Technical sheet:

## **EMA II 18 HL-2**





| Model Name  |      |   | EMAII IB HL-2 O | eated off Julie 11, 2023 at 11.331 M |
|---|------|---|-----------------|--------------------------------------|
| Model Name  |      | Technical characteristics                               |                 | Metric                               |
| Power source  | 1.1  | Manufacturer  |                 | Manitou                              |
|   | 1.2  | Model Name  |                 | EMA II 18 HL-2                       |
| Max. capacity   | 1.3  | Power source  |                 | Electrical                           |
| Load citation of gravity  Load distance, centre of drive axile to fook  y 1774's mm  Weight  Load citation of gravity  Weight   | 1.4  | Operator type   |                 | Seated                               |
| Load distance, centre of drive axie to fook   x   308 mm   1745   | 1.5  | Max. capacity   | Q               | 1750 kg                              |
| Wheelbase   Wicipht   Service weight  | 1.6  | Load center of gravity                                  | С               | 500 mm                               |
| Weelbase   Weight   Service weight   S  | 1.8  |   | Х               |                                      |
|   | 1.9  |   | ٧               | 1745 mm                              |
| 1.1   Service weight   S700 kg   S  |      |   |                 |                                      |
|   | 2.1  | •   |                 | 8700 kg                              |
|   | 2.2  | •   |                 | *                                    |
|   | 2.3  |   |                 |                                      |
| Times type  | 2.0  | . , , , ,   |                 | 0.00 kg / 0220 kg                    |
| 1.2   Dimensions of front wheels  | 2 1  |   |                 | Solid tires                          |
|   |      |   |                 |                                      |
| 1.5   Number of front wheels / ear wheels   2 / 2   |      |   |                 |                                      |
| 5.2         Number of drive wheels         2           6.6         Front wheel gauge         b10         1110 mm           1.7         Rear wheel gauge         b11         1350 mm           1.7         Helight of overhead guard (cabin)         h6         2260 mm           1.8         Sea theight/stand height         h7         1200 mm           1.9         Overall length         11         3740 mm           2.0         Length to face of foks         12         2590 mm           2.1         Overall width         b1         1350 mm           2.1         Overall width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Forks section / width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Fork seating SIO 3232 (class/form) A/B         2         2           2.4         Fork carriage SIO 3232 (class/form) A/B         33         860 mm           3.1         Ground clearance at centre of wheelbase         m1         50 mm           3.2         Ground clearance at centre of wheelbase         m2         130 mm           3.3         Alsie width for sea to 1000 x 1200 crossways         Ast         20000 mm           4.1         Travel speed (laden / unladen)  |      |   |                 |                                      |
| Front wheel gauge   |      |   |                 |                                      |
| Rear wheel gauge   bil   1350 mm  |      |   | h10             |                                      |
| Dimensions  |      |   |                 |                                      |
|   | 3.7  |   | DII             | 1350 mm                              |
| 1.8         Seat height/stand height         h7         1200 mm           1.9         Overall length         i1         3740 mm           2.0         Length to face of forks         i2         2590 mm           2.1         Overall width         b1         1350 mm           2.2         Fork section / width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Fork carriage width         b3         860 mm           3.1         Ground clearance below mast         m1         50 mm           3.2         Ground clearance at centre of wheelbase         m2         130 mm           3.3         A isle width for allest 1000 x 1200 crosswys         Ast         20000 mm           3.3         A isle width for 800 x 1200 pallet lengthways         Ast         20000 mm           3.4         A isle width for 800 x 1200 pallet lengthways         Ast         20000 mm           3.4         Lifting speed (laden / unladen)         0.35 m/s -0.45 m/s         3.35 m/s -0.45 m/s           3.5         Lowering speed (laden / unladen)         8 ½ / 10.50 %         3.5 m/s -0.45 m/s           3.7         Gradeability (aden / unladen)         9 kW         4.5 m/s -0.45 m/s         3.5 m/s -0.45 m/s           3.1         Dive motor rating s S 50  | 4.7  |   | h.c             | 0060                                 |
