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# MOTIVE POWER BATTERIES MLM - LOW MAINTENANCE

# POWER DESIGN

1

## LID

Exclusive MIDAC design, adapted for push-in plugs, allows the optimal sealing of the terminal posts through special rubber bushes.

## COPERCHIO

Esclusivo design MIDAC, predisposto per tappi a pressione, che consente una sigillatura ottimale dei poli terminali per mezzo di speciali bussole in gomma.

2

## POST

Robust cross-section, with M10 threaded insert designed to ensure high electrical conductivity and the best mechanical characteristics.

## POLO

Sezione maggiorata, con inserto filettato per viti M10 e design atto a garantire un'elevata conducibilità elettrica e le migliori caratteristiche meccaniche.

3

## INTER-CELL CONNECTOR

Exclusive MIDAC design, guarantees the perfect electrical connection between the cells, ensuring full insulation of conductors.

## CONNETTORE INTERCELLA

Esclusivo design MIDAC, garantisce il perfetto collegamento elettrico tra gli elementi, assicurando l'isolamento totale dei conduttori.

4

## SEPARATOR

Microporous polyethylene envelop, to ensure high performance and complete insulation between positive and negative plates, while allowing the free flow of electrolyte throughout the cell.

## SEPARATORE

Busta in polietilene microporoso, per garantire elevate prestazioni e totale isolamento tra placche positive e negative, permettendo libera circolazione dell'elettrolito nella cella.

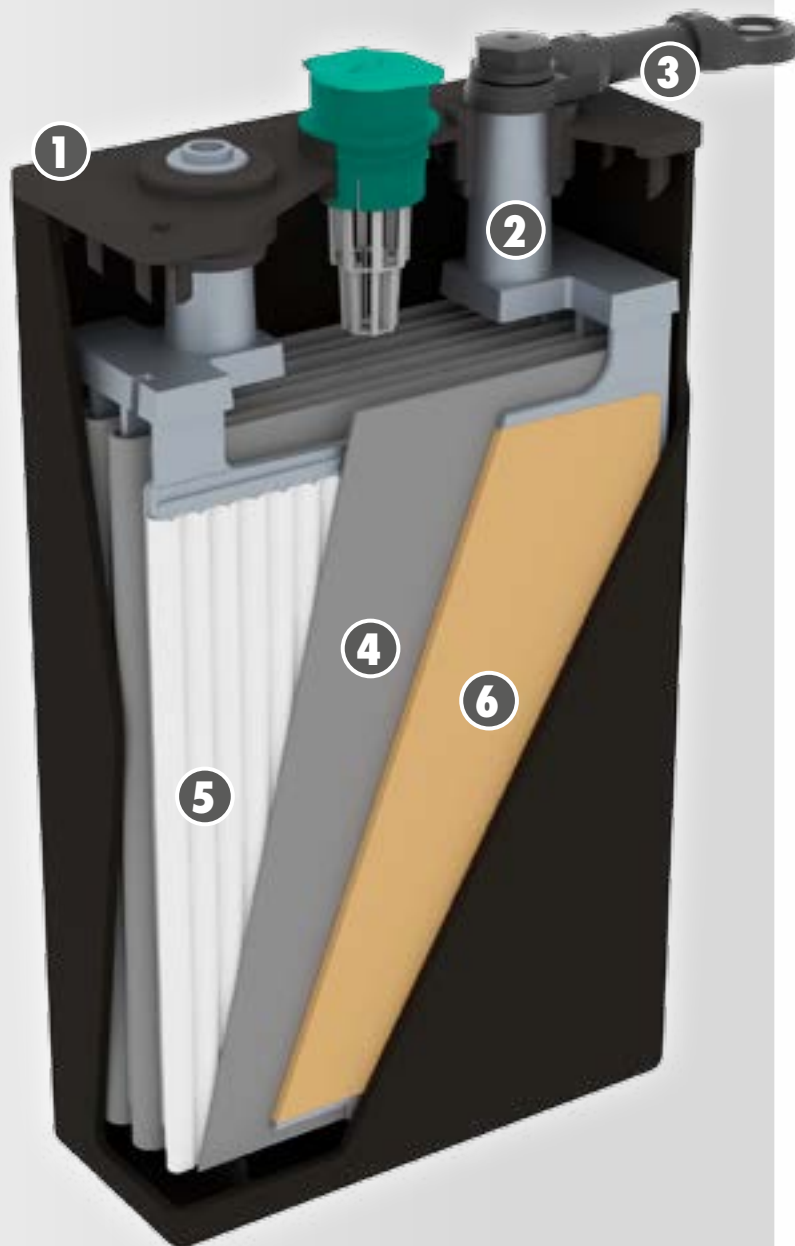
5

## POSITIVE PLATE

Tubular design with state-of-the-art gauntlet technology and special pins-grid produced by die-casting, to give high mechanical characteristics and maximum current carrying capacity.

## PLACCA POSITIVA

Guaina tubolare, avanguardia nella tecnologia, e griglia speciale a spine pressofuse, per conferire ottime caratteristiche meccaniche ed elevata conducibilità elettrica.



6

## NEGATIVE PLATE

Thick with cage design grid for improved holding of the active material and high electrical conductivity.

