

Technical sheet :

# ES 412 ET

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	Technical characteristics		Metric
1.1	Manufacturer		Manitou
1.2	Model Name		ES 412 ET
1.3	Power source		Electrical
1.4	Operator type		Pedestrian
1.5	Max. capacity	Q	1200 kg
1.6	Load center of gravity	c	600 mm
1.8	Distance from Load backrest to center of rear axle	x	684 mm
1.9	Wheelbase	y	1246 mm
	<b>Weight</b>		
2.1	Service weight		874 kg
2.2	Weight on front axle (laden) / rear axle (laden)		729 kg / 1342 kg
2.3	Weight on front axle (Unladen) / rear axle (Unladen)		612 kg / 262 kg
	<b>Wheels</b>		
3.1	Tires type		Polyurethane
3.3	Number of load wheels / Size of load wheels		2 / 82x68
3.4	Number of stabilizer wheels / Size of the stabilizer wheels		1 / 125x70
3.5	Number of front wheels / rear wheels		2 / 2
3.5.2	Number of drive wheels / Size of drive wheels		1/230x75
3.6	Front wheel gauge	b10	517 mm
3.7	Rear wheel gauge	b11	380 mm
	<b>Dimensions</b>		
4.15	Fork height in low position	h13	86 mm
4.19	Overall length	l1	1875 mm
4.20	Length to face of forks	l2	724 mm
4.21	Overall width	b1	832 mm
4.22	Forks section / width / length	s / e / l	180 mm / 60 mm / 1150 mm
4.24	Fork carriage width	b3	680 mm
4.31	Ground clearance below mast	m1	35 mm
4.32	Ground clearance at centre of wheelbase	m2	30 mm
4.35	Turning radius	Wa	1470 mm
	<b>Performances</b>		
5.1	Travel speed (laden / unladen)		6 km/h / 6 km/h
5.2	Lifting speed (laden / unladen)		0.10 m/s / 0.16 m/s
5.3	Lowering speed (laden / unladen)		0.14 m/s / 0.12 m/s
5.8	Max Gradeability (laden / unladen)		8 % / 10 %
5.10	Service brake		Electro magnetic
	<b>Engine</b>		
6.1	Drive motor rating S2 60 min		1 kW
6.2	Lift motor rating at S3 15%		2 kW
6.3	Battery according to DIN 43531/35/36 A, B, C		DIN 43535-B
6.4	Battery voltage / capacity		24 V / 160 Ah
6.5	Battery weight (+/- 5%)		165 kg
	<b>Miscellaneous</b>		
8.1	Type of drive control		AC
8.4	Sound level at the driver's ear according to DIN 12 053		65 dB

## ES 412 ET - Dimensional drawing



## Characteristics of masts and residual capacities

Central Cylinder Duplex (CCD)		CCD 26	CCD 29	CCD 34
h1 - Mast lowered height	mm	1780	1930	2180
h2 - Mast free lift	mm	140	140	140
h3 - Mast lifting height	mm	2630	2930	3430
h4 - Mast extended height	mm	3065	3365	3865
Residual capacity at max height	kg	1200	1200	1000

Central Cylinder Simplex (CCS)		CCS 15	CCS 17
h1 - Mast lowered height	mm	1930	2180
h2 - Mast free lift	mm	1500	1750
h3 - Mast lifting height	mm	1500	1750
h4 - Mast extended height	mm	1930	2180
Residual capacity at max height	kg	1200	1200



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