

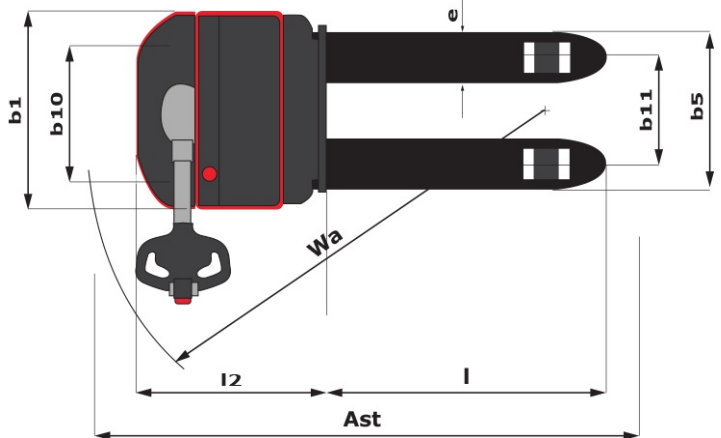
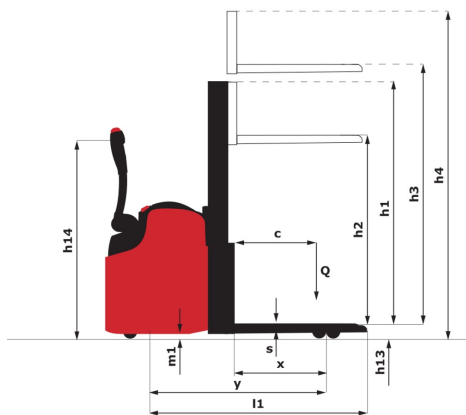
Technical sheet :

ES 412



	Technical characteristics		Metric
1.1	Manufacturer		Manitou
1.2	Model Name		ES 412
1.3	Power source		Battery
1.4	Operator type		Pedestrian
1.5	Max. capacity	Q	1200 kg
1.6	Load centre of gravity	c	600 mm
1.8	Distance from Load backrest to center of rear axle	x	683 m
1.9	Wheelbase	y	1245 mm
	Weight		
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
	Wheels		
3.1	Tyres type		Polyurethane
3.5.2	Number of drive wheels - Size of drive wheels		1 x 230x70
3.3	Number of load wheels - Size of load wheels		2 x 82x70
3.4	Number of stabilizer wheels / Size of the stabilizer wheels		1 x 125x50
3.5	Number of front wheels / rear wheels		2 / 2
3.6	Front wheel gauge	b10	517 mm
3.7	Rear wheel gauge	b11	380 mm
	Dimensions		
4.2	Mast height lowered	h1	1940 mm
4.4	Mast lifting height *	h3	2940 mm
4.5	Mast height extended	h4	3365 m
4.15	Fork height in low position	h13	85 mm
4.19	Overall length	l1	1870 mm
4.20	Length to face of forks	l2	720 mm
4.21	Overall width	b1	800 mm
4.22	Forks section / width / length	s / e / l	60 mm x 180 mm / 1150 mm
4.24	Fork carriage width	b3	680 m
4.31	Ground clearance below mast	m1	35 m
4.32	Ground clearance at centre of wheelbase	m2	20 m
4.33	Aisle width for 1000 x 1200 pallet widthways	Ast	2200 m
4.34	Aisle width for 800 x 1200 pallet lengthways	Ast	2222 m
4.35	Turning radius	Wa	1400 mm
	Performances		
5.1	Travel speed (laden / unladen)		6 km/h / 6 km/h
5.2	Lifting speed (laden / unladen)		0.12 m/s / 0.24 m/s
5.3	Lowering speed (laden / unladen)		0.3 m/s / 0.2 m/s
5.7	Gradeability (laden / unladen)		8 % / 10 %
5.10	Service brake		Electro magnetic
	Engine		
6.1	Drive motor rating S2 60 min		1.2 kW
6.2	Lift motor rating at S3 15%		3 kW
6.4	Battery / Batteries capacity		24 V - 180 Ah
6.5	Battery weight (+/- 5%)		160 kg
	Miscellaneous		
8.1	Type of drive control		AC
8.4	Sound level at the driver's ear according to DIN 12 053		65 dB(A)

Dimensional drawing

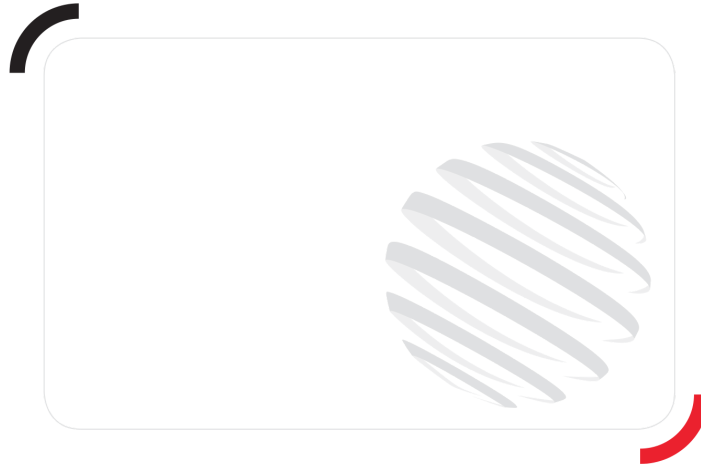


Characteristics of masts and residual capacities

Full Visibility Duplex		FVD 29	FVD 34	FVD 38
h1 - Height mast lowered *	mm	1940	2129	2390
h3 - Lifting Height	mm	2940	3440	3840
h4 - Height mast extended *	mm	3365	3865	4265
Residual capacity without attachment (Industrial load chart)	kg	1200	1000	800

Free Lift Duplex		FLD 29	FLD 34
h1 - Height mast lowered *	mm	1940	2190
h2 - Free lift	mm	1510	1760
h3 - Lifting Height	mm	2935	3435
h4 - Height mast extended *	mm	3653	3865
Residual capacity without attachment (Industrial load chart)	kg	1200	1000

Free Lift Triplex		FLT 42
h1 - Height mast lowered *	mm	1960
h2 - Free lift	mm	1470
h3 - Lifting Height	mm	4240
h4 - Height mast extended *	mm	4730
Residual capacity without attachment (Industrial load chart)	kg	650



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