## PLACCA NEGATIVA

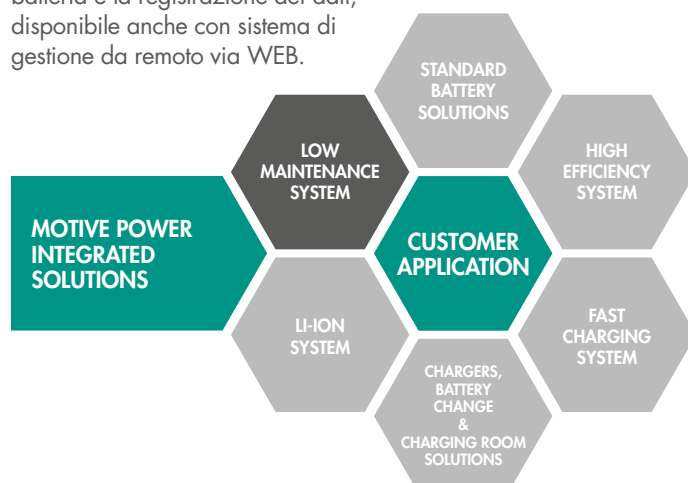
Elevato spessore con griglia a gabbia per il migliore trattenimento della materia attiva ed elevate caratteristiche di conducibilità elettrica.



| PRODUCT SOLUTION         | MLM  |
|--------------------------|--|
| APPLICATION              | Low Maintenance  |
| TECHNOLOGY               | VLA  |
| MAINTENANCE              | quarterly  |
| DESIGN                   | IEC 60254-2 series L-E (2V DIN-BS cells)                                   |
| CAPACITY (C5)            | 100-1550 Ah  |
| INTER-CELL CONNECTIONS   | Bolted (std)   |
| DESIGN LIFE (CYCLES*)    | up to 1500   |
| SINGLE POINT WATERING    | YES  |
| AIR MIXING               | NA   |
| ELECTROLYTE LEVEL SENSOR | YES  |
| CHARGING SOLUTION        | 7 to 12 hrs charging time ONLY with designed High Efficiency (HE) chargers |
| ENERGY PACK CHARGER      | MIDATRON HE  |
| BMU MODULE               | YES  |
| BATTERY CHANGE SOLUTION  | YES  |

**Designed for low water consumption**, the MLM system reduces the need for maintenance to once every 3+ months, through the combination of MLM special battery design, high efficiency charger MIDATRON HE and controlled charging profile by means of the MB2 module (MIDAC Battery Brain), while ensuring a long life up to 1500 cycles even on 80% DoD operation, the optimization of the energy consumption during the charge and the battery monitoring/ data recording, also available by remote WEB management.

**Progettato per basso consumo d'acqua**, il sistema MLM riduce la necessità di manutenzione ad una volta ogni 3+ mesi, mediante la combinazione della speciale configurazione delle batterie MLM con caricabatteria ad elevata efficienza MIDATRON HE ed il profilo di carica controllato per mezzo del modulo MB2 (MIDAC Battery Brain), nel contempo garantendo una vita estesa fino a 1500 cicli anche con utilizzo a profondità di scarica dell'80%, l'ottimizzazione del consumo energetico durante la ricarica ed il monitoraggio della batteria e la registrazione dei dati, disponibile anche con sistema di gestione da remoto via WEB.



(\*) 80% DoD at 30°C with Energy Pack configuration (applicable correcting factors to be considered)

MIDAC S.p.A. reserves the right to carry out at any time any kind of modification to the technical data, to the manufacturing procedures and/or top the range of products, without giving previous written information.

## TECHNICAL DATA AND PERFORMANCES / DATI E PRESTAZIONI

| Cells<br>Elementi |                   |                 | Capacity and discharge rate<br>Capacità e regime di scarica |                     | Nominal Weight<br>Peso Nominale | Overall dimensions<br>Dimensioni d'ingombro |              |              |            |
|-------------------|-------------------|-----------------|---|---------------------|---------------------------------|---|--------------|--------------|------------|
| Range<br>Serie    | Type / Tipo       |                 | in 5 hours / in 5 ore                                       |                     |                                 | X<br>mm                                     | Y<br>mm      | H<br>mm      | h<br>mm    |
|                   | MIDAC             | PzS             | Capacity<br>Capacità  | Current<br>Corrente |                                 |   |              |              |            |
|                   |                   |                 | Ah  | A                   | Kg                              |   |              |              |            |
| <b>MLM<br/>50</b> | <b>2 MLM 50</b>   | 2 PzS 100 L     | <b>100</b>  | 20                  | <b>7,0</b>                      | 46,5  | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>3 MLM 50</b>   | 3 PzS 150 L     | <b>150</b>  | 30                  | <b>9,9</b>                      | 64,5  | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>4 MLM 50</b>   | 4 PzS 200 L     | <b>200</b>  | 40                  | <b>12,8</b>                     | 82,5  | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>5 MLM 50</b>   | 5 PzS 250 L     | <b>250</b>  | 50                  | <b>15,6</b>                     | 100,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>6 MLM 50</b>   | 6 PzS 300 L     | <b>300</b>  | 60                  | <b>18,5</b>                     | 118,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>7 MLM 50</b>   | 7 PzS 350 L     | <b>350</b>  | 70                  | <b>21,3</b>                     | 136,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>8 MLM 50</b>   | 8 PzS 400 L     | <b>400</b>  | 80                  | <b>24,6</b>                     | 154,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>9 MLM 50</b>   | 9 PzS 450 L     | <b>450</b>  | 90                  | <b>27,0</b>                     | 172,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>10 MLM 50</b>  | 10 PzS 500 L    | <b>500</b>  | 100                 | <b>29,9</b>                     | 190,5                                       | <b>197,5</b> | 305          | <b>270</b> |
|                   | <b>MLM<br/>60</b> | <b>2 MLM 60</b> | 2 PzS 120 L   | <b>120</b>          | 24                              | <b>8,3</b>                                  | 46,5         | <b>197,5</b> | 370        |
| <b>3 MLM 60</b>   |                   | 3 PzS 180 L     | <b>180</b>  | 36                  | <b>11,5</b>                     | 64,5  | <b>197,5</b> | 370          | <b>335</b> |
| <b>4 MLM 60</b>   |                   | 4 PzS 240 L     | <b>240</b>  | 48                  | <b>14,9</b>                     | 82,5  | <b>197,5</b> | 370          | <b>335</b> |
| <b>5 MLM 60</b>   |                   | 5 PzS 300 L     | <b>300</b>  | 60                  | <b>17,9</b>                     | 100,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>6 MLM 60</b>   |                   | 6 PzS 360 L     | <b>360</b>  | 72                  | <b>21,6</b>                     | 118,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>7 MLM 60</b>   |                   | 7 PzS 420 L     | <b>420</b>  | 84                  | <b>24,6</b>                     | 136,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>8 MLM 60</b>   |                   | 8 PzS 480 L     | <b>480</b>  | 96                  | <b>27,8</b>                     | 154,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>9 MLM 60</b>   |                   | 9 PzS 540 L     | <b>540</b>  | 108                 | <b>31,1</b>                     | 172,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>10 MLM 60</b>  |                   | 10 PzS 600 L    | <b>600</b>  | 120                 | <b>34,4</b>                     | 190,5                                       | <b>197,5</b> | 370          | <b>335</b> |
| <b>MLM<br/>80</b> |                   | <b>2 MLM 80</b> | 2 PzS 160 L   | <b>160</b>          | 32                              | <b>10,4</b>                                 | 46,5         | <b>197,5</b> | 440        |
|                   | <b>3 MLM 80</b>   | 3 PzS 240 L     | <b>240</b>  | 48                  | <b>14,9</b>                     | 64,5  | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>4 MLM 80</b>   | 4 PzS 320 L     | <b>320</b>  | 64                  | <b>18,9</b>                     | 82,5  | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>5 MLM 80</b>   | 5 PzS 400 L     | <b>400</b>  | 80                  | <b>23,4</b>                     | 100,5                                       | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>6 MLM 80</b>   | 6 PzS 480 L     | <b>480</b>  | 96                  | <b>27,8</b>                     | 118,5                                       | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>7 MLM 80</b>   | 7 PzS 560 L     | <b>560</b>  | 112                 | <b>31,6</b>                     | 136,5                                       | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>8 MLM 80</b>   | 8 PzS 640 L     | <b>640</b>  | 128                 | <b>36,2</b>                     | 154,5                                       | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>9 MLM 80</b>   | 9 PzS 720 L     | <b>720</b>  | 144                 | <b>41,0</b>                     | 172,5                                       | <b>197,5</b> | 440          | <b>405</b> |
|                   | <b>10 MLM 80</b>  | 10 PzS 800 L    | <b>800</b>  | 160                 | <b>45,5</b>                     | 190,5                                       | <b>197,5</b> | 440          | <b>405</b> |

