



...save time!

Import Belgium & Luxembourg

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The Company

MiniTec was founded on the sales of miniature linear guides and has successfully evolved into designing complete machines and devices for many industrial processes around the world.

The Production Program

Our linear technology combined with the Profile System is the ideal partnership for machine builders. The components work together to provide optimum performance and the modular assembly system makes it possible to design and manufacture to unique specifications quickly and cost effectively.

The Quality

To meet the demands of linear technology precision and exceed quality expectations, we invest in the latest machines and newest technologies and manufacturing techniques. Our quality management has been certified according to ISO 9001 since 1994.

The Environment

Our Company mission stresses an active role in environmental protection and the conservation of our natural resources. As an example we locate our service partners in close proximity to our customers to avoid long transits. Our environment management system is certified according to ISO 14001.

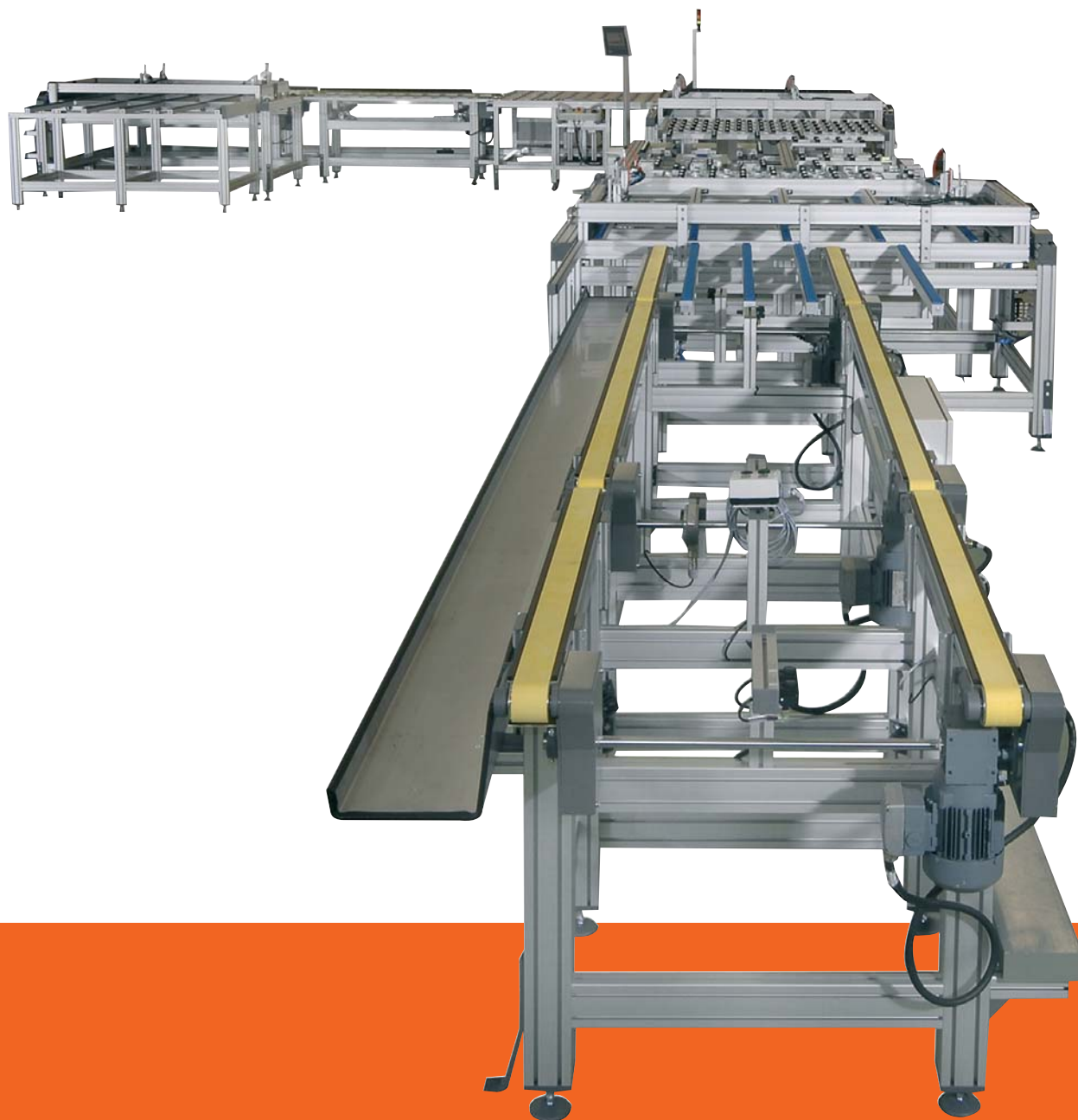
The Occupational Health and Safety

Since 2006 is our company certified with the OHSAS 18001 – Occupational Health and Safety Assessment Series.

