BOARDHANDLING

DEPANELING

FEEDING

MARKING

MOUNTING

SCANNING

SOLDERING

WELDING
IPTE’s Easyline PCB handling systems provide the market with a high technology solution which is economical in footprint and cost and embrace all the latest concepts in lean design.

Each welded steel framed unit is fully equipped with its own control and diagnostics via a user friendly interface accessed through a LCD touch screen. Each unit is fully compatible with other units and other standard equipment in electronics manufacturing lines to ensure a truly ‘plug and play’ assembly line strategy.

**Boardhandling - EasyLine**

- Bareboard loader
  - BBL
  - Configurable loading unit for bare boards
  - Top unloading mechanism
  - Mechanical PCB separator
  - 500 gr max PCB weight
  - 300 mm Stack height
  - 8 sec Destack one board

- Bareboard unloader
  - BBU
  - Configurable unloading unit for bare boards
  - Top loading mechanism
  - 500 gr max PCB weight
  - 300 mm Stack height
  - 8 sec Stack one board
Loaders & unloaders

**Single magazine line loader**
MLL I

- Compact, reliable PCB line loader
- Ideal for fast running lines
- Silent operation
- 10 mm Programmable pitch
- 8 sec PCB exchange time

**Single magazine line unloader**
MLU I

- Reliable PCB line unloader
- Ideal for fast running lines
- Silent operation
- 10 mm Programmable pitch
- 9 sec PCB exchange time

**Multi magazine line loader**
MLL VI

- Compact PCB line loader with magazine changer
- Silent operation
- Back or side loading
- 10 mm Programmable pitch
- 12 sec PCB exchange time
- 26 sec Magazine exchange time

**Multi magazine line unloader**
MLU VI

- Compact PCB line unloader with magazine changer
- Silent operation
- Back or side unloading
- 10 mm Programmable pitch
- 12 sec PCB exchange time
- 26 sec Magazine exchange time
Buffers

Single magazine buffer
MBU I
- In-line LIFO or FIFO PCB buffer with magazine
- Suitable as FAIL PCB stacker unit
- 10 mm Programmable pitch
- 12 sec PCB exchange time
- Optional Pass-Through on belt conveyor

Multi magazine buffer
MBU VI
- In-line LIFO PCB buffer with magazine changer
- Suitable as FAIL PCB stacker unit
- 10 mm Programmable pitch
- 12 sec PCB exchange time
- 30 sec Magazine exchange time
- Optional Pass-Through on belt conveyor

LIFO buffer unit
SBU
- In-line buffer with stock capacity of max 40 PCBs
- Suitable as LIFO or FAIL PCB stacker unit
- Configurable pitch of 20 mm
- 10 sec Cycle time
- 800 mm Stack height

FIFO buffer unit
FBU
- In-line buffer with stock capacity of max 25 PCBs
- Suitable as FIFO or FAIL PCB stacker unit
- Configurable pitch >= 20 mm (steps of 10 mm)
- 500 mm Stack height
- Optional cool down fans
Traffic controllers

**Traverser unit**
TRV

- Electrically operated PCB transfer unit
- Programmable stroke for import and export positions
- Cycle time depends on stroke
- Multiple entries and/or exits

**Turn unit**
TUU

- ± 90° or 180° Configurable
- Smooth PCB turning
- 8 sec Cycle time

**Flip unit**
FLU

- Smooth PCB flipping
- Flip-on program
- Pneumatical stopper
- 8 sec Cycle time

**Lift unit**
LFU

- Electrically operated PCB lift unit
- Programmable lift positions
- Cycle time depends on stroke
- Lift up or lift down
Conveyors

Transport unit
BTR
- Fast, reliable PCB conveyor
- Useable as transport or inspection conveyor
- Multi segments available (1 to 4)
- Typical cycle time: 3 sec
- Single lane (optional multi lane)
- Optional high or low top cover

Manual work station
MWS
- Modular concept
- Edge conveyor or flat belt
- Single or dual belt work platform
- Upgradeable to suit increasing production needs
- Typical cycle time: 3 sec per segment

Manual gate unit
MGU
- Easy and reliable passage
- Manual opening and closing of the segment
- 800 mm Passage width
- Typical cycle time: 8 sec

Telescopic gate unit
TGU
- Easy and reliable passage
- Option normal open/normal closed selection
- 750 mm Passage width
- Automatic opening and closing of the segment
- Typical cycle time: 10 sec
Conveyors

Wave In Conveyor
WAI
- Fast, reliable PCB conveyor
- Useable as transport for wave oven input
- Adjustable import conveyor angle for smooth transfer to oven
- Lean design - optimized footprint

Wave Out Conveyor
WAO
- Fast, reliable PCB conveyor
- Useable as transport for wave oven output
- Adjustable export conveyor angle for smooth transfer from oven
- Lean design - optimized footprint

Pass/Fail Sorter

3 Magazine Cassette Loader/Unloader MLL-3P / MLU-3P
- Compact reliable PCB line loader or unloader
- Suitable as Pass/Fail Sorter
- (Un)Loading with 3 magazines
- Silent operation
- Lean design - optimized footprint

