

Technical sheet :

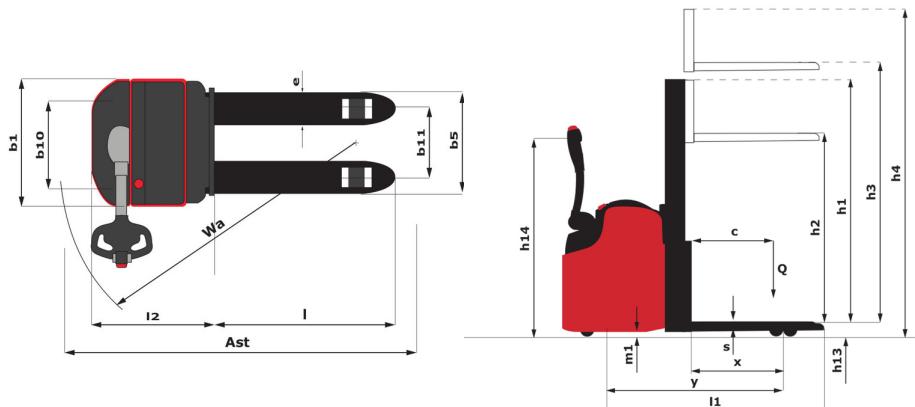
# ES 820



 **MANITOU**  
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Technical characteristics		Metric	
1.1	Manufacturer		Manitou
1.2	Model Name		ES 820
1.3	Power source		Electrical - Lead
1.4	Operator type		Pedestrian
1.5	Max. capacity	Q	2000 kg
1.6	Load center of gravity	c	600 mm
1.8	Distance from Load backrest to center of rear axle	x	661 mm
1.9	Wheelbase	y	1378 mm
Weight		Weight	
2.1	Service weight		1620 kg
2.2	Weight on front axle (laden) / rear axle (laden)		1180 kg / 2510 kg
2.3	Weight on front axle (Unladen) / rear axle (Unladen)		1125 kg / 495 kg
Wheels		Wheels	
3.1	Tires type		Polyurethane cushion
3.3	Number of load wheels / Size of load wheels		2 / 82x68
3.4	Number of stabilizer wheels / Size of the stabilizer wheels		2 / 120x50
3.5	Number of front wheels / rear wheels		3 / 4
3.5.2	Number of drive wheels / Size of drive wheels		1/254x100
3.6	Front wheel gauge	b10	664 mm
3.7	Rear wheel gauge	b11	393 mm
Dimensions		Dimensions	
4.15	Fork height in low position	h13	82 mm
4.19	Overall length	l1	2048 mm
4.20	Length to face of forks	l2	898 mm
4.21	Overall width	b1	890 mm
4.22	Forks section / width / length	s / e / l	70 mm / 185 mm / 1150 mm
4.24	Fork carriage width	b3	700 m
4.31	Ground clearance below mast	m1	30 mm
4.32	Ground clearance at centre of wheelbase	m2	25 mm
4.33	Aisle Width for pallets 1000 x 1200 crossways	Ast	2469 mm
4.34	Aisle width for 800 x 1200 pallet lengthways	Ast	2448 mm
4.35	Turning radius	Wa	1591 mm
4.9	Height tiller min. / max.	h14 / h14	975 mm / 1375 mm
Performances		Performances	
5.1	Travel speed (laden / unladen)		6 km/h / 6 km/h
5.2	Lifting speed (laden / unladen)		0.11 m/s / 0.20 m/s
5.3	Lowering speed (laden / unladen)		0.21 m/s / 0.22 m/s
5.8	Max Gradeability (laden / unladen)		6 % / 10 %
5.10	Service brake		Electro magnetic
Engine		Engine	
6.1	Drive motor rating S2 60 min		2 kW
6.2	Lift motor rating at S3 15%		4 kW
6.3	Battery according to DIN 43531/35/36 A, B, C		Traction
6.4	Battery voltage / capacity		24 V / 315 Ah
6.5	Battery weight (+/- 5%)		273 kg
Miscellaneous		Miscellaneous	
8.1	Type of drive control		AC
8.4	Sound level at the driver's ear according to DIN 12 053		65 dB

## ES 820 - Dimensional drawing



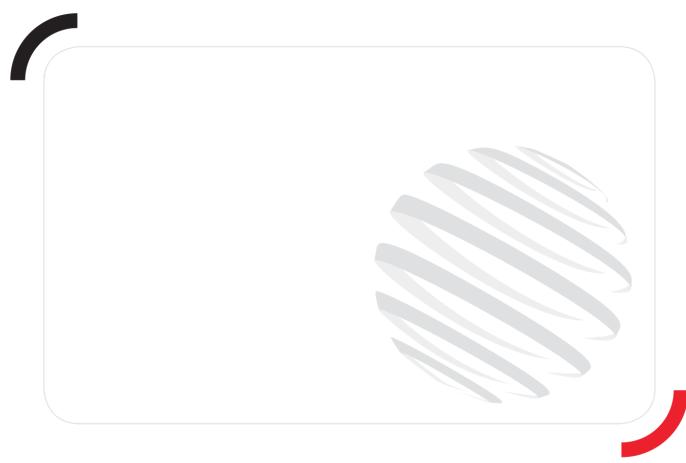
## Characteristics of masts and residual capacities

Central Cylinder Duplex (CCD)	FVD 29	FVD 34
h1 - Mast lowered height	mm 1940	mm 2190
h3 - Mast lifting height	mm 2940	mm 3440
h4 - Mast extended height	mm 3365	mm 3865
Residual capacity at max height	kg 1600	kg 1300

Central Cylinder Simplex (CCS)	CCS 15	CCS 17
h1 - Mast lowered height	mm 1940	mm 2190
h2 - Mast free lift	mm 1510	mm 1760
h3 - Mast lifting height	mm 1510	mm 1760
h4 - Mast extended height	mm 1940	mm 2190
Residual capacity at max height	kg 2000	kg 2000

Free Lift Duplex (FLD)	FLD 29	FLD 34
h1 - Mast lowered height	mm 1940	mm 2190
h2 - Mast free lift	mm 1510	mm 1760
h3 - Mast lifting height	mm 2935	mm 3435
h4 - Mast extended height	mm 3365	mm 3865
Residual capacity at max height	kg 1600	kg 1300

Free Lift Triplex (FLT)	FLT 42	FLT 47	FLT 54
h1 - Mast lowered height	mm 1900	mm 2060	mm 2300
h2 - Mast free lift	mm 1465	mm 1625	mm 1875
h3 - Mast lifting height	mm 4245	mm 4725	mm 5455
h4 - Mast extended height	mm 4710	mm 5190	mm 5880
Residual capacity at max height	kg 750	kg 550	kg 450



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