	860	1364
2-Free Mast	3500	2500	-	4744	1110	1614

MAST TYPE	LIFT HEIGHT (H3, MM)	MAST LOWERED HEIGHT (H1, MM)	MAST EXTENDED HEIGHT, NO BACKREST (H4, MM)	MAST EXTENDED HEIGHT, WITH BACKREST (H4, MM)	FREE LIFT HEIGHT, NO BACKREST (H2, MM)	FREE LIFT HEIGHT, WITH BACKREST (H2, MM)
2-Free Mast	4000	2750	-	5244	-	-
3-Free Mast	4500	2247	5242	5677	1525	1091
3-Free Mast	5000	2413	5742	6177	1692	1258
3-Free Mast	5500	2580	6242	6677	1859	1425
3-Free Mast	6000	2797	6792	7177	2026	1642
3-Free Mast	6500	2963	7292	7677	2193	1809
3-Free Mast	7000	3130	7792	8177	2360	1976

## Options

ITEM	OPTIONS (optional items marked in yellow)
Fork dimension	1070mm forks (500mm LC) /1220mm forks (600mm LC)   Customized fork length/non-standard accessories   Hook-on forks
Fork carriage width option	1424mm   Customized fork carriage width
Backrest height	Fork backrest with hook on type fork   Customized fork backrest
Attachments	Hook-on sideshifter   Hook-on fork positioner with sideshifter   Fork positioner: Pin-type forks
Battery capacity	309V173Ah LFP battery
Charger	20kw (3 phase AC 370V-460V, 50-60HZ, 32A plug)   40kw (3 phase AC 370V-460V, 50-60HZ, 63A plug)
Buzzer	Yes
OPS system	Yes
Telematics	Yes
Overhead guard	Standard overhead guard
Heating system during lithium battery charging	Yes
Rear armrest horn	Yes   Upgrade mechanical suspension seat with armrest + headrest + safety belt switch