| 19   Overall length   |      |   |                 |                                      |
| Length to face of forks   12   2590 mm     Overall width   1350 mm     Fork section / width / length   5 / e /   40 mm x 1150 mm     Fork carriage width   5 / e /   40 mm x 1150 mm     Fork carriage width   5 / e / e / e / e / e / e / e / e / e /  |      |   |                 |                                      |
| 221         Overall width         b 1         1 350 mm           222         Fork section / width / length         s / e / I         40 mm x 125 mm x 1150 mm           23         Fork carriage ISO 2328 (class/fcm) A/B         2         2           24         Fork carriage width         b3         860 mm           31         Ground clearance below mast         m1         50 mm           32         Ground clearance at centre of wheelbase         m2         130 mm           33         Aisle Width for 900 x 1200 pallet lengthways         Ast         2000 mm           34         Aisle width for 800 x 1200 pallet lengthways         Ast         2000 mm           4         Performances         4         2000 mm           5.1         Travel speed (laden / unladen)         Ast         2000 mm           6.2         Lifting speed (laden / unladen)         9 km/h-9.50 km/h         3           6.3         Lowering speed (laden / unladen)         8 % / 10.50 %         3           6.1         Gradeability (laden / unladen)         8 % / 10.50 %         8           6.1         Drive motor rating \$2.60 min         10 kW         4           6.2         Lift motor rating \$2.60 min         10 kW         4         4 kV / 930 Ah   |      | -   |                 |                                      |
| 222         Forks section / width / length         \$ / e / I         40 mm x 125 mm x 1150 mm           233         Fork carriage Width         b3         860 mm           244         Fork carriage width         b3         860 mm           31         Ground clearance at centre of wheelbase         m2         130 mm           32         Ground clearance at centre of wheelbase         m2         130 mm           33         Aisle Width for pallets 1000 x 1200 crossways         Ast         2000 mm           34         Aisle width for 800 x 1200 pallet lengthways         Ast         2200 mm           Performances  |      | Š   |                 |                                      |
| 23         Fork carriage ISO 2328 (class/form) A/B         2           24         Fork carriage width         b3         860 mm           31         Ground clearance at centre of wheelbase         m1         50 mm           32         Ground clearance at centre of wheelbase         m2         130 mm           33         Aisle Width for pallets 1000 x 1200 crossways         Ast         2000 mm           34         Aisle width for 800 x 1200 pallet lengthways         Ast         2200 mm           Performances           Lifting speed (laden / unladen)         9 km/h-9.50 km/h           Lifting speed (laden / unladen)         0.35 m/s-0.45 m/s           Lowering speed (laden / unladen)         0.40 m/s-0.36 m/s           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)         8 % / 10.50 %           Lowering speed (laden / unladen)   | 4.21 |   |                 |                                      |
| Fork carriage width   |      |   | s / e / l       |                                      |
| 331         Ground clearance below mast         m1         50 mm           332         Ground clearance at centre of wheelbase         m2         130 mm           .33         Aisle width for pallets 1000 x 1200 crossways         Ast         2000 mm           .34         Aisle width for pallets 1000 x 1200 pallet lengthways         Ast         22000 mm           .41         Travel speed (laden / unladen)         9 km/h-9.50 km/h         9 km/h-9.50 km/h           .52         Lifting speed (laden / unladen)         0.35 m/s-0.45 m/s         0.40 m/s-0.36 m/s           .33         Lowering speed (laden / unladen)         8 % / 10.50 %         8 % / 10.50 %           .34         Ground clearance below mast         9 km/h-9.50 km/h         0.40 m/s-0.36 m/s           .35         Lifting speed (laden / unladen)         0.35 m/s-0.45 m/s         0.40 m/s-0.36 m/s           .36         Cordeability (laden / unladen)         8 % / 10.50 %         8 % / 10.50 %           .37         Gradeability (laden / unladen)         8 % / 10.50 %         9 km/h-9.50 km/s           .40         Service brake         9 km/h-9.50 km/s         9 km/s           .41         Drive motor rating \$2.50 min         10 kW         9 km/s           .42         Lift motor rating at \$3.15%         8 km/s         48 V / 930 A   |      | , ,   |                 |                                      |
