

Technical sheet :

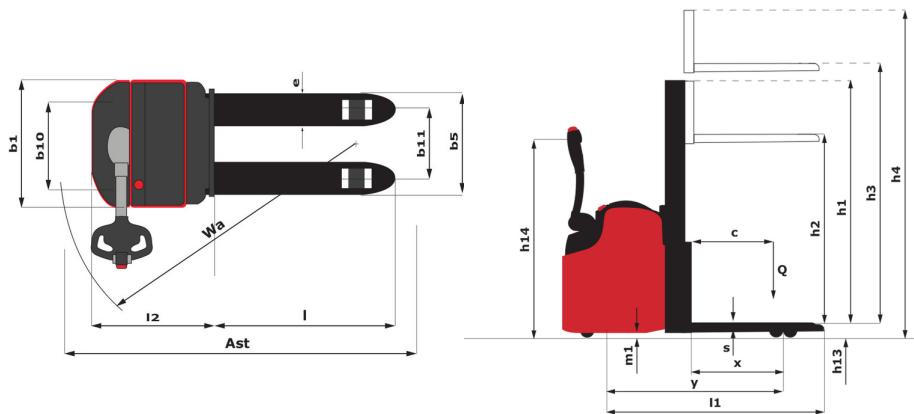
# ES 412 ET



 **MANITOU**  
HANDLING YOUR WORLD

| Technical characteristics |   | Metric    |                          |
|---------------------------|---|-----------|--------------------------|
| 1.1                       | Manufacturer  |           | Manitou                  |
| 1.2                       | Model Name  |           | ES 412 ET                |
| 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         | 684 mm                   |
| 1.9                       | Wheelbase   | y         | 1246 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 cushion     |
| 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                   |
| Dimensions                |   |           |                          |
| 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 m                    |
| 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                  |
| Performances              |   |           |                          |
| 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         |
| Engine                    |   |           |                          |
| 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                   |
| 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 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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