## DIN RANGE

| Cells<br>Elementi  |                    |                  | Capacity and discharge rate<br>Capacità e regime di scarica |                     | Nominal Weight<br>Peso Nominale | Overall dimensions<br>Dimensioni d'ingombro |              |              |            |
|--------------------|--------------------|------------------|---|---------------------|---------------------------------|---|--------------|--------------|------------|
| Range<br>Serie     | Type / Tipo        |                  | in 5 hours / in 5 ore                                       |                     |                                 | X<br>mm                                     | Y<br>mm      | H<br>mm      | h<br>mm    |
|                    | MIDAC              | PzS              | Capacity<br>Capacità  | Current<br>Corrente |                                 |   |              |              |            |
|                    |                    |                  | Ah  | A                   | Kg                              |   |              |              |            |
| <b>MLM<br/>90</b>  | <b>2 MLM 90</b>    | 2 PzS 180 L      | <b>180</b>  | 36                  | <b>11,9</b>                     | 46,5  | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>3 MLM 90</b>    | 3 PzS 270 L      | <b>270</b>  | 54                  | <b>16,6</b>                     | 64,5  | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>4 MLM 90</b>    | 4 PzS 360 L      | <b>360</b>  | 72                  | <b>21,8</b>                     | 82,5  | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>5 MLM 90</b>    | 5 PzS 450 L      | <b>450</b>  | 90                  | <b>26,5</b>                     | 100,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>6 MLM 90</b>    | 6 PzS 540 L      | <b>540</b>  | 108                 | <b>31,7</b>                     | 118,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>7 MLM 90</b>    | 7 PzS 630 L      | <b>630</b>  | 126                 | <b>36,6</b>                     | 136,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>8 MLM 90</b>    | 8 PzS 720 L      | <b>720</b>  | 144                 | <b>41,4</b>                     | 154,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>9 MLM 90</b>    | 9 PzS 810 L      | <b>810</b>  | 162                 | <b>46,5</b>                     | 172,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>10 MLM 90</b>   | 10 PzS 900 L     | <b>900</b>  | 180                 | <b>51,6</b>                     | 190,5                                       | <b>197,5</b> | 500          | <b>465</b> |
|                    | <b>MLM<br/>105</b> | <b>2 MLM 105</b> | 2 PzS 210 L   | <b>210</b>          | 42                              | <b>13,2</b>                                 | 46,5         | <b>197,5</b> | 550        |
| <b>3 MLM 105</b>   |                    | 3 PzS 315 L      | <b>315</b>  | 63                  | <b>19,6</b>                     | 64,5  | <b>197,5</b> | 550          | <b>515</b> |
| <b>4 MLM 105</b>   |                    | 4 PzS 420 L      | <b>420</b>  | 84                  | <b>24,0</b>                     | 82,5  | <b>197,5</b> | 550          | <b>515</b> |
| <b>5 MLM 105</b>   |                    | 5 PzS 525 L      | <b>525</b>  | 105                 | <b>30,4</b>                     | 100,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>6 MLM 105</b>   |                    | 6 PzS 630 L      | <b>630</b>  | 126                 | <b>35,6</b>                     | 118,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>7 MLM 105</b>   |                    | 7 PzS 735 L      | <b>735</b>  | 147                 | <b>39,9</b>                     | 136,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>8 MLM 105</b>   |                    | 8 PzS 840 L      | <b>840</b>  | 168                 | <b>44,8</b>                     | 154,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>9 MLM 105</b>   |                    | 9 PzS 945 L      | <b>945</b>  | 189                 | <b>49,8</b>                     | 172,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>10 MLM 105*</b> |                    | 10 PzS 1050 L    | <b>1050</b>   | 210                 | <b>54,7</b>                     | 190,5                                       | <b>197,5</b> | 550          | <b>515</b> |
| <b>MLM<br/>115</b> |                    | <b>2 MLM 115</b> | 2 PzS 230 L   | <b>230</b>          | 46                              | <b>14,1</b>                                 | 46,5         | <b>197,5</b> | 570        |
|                    | <b>3 MLM 115</b>   | 3 PzS 345 L      | <b>345</b>  | 69                  | <b>20,8</b>                     | 64,5  | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>4 MLM 115</b>   | 4 PzS 460 L      | <b>460</b>  | 92                  | <b>25,8</b>                     | 82,5  | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>5 MLM 115</b>   | 5 PzS 575 L      | <b>575</b>  | 115                 | <b>31,8</b>                     | 100,5                                       | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>6 MLM 115</b>   | 6 PzS 690 L      | <b>690</b>  | 138                 | <b>37,3</b>                     | 118,5                                       | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>7 MLM 115</b>   | 7 PzS 805 L      | <b>805</b>  | 161                 | <b>43,9</b>                     | 136,5                                       | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>8 MLM 115</b>   | 8 PzS 920 L      | <b>920</b>  | 184                 | <b>50,2</b>                     | 154,5                                       | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>9 MLM 115</b>   | 9 PzS 1035 L     | <b>1035</b>   | 207                 | <b>56,3</b>                     | 172,5                                       | <b>197,5</b> | 570          | <b>535</b> |
|                    | <b>10 MLM 115*</b> | 10 PzS 1150 L    | <b>1150</b>   | 230                 | <b>61,8</b>                     | 190,5                                       | <b>197,5</b> | 570          | <b>535</b> |