| 32         Ground clearance at centre of wheelbase         m2         130 mm           33         Aisle Width for pallets 1000 x 1200 crossways         Ast         2000 mm           34         Aisle width for 800 x 1200 pallet lengthways         Ast         2200 mm           Performances           1         Travel speed (laden / unladen)         9 km/h-9.50 km/h           5.2         Lifting speed (laden / unladen)         0.35 m/s-0.45 m/s           6.3         Lowering speed (laden / unladen)         8 % / 10.50 %           6.7         Gradeability (laden / unladen)         8 % / 10.50 %           6.10         Service brake         Hydraulic           Engine         10 kW           6.2         Lift motor rating at S3 15%         9 kW           6.3         Battery according to DIN 43531/35/36 A, B, C         DIN 43595           6.4         Battery voltage / capacity         48 V / 930 Ah           6.5         Battery weight (+/- 5%)         1300 kg           Miscellaneous         Mosfet AC speed controller           6.2         Working hydraulic pressure for attachments         200 bar           6.2         Working hydraulic pressure for attachments         200 bar           6.4         Measured/guaranteed mean noise level at the  | 4.24 | ,   |                 |                                      |
| 33       Aisle Width for pallets 1000 x 1200 crossways       Ast       2000 mm         34       Aisle width for 800 x 1200 pallet lengthways       Ast       2000 mm         Performances         5.1       Travel speed (laden / unladen)       9 km/h-9.50 km/h         5.2       Lifting speed (laden / unladen)       0.35 m/s-0.45 m/s         5.3       Lowering speed (laden / unladen)       8 % / 10.50 %         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         5.7       Gradeability (laden / unladen)       9 kW         5.1       Drive motor rating \$2.50 min       10 kW         5.2       Lift motor rating \$2.50 min       10 kW         5.2       Lift motor rating \$2.50 min       10 kW         5.3       Battery voltage / capacity       9 kW         5.4       Battery weight (*/· 5%)       48 V / 930 Ah         5.5       Battery weight (*/· 5%)       1300 kg         6.1       Type of drive control       Mosfet AC speed controller         6.2       Working hydraulic pressure for attachments       200 bar         6.3       Oil flow rate for attachments       25 l/min         6.4 <th< td=""><td>4.31</td><td></td><td></td><td></td></th<>   | 4.31 |   |                 |                                      |
| 34       Aisle width for 800 x 1200 pallet lengthways       Ast       2200 mm         Performances         5.1       Travel speed (laden / unladen)       9 km/h-9.50 km/h         5.2       Lifting speed (laden / unladen)       0.35 m/s-0.45 m/s         5.3       Lowering speed (laden / unladen)       8 / 10.50 %         5.7       Gradeability (laden / unladen)       8 / 10.50 %         5.0       Service brake       Hydraulic         Engine         5.1       Drive motor rating \$2.60 min       10 kW         5.2       Lift motor rating at \$3.15%       9 kW         5.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43595         5.4       Battery voltage / capacity       48 V / 930 Ah         5.5       Battery weight (+/- 5%)       1300 kg         5.5       Battery weight (+/- 5%)       Mosfet AC speed controller         5.1       Type of drive control       Mosfet AC speed controller         5.2       Working hydraulic pressure for attachments       200 bar         5.3       Oil flow rate for attachments       25 l/min         6.4       Measured/guaranteed mean noise level at the ear of the operator       < 73 dB   | 1.32 |   | m2              |                                      |
| Performances  | 1.33 | Aisle Width for pallets 1000 x 1200 crossways           | Ast             | 2000 mm                              |