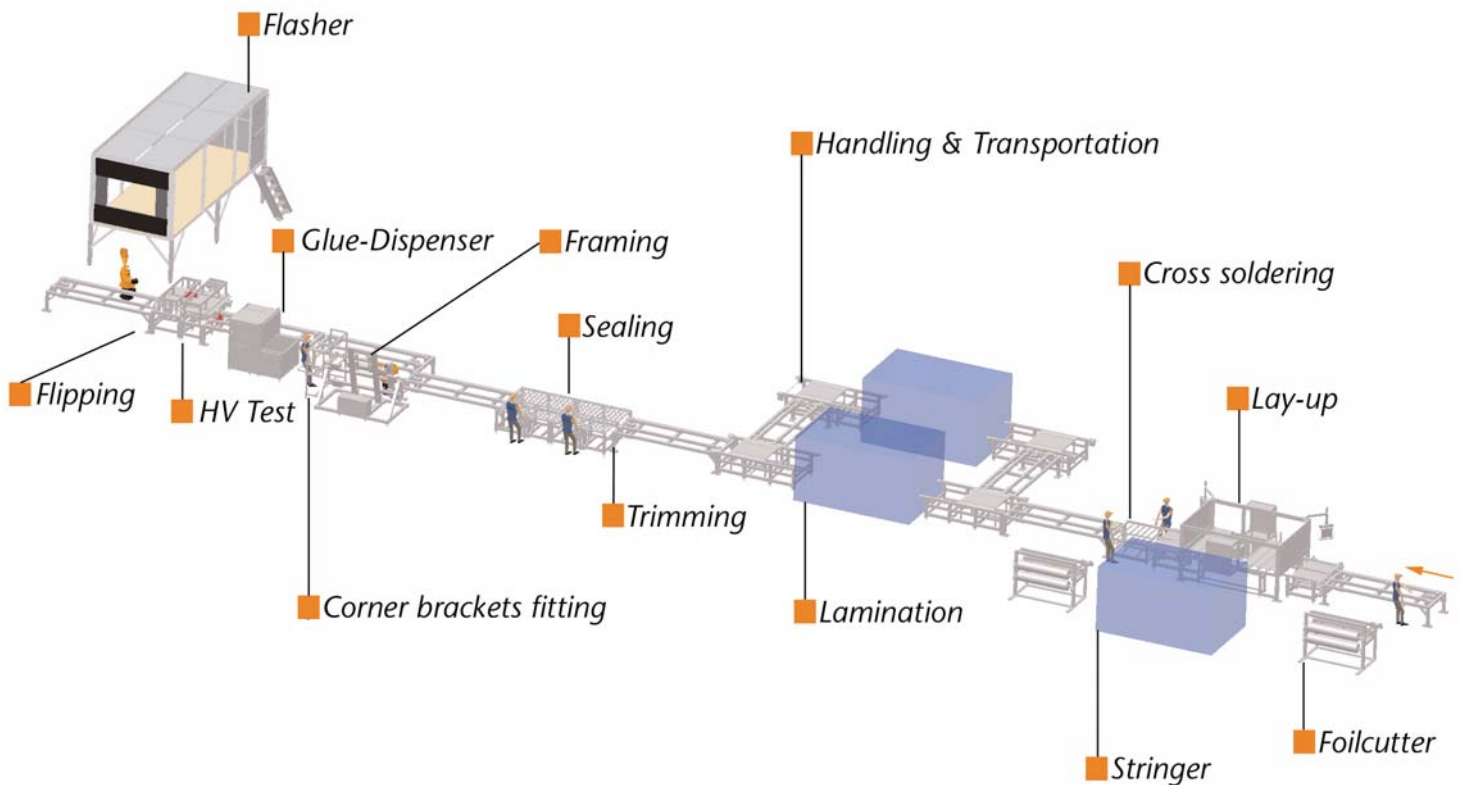
The Innovation

For us innovation means more than just new products. All our processes are constantly optimized. Continuous training of our staff and close cooperation with research and education facilities are the base for a steady innovation process.