## DIN RANGE

| Cells Elements     |                     | Capacity and discharge rate<br>Capacità e regime di scarica |                       | Nominal Weight<br>Peso Nominale | Overall dimensions<br>Dimensioni d'ingombro |             |              |              |            |
|--------------------|---------------------|---|-----------------------|---------------------------------|---|-------------|--------------|--------------|------------|
| Range Serie        | Type / Tipo         |   | in 5 hours / in 5 ore |                                 | X mm  | Y mm        | H mm         | h mm         |            |
|                    | MIDAC               | PzS   | Capacity              |                                 |   |             |              |              | Current    |
|                    |                     |   | Capacità              | Corrente                        |   |             |              |              |            |
|                    |                     | Ah  | A                     | Kg                              |   |             |              |              |            |
| MLM 125            | <b>2 MLM 125</b>    | 2 PzS 250 L   | <b>250</b>            | 50                              | <b>14,7</b>                                 | 46,5        | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>3 MLM 125</b>    | 3 PzS 375 L   | <b>375</b>            | 75                              | <b>21,5</b>                                 | 64,5        | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>4 MLM 125</b>    | 4 PzS 500 L   | <b>500</b>            | 100                             | <b>26,8</b>                                 | 82,5        | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>5 MLM 125</b>    | 5 PzS 625 L   | <b>625</b>            | 125                             | <b>33,5</b>                                 | 100,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>6 MLM 125</b>    | 6 PzS 750 L   | <b>750</b>            | 150                             | <b>39,0</b>                                 | 118,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>7 MLM 125</b>    | 7 PzS 875 L   | <b>875</b>            | 175                             | <b>45,3</b>                                 | 136,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>8 MLM 125</b>    | 8 PzS 1000 L  | <b>1000</b>           | 200                             | <b>50,6</b>                                 | 154,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>9 MLM 125</b>    | 9 PzS 1125 L  | <b>1125</b>           | 225                             | <b>56,9</b>                                 | 172,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | <b>10 MLM 125*</b>  | 10 PzS 1250 L   | <b>1250</b>           | 250                             | <b>62,9</b>                                 | 190,5       | <b>197,5</b> | 605          | <b>570</b> |
|                    | MLM 140             | <b>2 MLM 140</b>  | 2 PzS 280 L           | <b>280</b>                      | 56  | <b>18,8</b> | 46,5         | <b>197,5</b> | 730        |
| <b>3 MLM 140</b>   |                     | 3 PzS 420 L   | <b>420</b>            | 84                              | <b>25,4</b>                                 | 64,5        | <b>197,5</b> | 730          | <b>695</b> |
| <b>4 MLM 140</b>   |                     | 4 PzS 560 L   | <b>560</b>            | 112                             | <b>32,7</b>                                 | 82,5        | <b>197,5</b> | 730          | <b>695</b> |
| <b>5 MLM 140</b>   |                     | 5 PzS 700 L   | <b>700</b>            | 140                             | <b>40,5</b>                                 | 100,5       | <b>197,5</b> | 730          | <b>695</b> |
| <b>6 MLM 140</b>   |                     | 6 PzS 840 L   | <b>840</b>            | 168                             | <b>47,8</b>                                 | 118,5       | <b>197,5</b> | 730          | <b>695</b> |
| <b>7 MLM 140</b>   |                     | 7 PzS 980 L   | <b>980</b>            | 196                             | <b>55,0</b>                                 | 136,5       | <b>197,5</b> | 730          | <b>695</b> |
| <b>8 MLM 140</b>   |                     | 8 PzS 1120 L  | <b>1120</b>           | 224                             | <b>62,2</b>                                 | 154,5       | <b>197,5</b> | 730          | <b>695</b> |
| <b>9 MLM 140</b>   |                     | 9 PzS 1260 L  | <b>1260</b>           | 252                             | <b>69,5</b>                                 | 172,5       | <b>197,5</b> | 730          | <b>695</b> |
| <b>10 MLM 140*</b> |                     | 10 PzS 1400 L   | <b>1400</b>           | 280                             | <b>76,7</b>                                 | 190,5       | <b>197,5</b> | 730          | <b>695</b> |
| MLM 155N           |                     | <b>2 MLM 155N</b>   | 2 PzS 310 L           | <b>310</b>                      | 62  | <b>18,9</b> | 46,5         | <b>197,5</b> | 750        |
|                    | <b>3 MLM 155N</b>   | 3 PzS 465 L   | <b>465</b>            | 93                              | <b>26,1</b>                                 | 64,5        | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>4 MLM 155N</b>   | 4 PzS 620 L   | <b>620</b>            | 124                             | <b>33,1</b>                                 | 82,5        | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>5 MLM 155N</b>   | 5 PzS 775 L   | <b>775</b>            | 155                             | <b>40,1</b>                                 | 100,5       | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>6 MLM 155N</b>   | 6 PzS 930 L   | <b>930</b>            | 186                             | <b>47,8</b>                                 | 118,5       | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>7 MLM 155N</b>   | 7 PzS 1085 L  | <b>1085</b>           | 217                             | <b>57,5</b>                                 | 136,5       | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>8 MLM 155N</b>   | 8 PzS 1240 L  | <b>1240</b>           | 248                             | <b>62,5</b>                                 | 154,5       | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>9 MLM 155N</b>   | 9 PzS 1395 L  | <b>1395</b>           | 279                             | <b>72,6</b>                                 | 172,5       | <b>197,5</b> | 750          | <b>720</b> |
|                    | <b>10 MLM 155N*</b> | 10 PzS 1550 L   | <b>1550</b>           | 310                             | <b>80,4</b>                                 | 190,5       | <b>197,5</b> | 750          | <b>720</b> |