| 5.1       Travel speed (laden / unladen)       9 km/h-9.50 km/h         5.2       Lifting speed (laden / unladen)       0.35 m/s-0.45 m/s         5.3       Lowering speed (laden / unladen)       0.40 m/s-0.36 m/s         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         5.10       Service brake       Hydraulic         5.1       Dive motor rating \$2 60 min       10 kW         5.2       Lift motor rating at \$3 15%       9 kW         5.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43595         5.4       Battery voltage / capacity       48 V / 930 Ah         5.5       Battery weight (+/- 5%)       1300 kg         6.5       Battery weight (+/- 5%)       1300 kg         6.1       Type of drive control       Mosfet AC speed controller         6.2       Working hydraulic pressure for attachments       200 bar         6.3       Oil flow rate for attachments       25 l/min         6.4       Hydraulic       48 V / 930 Ah         6.5       Battery weight (+/- 5%)       300 bg         6.1       Type of drive control       Mosfet AC speed controller         6.2       Working hydraulic pressure for attachm  | 1.34 | Aisle width for 800 x 1200 pallet lengthways            | Ast             | 2200 mm                              |
| 5.2       Lifting speed (laden / unladen)       0.35 m/s-0.45 m/s         5.3       Lowering speed (laden / unladen)       0.40 m/s-0.36 m/s         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         5.10       Service brake       Hydraulic         Engine         5.1       Drive motor rating \$2.60 min       10 kW         5.2       Lift motor rating at \$3.15%       9 kW         5.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43595         5.4       Battery voltage / capacity       48 V / 930 Ah         5.5       Battery weight (+/- 5%)       1300 kg         Miscellaneous         5.1       Type of drive control       Mosfet AC speed controller         5.2       Working hydraulic pressure for attachments       200 bar         5.2       Working hydraulic pressure for attachments       25 l/min         6.4       Measured/guaranteed mean noise level at the ear of the operator       < 73 dB   |      |   |                 |                                      |
| 3.3       Lowering speed (laden / unladen)       0.40 m/s-0.36 m/s         5.7       Gradeability (laden / unladen)       8 % / 10.50 %         4.10       Service brake       Hydraulic         5.1       Drive motor rating S2 60 min       10 kW         5.2       Lift motor rating at S3 15%       9 kW         5.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43595         5.4       Battery voltage / capacity       48 V / 930 Ah         5.5       Battery weight (+/- 5%)       1300 kg         Miscellaneous       Mosfet AC speed controller         5.1       Type of drive control       Mosfet AC speed controller         5.2       Working hydraulic pressure for attachments       200 bar         5.3       Oil flow rate for attachments       25 l/min         6.4       Measured/guaranteed mean noise level at the ear of the operator       < 73 dB  | 5.1  | Travel speed (laden / unladen)                          |                 | 9 km/h-9.50 km/h                     |
| Gradeability (laden / unladen) Service brake Hydraulic  Engine  1.1 Drive motor rating \$2.60 min 1.2 Lift motor rating at \$3.15% Sattery according to DIN 43531/35/36 A, B, C 1.4 Battery voltage / capacity 1.5 Battery weight (+/-5%) 1.6 Miscellaneous 1.1 Type of drive control 1.2 Working hydraulic pressure for attachments 1.3 Oil flow rate for attachments 1.4 Measured/guaranteed mean noise level at the ear of the operator  Measured/guaranteed mean noise level at the ear of the operator  Hydraulic 1.5 Battery weight (+/-5%) 1300 kg 1300 kg 1500 bar  | 5.2  | Lifting speed (laden / unladen)                         |                 | 0.35 m/s-0.45 m/s                    |
| Service brake   | 5.3  | Lowering speed (laden / unladen)                        |                 | 0.40 m/s-0.36 m/s                    |
| Engine         Image: Composition of the protocol of the proto  | 5.7  | Gradeability (laden / unladen)                          |                 | 8 % / 10.50 %                        |
| Drive motor rating \$2.60 min  Drive | 5.10 | Service brake   |                 | Hydraulic                            |
| Lift motor rating at S3 15% 9 kW  Battery according to DIN 43531/35/36 A, B, C  Battery voltage / capacity 48 V / 930 Ah  Battery weight (+/- 5%) 1300 kg  Miscellaneous 100 Mosfet AC speed controller  Type of drive control Mosfet AC speed controller  Working hydraulic pressure for attachments 200 bar  Oil flow rate for attachments 25 I/min  Measured/guaranteed mean noise level at the ear of the operator < 73 dB  |      | Engine  |                 |                                      |