MINITEC SOLARTECHNOLOGY



PRODUCTION LINE FOR CRYSTALLINE MODULES



MiniTec's Solar technology is concentrating on systems for the automation of PV module assembly. Several lines are helping to increase productivity at PV producers in Europe and USA.

Components for successful production

- Crystalline module technology
- Thin film module technology
- Over 10 years of experience in PV-Industry
- Different grades of automation:
 - manual <10 MW/year
 - semi automatic 10-20 MW/year
 - full automatic >20 MW/year
- Customized solutions
- Upgrade of existing production

Testing stations

For Solar Simulators (for example BERGER Lichttechnik, H.A.L.M., Endeas, Pasan) MiniTec has built several handling stations around the flasher

including automatic module loading, flipping, contacting, HV testing, labelling and sorting into different classes.

Handling/Transportation

Some examples of other manufacturing steps where MiniTec is providing handling and assembly-automation:

- Module- and glass-handling from incoming inspection up to module-packaging and labelling
- Framing
- Flipping
- Buffering

AUTOMATIC LAY-UP



Techn. Data:

- Fully automatic operation

Cycle time: < 15 sec/string (with 2 portals, without camera-inspection)

Module sizes: from 500 x 1000
up to 2.000 x 3000 mm

Repeating accuracy: 0.5 mm

Cell-dimensions: min 6", max 8"
(others on request)