\* Double Pillar (CT)  
Doppio Polo (CT)

## BS RANGE

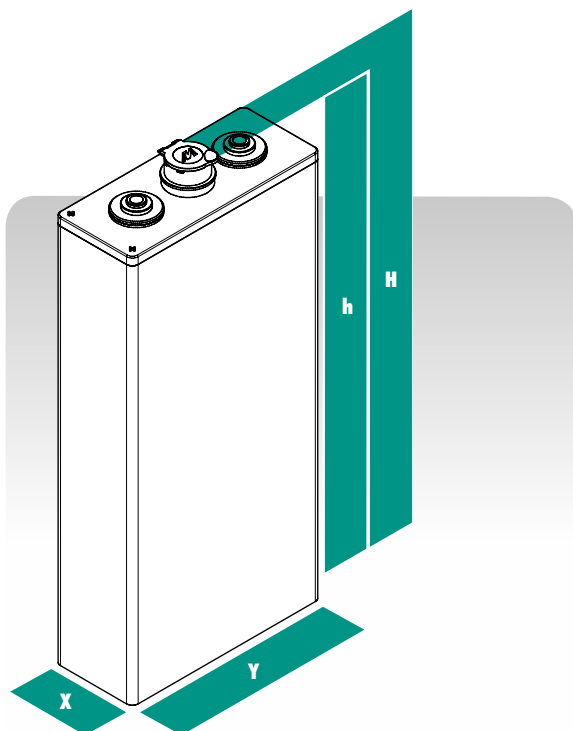
| Cells<br>Elementi |             |            | Capacity and discharge rate<br>Capacità e regime di scarica |                     | Nominal Weight<br>Peso Nominale | Overall dimensions<br>Dimensioni d'ingombro |         |         |         |
|-------------------|-------------|------------|---|---------------------|---------------------------------|---|---------|---------|---------|
| Range<br>Serie    | Type / Tipo |            | in 5 hours / in 5 ore                                       |                     |                                 | X<br>mm                                     | Y<br>mm | H<br>mm | h<br>mm |
|                   | MIDAC       | PzB        | Capacity<br>Capacità  | Current<br>Corrente |                                 |   |         |         |         |
|                   |             |            | Ah  | A                   |                                 |   |         |         |         |
|                   |             |            |   | Kg                  |                                 |   |         |         |         |
| MLM-E<br>55       | 2 MLM-E 55  | 2 PzB 110  | 110   | 22                  | 8,4                             | 45  | 157,5   | 432     | 402     |
|                   | 3 MLM-E 55  | 3 PzB 165  | 165   | 33                  | 11,5                            | 61  | 157,5   | 432     | 402     |
|                   | 4 MLM-E 55  | 4 PzB 220  | 220   | 44                  | 14,6                            | 77  | 157,5   | 432     | 402     |
|                   | 5 MLM-E 55  | 5 PzB 275  | 275   | 55                  | 17,8                            | 93  | 157,5   | 432     | 402     |
|                   | 6 MLM-E 55  | 6 PzB 330  | 330   | 66                  | 20,9                            | 109   | 157,5   | 432     | 402     |
|                   | 7 MLM-E 55  | 7 PzB 385  | 385   | 77                  | 24,1                            | 125   | 157,5   | 432     | 402     |
|                   | 8 MLM-E 55  | 8 PzB 440  | 440   | 88                  | 27,2                            | 141   | 157,5   | 432     | 402     |
|                   | 9 MLM-E 55  | 9 PzB 495  | 495   | 99                  | 30,3                            | 157   | 157,5   | 432     | 402     |
|                   | 10 MLM-E 55 | 10 PzB 550 | 550   | 110                 | 33,5                            | 173   | 157,5   | 432     | 402     |
|                   | MLM-E<br>65 | 2 MLM-E 65 | 2 PzB 130   | 130                 | 26                              | 9,5   | 45      | 157,5   | 484     |
| 3 MLM-E 65        |             | 3 PzB 195  | 195   | 39                  | 12,9                            | 61  | 157,5   | 484     | 454     |
| 4 MLM-E 65        |             | 4 PzB 260  | 260   | 52                  | 16,5                            | 77  | 157,5   | 484     | 454     |
| 5 MLM-E 65        |             | 5 PzB 325  | 325   | 65                  | 20,0                            | 93  | 157,5   | 484     | 454     |
| 6 MLM-E 65        |             | 6 PzB 390  | 390   | 78                  | 23,5                            | 109   | 157,5   | 484     | 454     |
| 7 MLM-E 65        |             | 7 PzB 455  | 455   | 91                  | 27,0                            | 125   | 157,5   | 484     | 454     |
| 8 MLM-E 65        |             | 8 PzB 520  | 520   | 104                 | 30,4                            | 141   | 157,5   | 484     | 454     |
| 9 MLM-E 65        |             | 9 PzB 585  | 585   | 117                 | 33,9                            | 157   | 157,5   | 484     | 454     |
| 10 MLM-E 65       |             | 10 PzB 650 | 650   | 130                 | 37,4                            | 173   | 157,5   | 484     | 454     |
| MLM-E<br>75       |             | 2 MLM-E 75 | 2 PzB 150   | 150                 | 30                              | 10,3  | 45      | 157,5   | 543     |
|                   | 3 MLM-E 75  | 3 PzB 225  | 225   | 45                  | 14,3                            | 61  | 157,5   | 543     | 513     |
|                   | 4 MLM-E 75  | 4 PzB 300  | 300   | 60                  | 18,2                            | 77  | 157,5   | 543     | 513     |
|                   | 5 MLM-E 75  | 5 PzB 375  | 375   | 75                  | 22,4                            | 93  | 157,5   | 543     | 513     |
|                   | 6 MLM-E 75  | 6 PzB 450  | 450   | 90                  | 26,2                            | 109   | 157,5   | 543     | 513     |
|                   | 7 MLM-E 75  | 7 PzB 525  | 525   | 105                 | 29,7                            | 125   | 157,5   | 543     | 513     |
|                   | 8 MLM-E 75  | 8 PzB 600  | 600   | 120                 | 34,5                            | 141   | 157,5   | 543     | 513     |
|                   | 9 MLM-E 75  | 9 PzB 675  | 675   | 135                 | 38,1                            | 157   | 157,5   | 543     | 513     |
|                   | 10 MLM-E 75 | 10 PzB 750 | 750   | 150                 | 42,1                            | 173   | 157,5   | 543     | 513     |
|                   | MLM-E<br>85 | 2 MLM-E 85 | 2 PzB 170   | 170                 | 34                              | 12,1  | 45      | 157,5   | 597     |
| 3 MLM-E 85        |             | 3 PzB 255  | 255   | 51                  | 16,6                            | 61  | 157,5   | 597     | 567     |
| 4 MLM-E 85        |             | 4 PzB 340  | 340   | 68                  | 20,4                            | 77  | 157,5   | 597     | 567     |
| 5 MLM-E 85        |             | 5 PzB 425  | 425   | 85                  | 25,6                            | 93  | 157,5   | 597     | 567     |
| 6 MLM-E 85        |             | 6 PzB 510  | 510   | 102                 | 27,9                            | 109   | 157,5   | 597     | 567     |
| 7 MLM-E 85        |             | 7 PzB 595  | 595   | 119                 | 31,7                            | 125   | 157,5   | 597     | 567     |
| 8 MLM-E 85        |             | 8 PzB 680  | 680   | 136                 | 34,7                            | 141   | 157,5   | 597     | 567     |
| 9 MLM-E 85        |             | 9 PzB 765  | 765   | 153                 | 39,2                            | 157   | 157,5   | 597     | 567     |
| 10 MLM-E 85       |             | 10 PzB 850 | 850   | 170                 | 43,0                            | 173   | 157,5   | 597     | 567     |

