

Technical sheet :

ES 412



 **MANITOU**
HANDLING YOUR WORLD

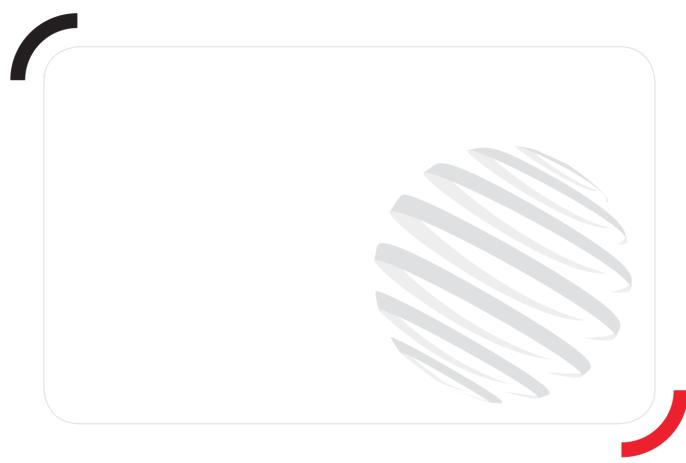
| Technical characteristics | | Metric | |
|---------------------------|---|---------------|--------------------------|
| 1.1 | Manufacturer | | Manitou |
| 1.2 | Model Name | | ES 412 |
| 1.3 | Power source | | Electrical - Lead |
| 1.4 | Operator type | | Pedestrian |
| 1.5 | Max. capacity | Q | 1200 kg |
| 1.6 | Load center of gravity | c | 600 mm |
| 1.8 | Distance from Load backrest to center of rear axle | x | 683 mm |
| 1.9 | Wheelbase | y | 1245 mm |
| Weight | | 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 | | Wheels | |
| 3.1 | Tires type | | Polyurethane cushion |
| 3.3 | Number of load wheels / Size of load wheels | | 2 / 82x70 |
| 3.4 | Number of stabilizer wheels / Size of the stabilizer wheels | | 1 / 125x50 |
| 3.5 | Number of front wheels / rear wheels | | 2 / 2 |
| 3.5.2 | Number of drive wheels / Size of drive wheels | | 1/230x70 |
| 3.6 | Front wheel gauge | b10 | 517 mm |
| 3.7 | Rear wheel gauge | b11 | 380 mm |
| Dimensions | | Dimensions | |
| 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 / 180 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 | 20 mm |
| 4.33 | Aisle Width for pallets 1000 x 1200 crossways | Ast | 2581 mm |
| 4.34 | Aisle width for 800 x 1200 pallet lengthways | Ast | 2490 mm |
| 4.35 | Turning radius | Wa | 1400 mm |
| Performances | | 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) | | 0.30 m/s / 0.20 m/s |
| 5.8 | Max Gradeability (laden / unladen) | | 8 % / 10 % |
| 5.10 | Service brake | | Electro magnetic |
| Engine | | Engine | |
| 6.1 | Drive motor rating S2 60 min | | 1.20 kW |
| 6.2 | Lift motor rating at S3 15% | | 3 kW |
| 6.4 | Battery voltage / capacity | | 24 V / 180 Ah |
| 6.5 | Battery weight (+/- 5%) | | 160 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 |

Characteristics of masts and residual capacities

| Full Visibility Duplex (FVD) | FVD 29 | FVD 34 | FVD 38 |
|---------------------------------|--------|--------|--------|
| h1 - Mast lowered height | mm | 1940 | 2190 |
| h3 - Mast lifting height | mm | 2940 | 3440 |
| h4 - Mast extended height | mm | 3365 | 3865 |
| Residual capacity at max height | kg | 1200 | 1000 |
| | | 2390 | 4265 |
| | | 3840 | |
| | | 1000 | 800 |

| Free Lift Duplex (FLD) | FLD 29 | FLD 34 |
|---------------------------------|--------|--------|
| h1 - Mast lowered height | mm | 1940 |
| h2 - Mast free lift | mm | 1510 |
| h3 - Mast lifting height | mm | 2935 |
| h4 - Mast extended height | mm | 3365 |
| Residual capacity at max height | kg | 1200 |
| | | 2190 |
| | | 1760 |
| | | 3435 |
| | | 3865 |
| | | 1000 |

| Free Lift Triplex (FLT) | FLT 42 |
|---------------------------------|--------|
| h1 - Mast lowered height | mm |
| h2 - Mast free lift | mm |
| h3 - Mast lifting height | mm |
| h4 - Mast extended height | mm |
| Residual capacity at max height | kg |
| | 1965 |
| | 1470 |
| | 4240 |
| | 4735 |
| | 650 |



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