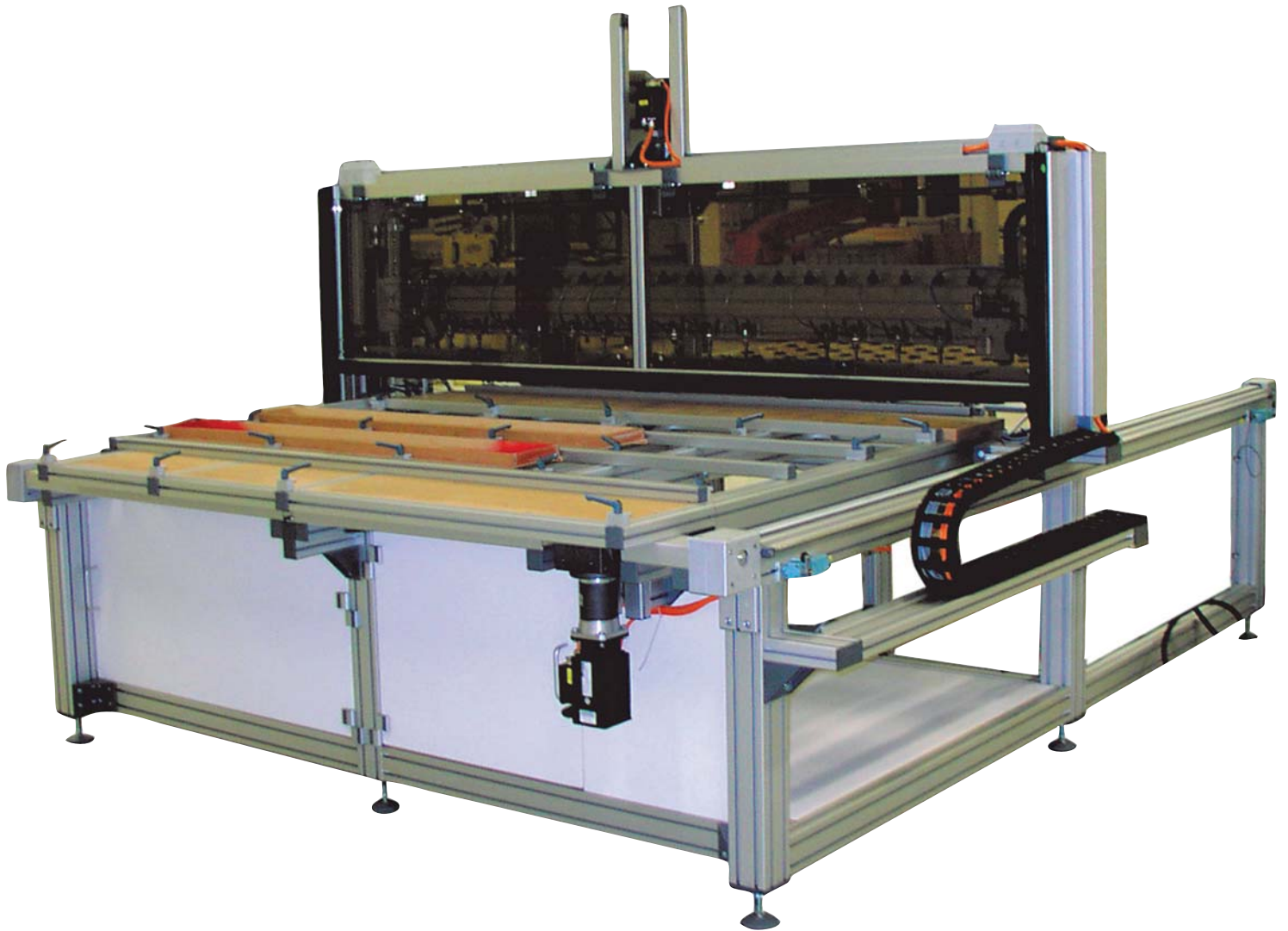
Power-supply: 400 V, 50/60 Hz,

Rated output: 6 kVA

Options:

- In-process string inspection with cameras
- Control of soldering-ribbons
- Interface for data-management, bar-code reader, labelprinter
- tTlediagnostic service
- Connection with stringer
- Manual soldering table
- Connection to automatic soldering station

SEMI AUTOMATIC LAY-UP



Techn. Data:

- Semi automatic operation

Cycle time: < 40 sec/string
For modules from 500 x 1200 up to
700 x 1960 mm
(others on request)

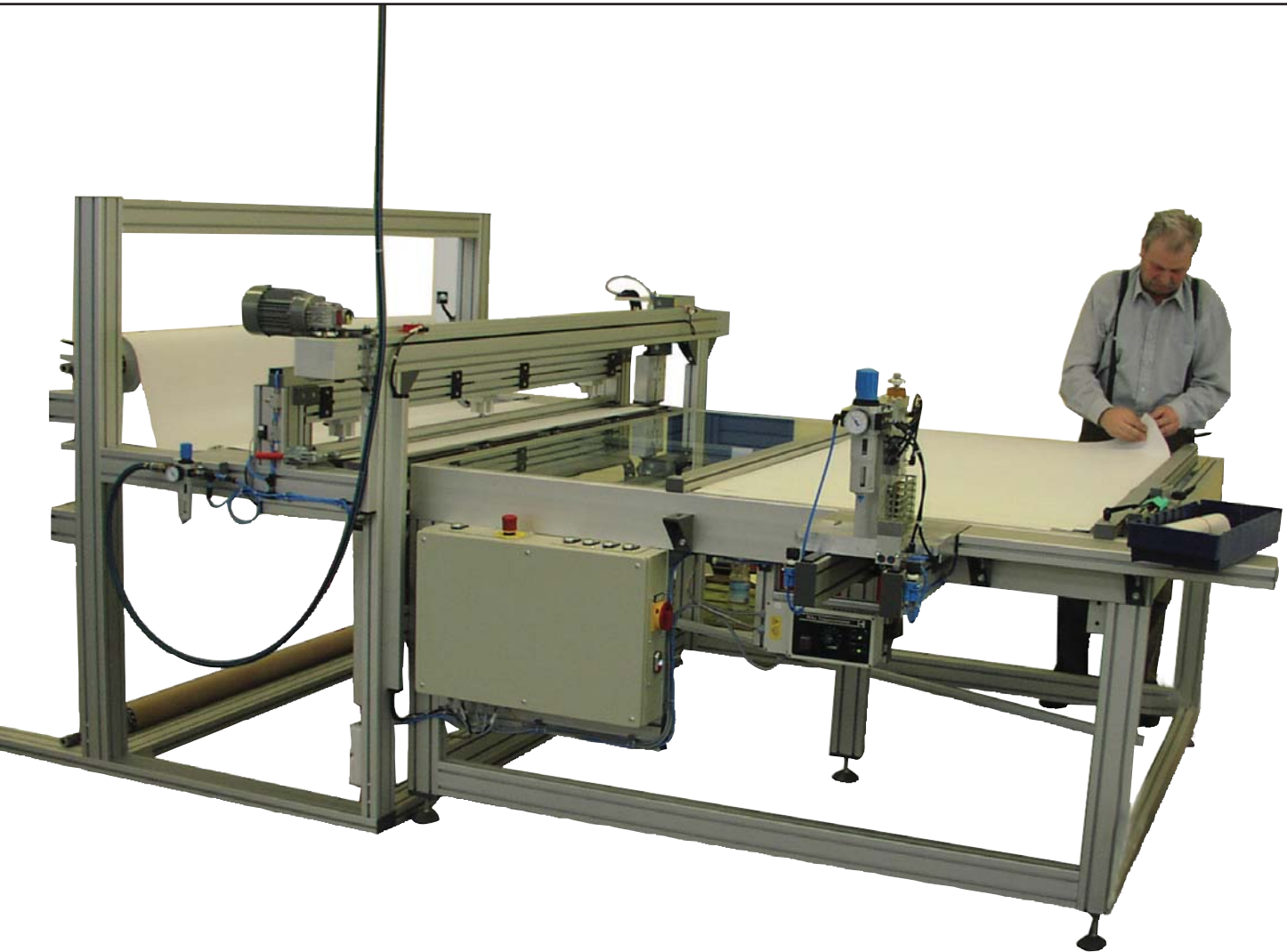
Repeating accuracy: 0.5 mm
Cell-dimensions: min 4", max 6"
(others on request)