# MLM-E

## BS RANGE

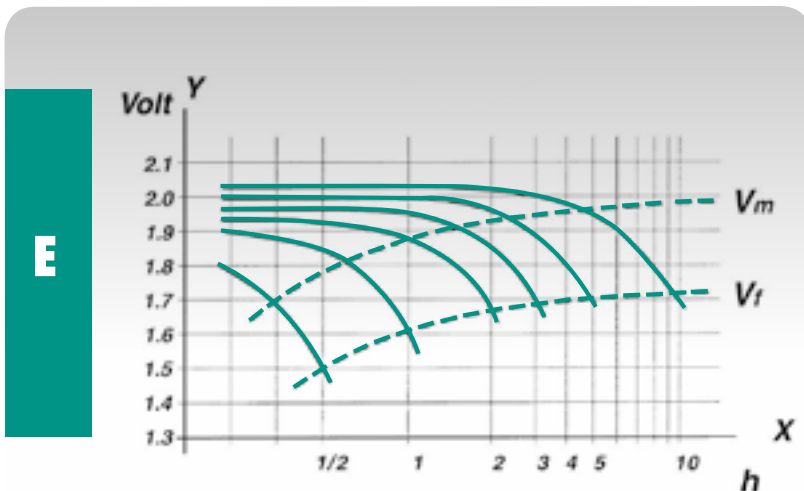
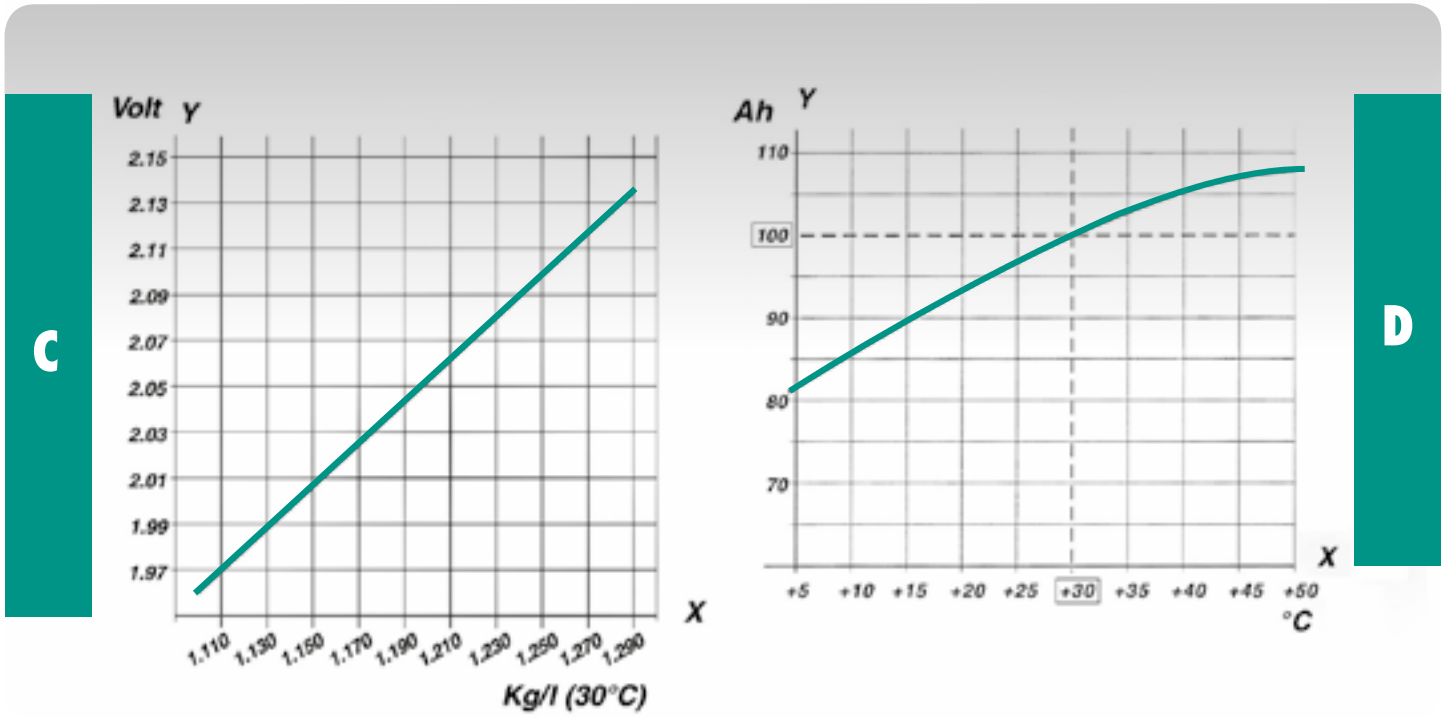
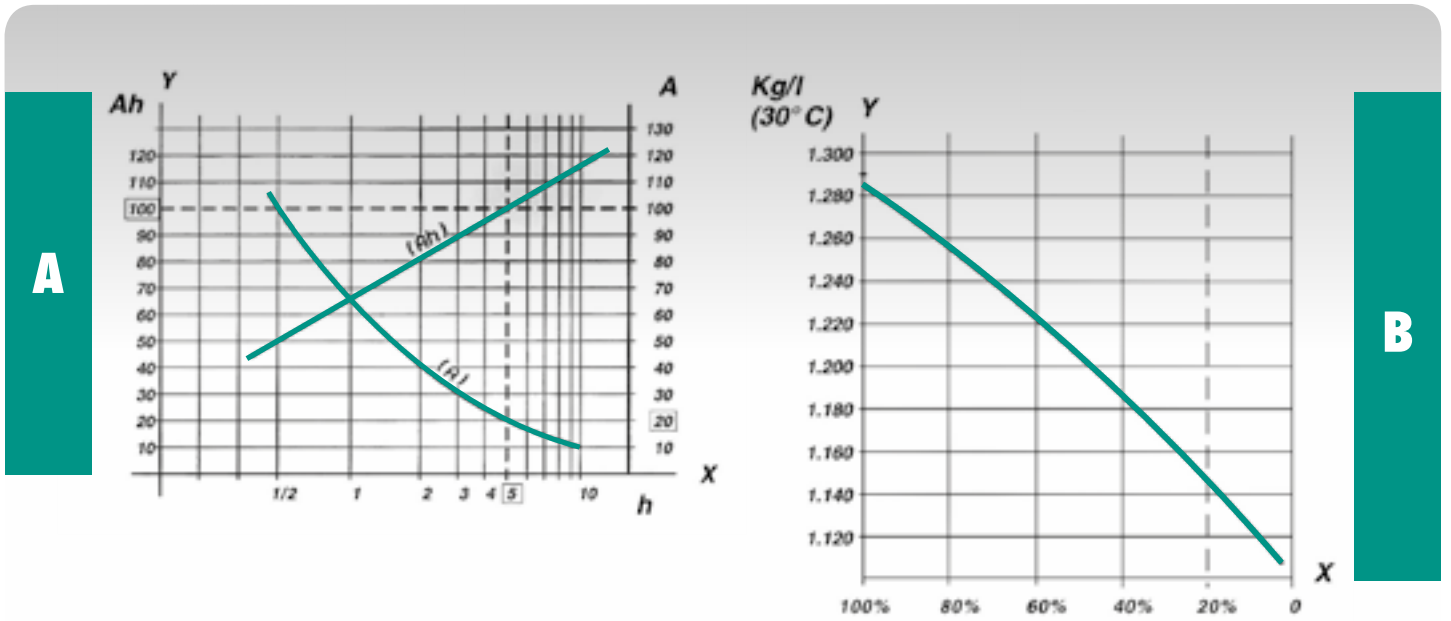
| Cells Elements |              |             | Capacity and discharge rate<br>Capacità e regime di scarica |         | Nominal Weight<br>Peso Nominale | Overall dimensions<br>Dimensioni d'ingombro |       |       |      |
|----------------|--------------|-------------|---|---------|---------------------------------|---|-------|-------|------|
| Range Serie    | Type / Tipo  |             | in 5 hours / in 5 ore                                       |         |                                 | X mm  | Y mm  | H mm  | h mm |
|                | MIDAC        | PzB         | Capacity  | Current |                                 |   |       |       |      |
|                |              |             | Ah  | A       |                                 |   |       |       |      |
| MLM-E 100      | 2 MLM-E 100  | 2 PzB 200   | 200   | 40      | 13,0                            | 45  | 157,5 | 634   | 604  |
|                | 3 MLM-E 100  | 3 PzB 300   | 300   | 60      | 17,9                            | 61  | 157,5 | 634   | 604  |
|                | 4 MLM-E 100  | 4 PzB 400   | 400   | 80      | 22,8                            | 77  | 157,5 | 634   | 604  |
|                | 5 MLM-E 100  | 5 PzB 500   | 500   | 100     | 27,7                            | 93  | 157,5 | 634   | 604  |
|                | 6 MLM-E 100  | 6 PzB 600   | 600   | 120     | 32,5                            | 109   | 157,5 | 634   | 604  |
