

Technical sheet :

ES 412



| Technical characteristics | | | Metric |
|---------------------------|---|-----------|--------------------------|
| 1.1 | Manufacturer | | Manitou |
| 1.2 | Model Name | | ES 412 |
| 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 | 683 mm |
| 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 | Tires type | | Polyurethane |
| 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 | | | |
| 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 |
| 4.35 | 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) | | 0.30 m/s / 0.20 m/s |
| 5.8 | Max Gradeability (laden / unladen) | | 8 % / 10 % |
| 5.10 | Service brake | | Electro magnetic |
| 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 | | | |
| 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 | 2390 |
| h3 - Mast lifting height | mm | 2940 | 3440 | 3840 |
| h4 - Mast extended height | mm | 3365 | 3865 | 4265 |
| Residual capacity at max height | kg | 1200 | 1000 | 800 |

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

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

**Head Office**

B.P. 249 - 430 rue de l'Aubinière

44150 Ancenis Cedex - France

Tel: +33 (0)2 40 09 10 11 - Fax: +33 (0)2 40 09 10 97

www.manitou.com

This publication provides a description of the configuration versions and options for Manitou products, which may differ for equipment. The equipment presented in this brochure may be part of a series, as an option, or it may not be available, depending on the versions. Manitou reserves the right, at any time and without notice, to amend the specifications described and represented. The specifications provided do not bind the manufacturer. For more details, please contact your Manitou agent. This is not a contractually binding document. The presentation of the products is not contractually binding. List of specifications non-exhaustive. The logos as well as the visual identity of the company are owned by Manitou and cannot be used without authorisation. All rights reserved. The photos and diagrams contained in this brochure are only provided for consultation and information purposes.

MANITOU BF SA - Limited company with board of directors - Share capital: 39,668,399 euros - 857 802 508 RCS Nantes