Power-supply: 400 V, 50/60 Hz
Rated output: 2 kVA

Options:

- Automatic glass alignment
- Interface for data-management, bar-code reader, labelprinter
- Telediagnostic service
- Connection with stringer
- Transportation lines for assembled modules

FOIL-CUTTER



Techn. Data:

- Constituents:
- Electric driven cutter on linear-portal
 - worktable with adjustable bed-stops

Foil sizes:

Width min: 200 mm, max: 1700 mm
Length min: 500 mm, max: 2000 mm
Max thickness: 0,5 mm

Recommended foil types:

- Etimex Elvax 0,5 mm
- Icosolar 0,2 mm
(others on request)

Operation:

- Manual unrolling of the foil in desired length
- The machine is equipped with 2 adjustable bed-stops
- Automatic clamping and cutting

Options:

- Stamping system for junction wires

GLUE-DISPENSER



Techn. Data:

- CNC Glue applicator
- Volume controlled glue barrel pump
- Automatic attachment of selfadhesive strips

Options:

- Automatic box loading
- Automatic box attachment
- Alternatively with or without selfadhesivetape application

Operation :

- Manual loading of connector box
- Fully automatic attachment of 1/2 selfadhesive
- Automatic spread of glue layer, following the outline of the connector box (different box type- and different contours programmable)

Cycle time: depending on box size 45-90 sec

HORIZONTAL FLASHER



Techn. Data:

- Output metering and classification of assembled modules with connector box

Size: depending on flashing system

Max module sizes: 3000 x 3000 mm

Min module sizes: 1200 x 550 mm
(others on request)

Contacting of modules: manual/automatic

Flasher-System:

Berger Lichttechnik / H.A.L.M. / Endeas / Pasan

Options:

- Automatic labelling
- HV test
- Framed modules/frameless modules
- Automatic or manual loading of the modules
- Automatic or manual contacting
- Stand alone solution with PLC and interface standardized

VERTICAL FLASHER



Techn. Data:

- Output metering and classification of assembled modules with connector box

Size: depending on flashing system

Max module sizes: 2000 x 1500 mm

Min module sizes: 1200 x 550 mm
(others on request)