|                | 7 MLM-E 100  | 7 PzB 700   | 700   | 140     | 37,4                            | 125   | 157,5 | 634   | 604  |
|                | 8 MLM-E 100  | 8 PzB 800   | 800   | 160     | 42,3                            | 141   | 157,5 | 634   | 604  |
|                | 9 MLM-E 100  | 9 PzB 900   | 900   | 180     | 47,2                            | 157   | 157,5 | 634   | 604  |
|                | 10 MLM-E 100 | 10 PzB 1000 | 1000  | 200     | 52,1                            | 173   | 157,5 | 634   | 604  |
|                | MLM-E 105    | 2 MLM-E 105 | 2 PzB 210   | 210     | 42                              | 14,6  | 45    | 157,5 | 718  |
| 3 MLM-E 105    |              | 3 PzB 315   | 315   | 63      | 20,1                            | 61  | 157,5 | 718   | 688  |
| 4 MLM-E 105    |              | 4 PzB 420   | 420   | 84      | 25,8                            | 77  | 157,5 | 718   | 688  |
| 5 MLM-E 105    |              | 5 PzB 525   | 525   | 105     | 31,6                            | 93  | 157,5 | 718   | 688  |
| 6 MLM-E 105    |              | 6 PzB 630   | 630   | 126     | 36,9                            | 109   | 157,5 | 718   | 688  |
| 7 MLM-E 105    |              | 7 PzB 735   | 735   | 147     | 42,5                            | 125   | 157,5 | 718   | 688  |
| 8 MLM-E 105    |              | 8 PzB 840   | 840   | 168     | 48,0                            | 141   | 157,5 | 718   | 688  |
| 9 MLM-E 105    |              | 9 PzB 945   | 945   | 189     | 53,7                            | 157   | 157,5 | 718   | 688  |
| 10 MLM-E 105   |              | 10 PzB 1050 | 1050  | 210     | 59,3                            | 173   | 157,5 | 718   | 688  |