| Battery according to DIN 43531/35/36 A, B, C  Battery voltage / capacity  Battery weight (+/- 5%)  Miscellaneous  1.1 Type of drive control  Working hydraulic pressure for attachments  Oil flow rate for attachments  Measured/guaranteed mean noise level at the ear of the operator  DIN 43595  48 V / 930 Ah  1300 kg  Mosfet AC speed controller  200 bar  25 I/min  473 dB   | 6.1  | Drive motor rating S2 60 min                            |                 | 10 kW                                |
| Battery voltage / capacity  Battery weight (+/- 5%)  Battery weight (+/- 5%)  Miscellaneous  1.1 Type of drive control  Working hydraulic pressure for attachments  Oil flow rate for attachments  Measured/guaranteed mean noise level at the ear of the operator  48 V / 930 Ah  Mosfet AC speed controller  200 bar  25 I/min  473 dB  | 6.2  | Lift motor rating at S3 15%                             |                 | 9 kW                                 |
| Battery weight (+/- 5%)  Miscellaneous  1.1 Type of drive control  2.2 Working hydraulic pressure for attachments  3.3 Oil flow rate for attachments  4.4 Measured/guaranteed mean noise level at the ear of the operator  1.3 Absolute the same of the operator  1.4 Specification of the same of the operator of the operator of the operator of the same of the same of the operator of the same of the  | 6.3  | Battery according to DIN 43531/35/36 A, B, C            |                 | DIN 43595                            |
| Miscellaneous  1.1 Type of drive control Mosfet AC speed controller  1.2 Working hydraulic pressure for attachments 200 bar  1.3 Oil flow rate for attachments 25 l/min  1.4 Measured/guaranteed mean noise level at the ear of the operator <73 dB   | 6.4  | Battery voltage / capacity                              |                 | 48 V / 930 Ah                        |
| Type of drive control  Wosking hydraulic pressure for attachments  Oil flow rate for attachments  Mosfet AC speed controller  200 bar  25 l/min  Measured/guaranteed mean noise level at the ear of the operator  73 dB   | 6.5  | Battery weight (+/- 5%)                                 |                 | 1300 kg                              |
| Working hydraulic pressure for attachments 200 bar  Oil flow rate for attachments 25 l/min  Measured/guaranteed mean noise level at the ear of the operator <73 dB  |      | Miscellaneous   |                 |                                      |
| Oil flow rate for attachments 25 I/min Measured/guaranteed mean noise level at the ear of the operator <73 dB   | 8.1  | Type of drive control                                   |                 | Mosfet AC speed controller           |
| Oil flow rate for attachments 25 I/min Measured/guaranteed mean noise level at the ear of the operator <73 dB   | 8.2  | Working hydraulic pressure for attachments              |                 | 200 bar                              |
| Measured/guaranteed mean noise level at the ear of the operator <73 dB  | 8.3  |   |                 | 25 l/min                             |
| · ·   | 8.4  |   |                 | < 73 dB                              |
|   | 8.4  | Sound level at the driver's ear according to DIN 12 053 |                 | 73 dB                                |

EMA II 18 HL-2 - Dimensional drawing



## Characteristics of masts and residual capacities

| Free Lift Triplex (FLT)  |    | FLT 80 | FLT 84 | FLT 90 | FLT 95 | FLT 100 | FLT 102 | FLT 110 | FLT 120 | FLT 125 | FLT 127 |
|--|----|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| α - Mast/fork carriage tilt,<br>forward                          | ۰  | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 1       | 1       | 1       |
| β - Mast/fork carriage tilt,<br>backward                         | ٠  | 4      | 4      | 4      | 4      | 4       | 4       | 4       | 4       | 4       | 4       |
| h1 - Mast lowered height   | mm | 3720   | 3900   | 4150   | 4270   | 4590    | 4690    | 5000    | 5340    | 5550    | 5570    |
| h2 - Mast free lift  | mm | 2900   | 3080   | 3330   | 3650   | 3770    | 3870    | 4180    | 4520    | 4680    | 4750    |
| h3 - Mast lifting height   | mm | 8010   | 8400   | 9000   | 9500   | 10020   | 10200   | 11010   | 12000   | 12510   | 12720   |
| h4 - Mast extended height  | mm | 8840   | 9230   | 9830   | 10350  | 10850   | 11175   | 11985   | 13005   | 13485   | 13695   |
| Residual capacity with<br>integrated side shift at<br>max heigth | kg | 1250   | 1250   | 1250   | 1100   | 1100    | 1000    | 850     | 750     | 700     | 500     |





## **Head Office**

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