

Technical sheet :

# **ES 412 LE**

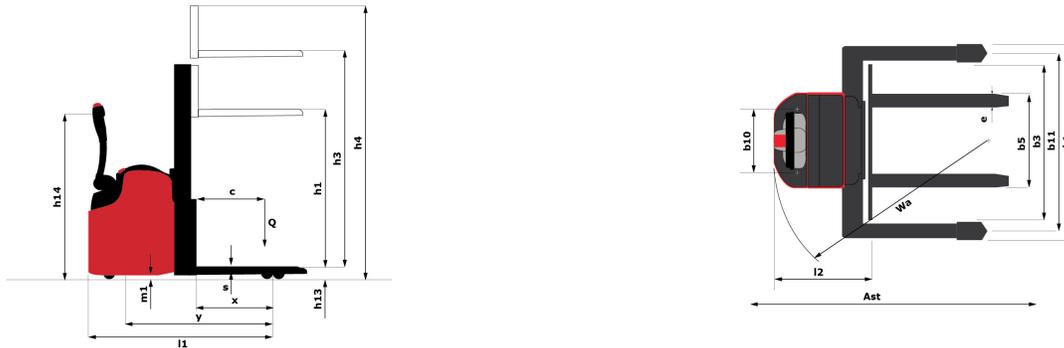
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Technical characteristics			Metric	Imperial
1.1	Manufacturer		Manitou	Manitou
1.2	Model Name		ES 412 LE	ES 412 LE
1.3	Power source		Battery	Battery
1.4	Operator type		Pedestrian	Pedestrian
1.5	Max. capacity	Q	1200 kg	2646 lbs
1.6	Load centre of gravity	c	600 mm	23.622 in
1.8	Distance from Load backrest to center of rear axle	x	683 mm	2240 ft 10 in
1.9	Wheelbase	y	1245 mm	49.016 in
Weight				
2.1	Service Weight		924 kg	2037 lbs
2.2	Weight on front axle (laden) / rear axle (laden)		743 kg / 1381 kg	1638 lbs / 3045 lbs
2.3	Weight on front axle (Unladen) / rear axle (Unladen)		612 kg / 262 kg	1349 lbs / 578 lbs
Wheels				
3.1	Tyres type		Polyurethane	Polyurethane
3.2	Number of drive wheels / Size of drive wheels		1x230x75	1x230x75
3.3	Number of load wheels / Size of load wheels		2 / 82x70	2 / 82x70
3.4	Number of castor wheels / Dimensions of castor wheels		1 / 1	1 / 1
3.4	Number of stabilizer wheels / Size of the stabilizer wheels		2 / 125x50	2 / 125x50
3.5	Number of front wheels / rear wheels		2 / 2	2 / 2
3.6	Front wheel gauge	b10	517 mm	20.354 in
3.7	Rear wheel gauge	b11	978 mm	38.504 in
Dimensions				
4.2	Height mast Lowered	h1	1940 mm	76.378 in
4.4	Lifting Height	h3	2940 mm	115.748 in
4.5	Height mast extended	h4	3365 mm	132.48 in
4.9	Height tiller up max.	h14	1050 mm	41.339 in
4.15	Fork height in low position	h13	85 mm	3.346 in
4.19	Overall length	l1	1870 mm	73.622 in
4.20	Length to face of forks	l2	720 mm	28.346 in
4.21	Overall width	b1	1106 mm	43.543 in
4.22	Forks section / width / length	s / e / l	60 mm / 180 mm / 1150 mm	2.362 in / 7.087 in / 45.276 in
4.24	Fork carriage width	b3	680 mm	26.772 in
4.31	Ground clearance below mast	m1	35 mm	1.378 in
4.32	Ground clearance at centre of wheelbase	m2	20 mm	65 ft 7 in
Performances				
5.1	Travel speed (laden / unladen)		6 km/h / 6 km/h	3.7 mph / 3.7 mph
5.2	Lifting speed (laden / unladen)		0.12 m/s / 0.24 m/s	0.39 ft/s / 0.79 ft/s
5.3	Lowering speed (laden / unladen)		0.3 m/s / 0.2 m/s	0.98 ft/s / 0.66 ft/s
5.8	Max Gradeability (laden / unladen)		8 % / 10 %	8 % / 10 %
5.9	Service brake		Electro magnetic	Electro magnetic
Engine				
6.1	Drive motor rating S2 60 min		1.2 kW	1.2 kW
6.2	Lift motor rating at S3 15%		3 kW	3 kW
6.3	Battery according to DIN 43531/35/36 A, B, C		DIN 43535-B	DIN 43535-B

	Engine			
6.4	Battery / Batteries capacity		24 V / 180 Ah	24 V / 180 Ah
6.5	Battery weight (+/- 5%)		176 kg	388 lbs
	Miscellaneous			
8.1	Type of drive control		AC	AC
8.4	Sound level at the driver's ear according to DIN 12 053		65 dB(A)	65 dB(A)

# Dimensional drawing



## Characteristics of masts and residual capacities

Full Visibility Duplex		FVD 29	FVD 34	FVD 38
h3 - Mast lifting height	mm	2940	3440	3840
h1 - Mast height lowered	mm	1940	2190	2390
h4 - Mast height extended	mm	3365	3865	4265
Residual capacity at max height	kg	1200	1200	1200

Free Lift Duplex		FLD 29	FLD 34
h3 - Mast lifting height	mm	2935	3435
h2 - Mast free lift	mm	1510	1760
h1 - Mast height lowered	mm	1940	2190
h4 - Mast height extended	mm	3365	3865
Residual capacity at max height	kg	1200	1200
Height at max capacity	mm	2935000	3435000

Free Lift Triplex		FLT 42
h3 - Mast lifting height	mm	4240
h2 - Mast free lift	mm	1470
h1 - Mast height lowered	mm	1960
h4 - Mast height extended	mm	4730
Residual capacity at max height	kg	1200
Height at max capacity	mm	4240000



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