## CELL DIMENSIONS / DIMENSIONI CELLA





## PERFORMANCE CURVES / CURVE CARATTERISTICHE



|                   |                                |            |
|-------------------|--------------------------------|------------|
| <b>A</b> Capacity | <b>(Y)</b> - Discharge Rates   | <b>(X)</b> |
| <b>B</b> Density  | <b>(Y)</b> - State of Charge   | <b>(X)</b> |
| <b>C</b> Voltage  | <b>(Y)</b> - Specific Gravity  | <b>(X)</b> |
| <b>D</b> Capacity | <b>(Y)</b> - Temperature       | <b>(X)</b> |
| <b>E</b> Voltage  | <b>(Y)</b> - Discharge Rates   | <b>(X)</b> |
| <b>A</b> Capacità | <b>(Y)</b> - Regimi di scarica | <b>(X)</b> |
| <b>B</b> Densità  | <b>(Y)</b> - Stato di carica   | <b>(X)</b> |
| <b>C</b> Tensione | <b>(Y)</b> - Densità           | <b>(X)</b> |
| <b>D</b> Capacità | <b>(Y)</b> - Temperatura       | <b>(X)</b> |
| <b>E</b> Tensione | <b>(Y)</b> - Regimi di scarica | <b>(X)</b> |

# MB2 THE BATTERY BRAIN



**Perfectly integrated Battery Module Unit, the MB2 takes reading of ALL the essential parameters like terminals and half battery voltage, in/out current, electrolyte level and temperature, with lab-instrument accuracy, while preserving high mechanical strength and chemical-proof characteristics during the entire battery life.**

Constantly communicating with the MIDATRON unit using Powerline wireless technology, MB2 provides record of any relevant event and proactively adjusts the charging algorithm parameters. Responding to the most severe safety protocols, the MIDATRON MB2 system constitutes ultimate solution for Battery Management requirements.

**Modulo batteria perfettamente integrato nel sistema, MB2 mantiene monitorato ogni parametro essenziale come tensione ai terminali ed a metà batteria, corrente in ingresso ed in uscita, temperatura e livello dell'elettrolito, con la precisione di strumenti da laboratorio, preservando un'elevata robustezza meccanica e caratteristiche di resistenza all'aggressione da parte di agenti chimici nel corso dell'intera vita della batteria.**

In costante comunicazione con il caricabatteria MIDATRON mediante l'impiego della tecnologia ad onde convogliate, MB2 registra ogni evento rilevante e proattivamente controlla i parametri dell'algoritmo di ricarica. Rispondente ai più severi protocolli di sicurezza, il sistema MIDATRON-MB2 costituisce l'avanguardia per ogni necessità di gestione della batteria.



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Midac utilizza l'energia pulita prodotta dal proprio impianto fotovoltaico per la produzione di batterie e accumulatori, evitando l'emissione di 945 tonnellate di CO<sub>2</sub> ogni anno.

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*Midac uses clean energy produced by your photovoltaic system for the production of batteries and accumulators, avoiding the emission of 945 tons of CO<sub>2</sub> each year.*