Magazines

CAB
MIKI-Plastik
- Other magazines on request
EasyLine specifications

PCB Specification

<table>
<thead>
<tr>
<th>PCB Thickness minimum:</th>
<th>0,8 - 4,0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB Ratio:</td>
<td>0,8 (Length ≥ 0,8 x Width)</td>
</tr>
<tr>
<td>PCB Top clearance:</td>
<td>100 mm (25 mm for S-line)</td>
</tr>
<tr>
<td>PCB Bottom clearance:</td>
<td>25 mm</td>
</tr>
<tr>
<td>PCB Weight:</td>
<td>2,5 kg</td>
</tr>
</tbody>
</table>

Technical specification

<table>
<thead>
<tr>
<th>Standard magazine type:</th>
<th>Adaptable to common magazines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport height:</td>
<td>780/870 - 1.100 mm (SMEMA)</td>
</tr>
<tr>
<td>PCB Exchange time:</td>
<td>typical 3 sec between segments</td>
</tr>
<tr>
<td>PCB Edge support:</td>
<td>2,0 - 4,5 mm adjustable</td>
</tr>
<tr>
<td>Transport speed:</td>
<td>100 - 800 mm/sec</td>
</tr>
<tr>
<td>Transport direction:</td>
<td>L&gt;R, R&gt;L (to be specified at order)</td>
</tr>
<tr>
<td>Color frame / plating:</td>
<td>RAL 7035 ESD</td>
</tr>
<tr>
<td>Standards:</td>
<td>CE, SMEMA</td>
</tr>
<tr>
<td>Energy requirements:</td>
<td>230 V ±10%, 50 Hz - 110 V ±10%, 60Hz</td>
</tr>
<tr>
<td>Compressed air:</td>
<td>5 - 7 bar, 40 l/min according to DIN ISO 8573 3.4.5</td>
</tr>
<tr>
<td>Control unit:</td>
<td>OMRON with color touch screen operator interface</td>
</tr>
</tbody>
</table>

Options

- Automatic width adjustment
- RS232/RS485, ethernet bus system
- Siemens, SMPI, Fuji, Panasonic, Sanyo SMEMA

M-Size (L x D x H) M-Size Weight PCB Dimensions

<table>
<thead>
<tr>
<th></th>
<th>M-Size (L x D x H)</th>
<th>M-Size Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBL</td>
<td>50 x 76 x 130 cm</td>
<td>144 kg</td>
</tr>
<tr>
<td>BBU</td>
<td>50 x 76 x 130 cm</td>
<td>144 kg</td>
</tr>
<tr>
<td>MLL I</td>
<td>130 x 69 x 184 cm</td>
<td>225 kg</td>
</tr>
<tr>
<td>MLU I</td>
<td>130 x 69 x 184 cm</td>
<td>240 kg</td>
</tr>
<tr>
<td>MLL VI</td>
<td>220 x 69 x 184 cm</td>
<td>325 kg</td>
</tr>
<tr>
<td>MLU VI</td>
<td>295 x 69 x 184 cm</td>
<td>390 kg</td>
</tr>
<tr>
<td>MBU I</td>
<td>130 x 69 x 184 cm</td>
<td>240 kg</td>
</tr>
<tr>
<td>MBU VI</td>
<td>130 x 230 x 184 cm</td>
<td>390 kg</td>
</tr>
<tr>
<td>SBU</td>
<td>50 x 76 x 184 cm</td>
<td>105 kg</td>
</tr>
<tr>
<td>FBU</td>
<td>50 x 78 x 187 cm</td>
<td>195 kg</td>
</tr>
<tr>
<td>TRV-1500</td>
<td>50 x 218 x 130 cm</td>
<td>115 kg</td>
</tr>
<tr>
<td>TUU</td>
<td>76 x 76 x 130 cm</td>
<td>240 kg</td>
</tr>
<tr>
<td>FLU</td>
<td>50 x 76 x 130 cm</td>
<td>126 kg</td>
</tr>
<tr>
<td>LFU</td>
<td>50 x 76 x 130 cm</td>
<td>126 kg</td>
</tr>
<tr>
<td>BTR</td>
<td>50 x 76 x 98 cm</td>
<td>60 kg</td>
</tr>
<tr>
<td>MGU</td>
<td>150 x 76 x 130 cm</td>
<td>160 kg</td>
</tr>
<tr>
<td>TGU</td>
<td>150 x 76 x 130 cm</td>
<td>180 kg</td>
</tr>
<tr>
<td>MWS</td>
<td>150 x 76 x 98 cm</td>
<td>240 kg</td>
</tr>
<tr>
<td>WAI</td>
<td>50 x 76 x 128 cm</td>
<td>110 kg</td>
</tr>
<tr>
<td>WAO</td>
<td>50 x 76 x 168 cm</td>
<td>110 kg</td>
</tr>
<tr>
<td>MLL-3P / MLU-3P</td>
<td>100 x 145 x 130 cm</td>
<td>175 kg</td>
</tr>
</tbody>
</table>

S-Size & L-Size on request

Specifications can be changed without notice.