Contacting of modules: manual/automatic

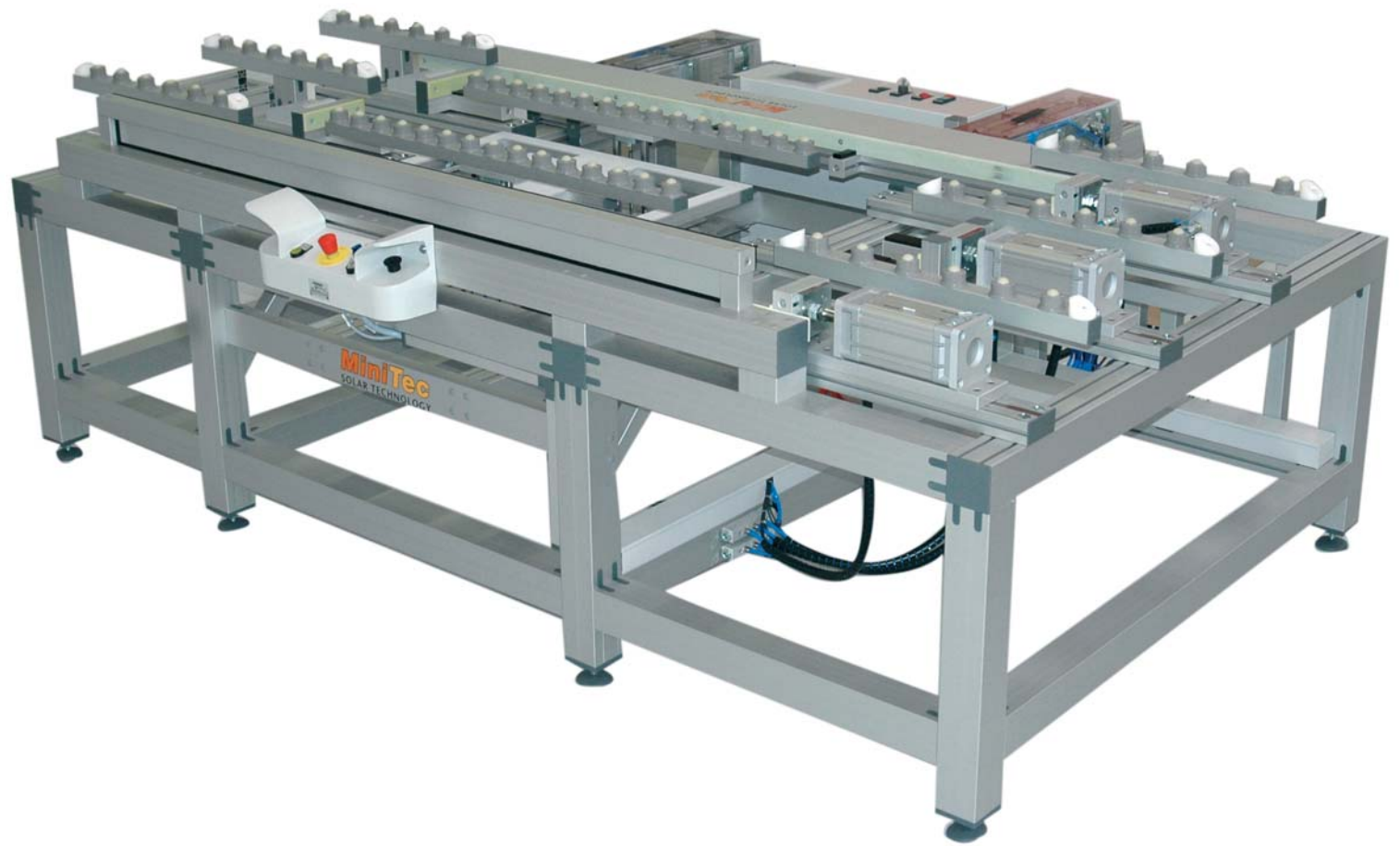
Flasher-System:

Berger Lichttechnik / H.A.L.M. / Endeas / Pasan

Options:

- Automatic labelling
- HV test
- Set upright station
- Framed modules/frameless modules
- Automatic or manual loading of the modules
- Automatic or manual contacting
- Stand alone solution with PLC and interface standardized

MODULE-FRAMING



Techn. Data:

- Assembling of module frame
- PLC controlled
- Manual or automatic

Module sizes:

Standard: 1500 x 1000; 800 x 600
Oversize: 2000 x 1600; 1200 x 1000

Cycle time: 90s - 180s/ module depending on corner joint method, sealing and workflow

Options:

- Corner key pre-assembly
- Screwed frame
- Different assembly flows
- Two operator handling
- Inline or stand alone
- Automatic screwing
- Sealing with tape or silicone

TRIMMING STATION



Techn. Data:

- Manual trimming of laminated modules

Max pane dimensions: 2000 x 1500 mm

Min pane dimensions: 1000 x 500 mm

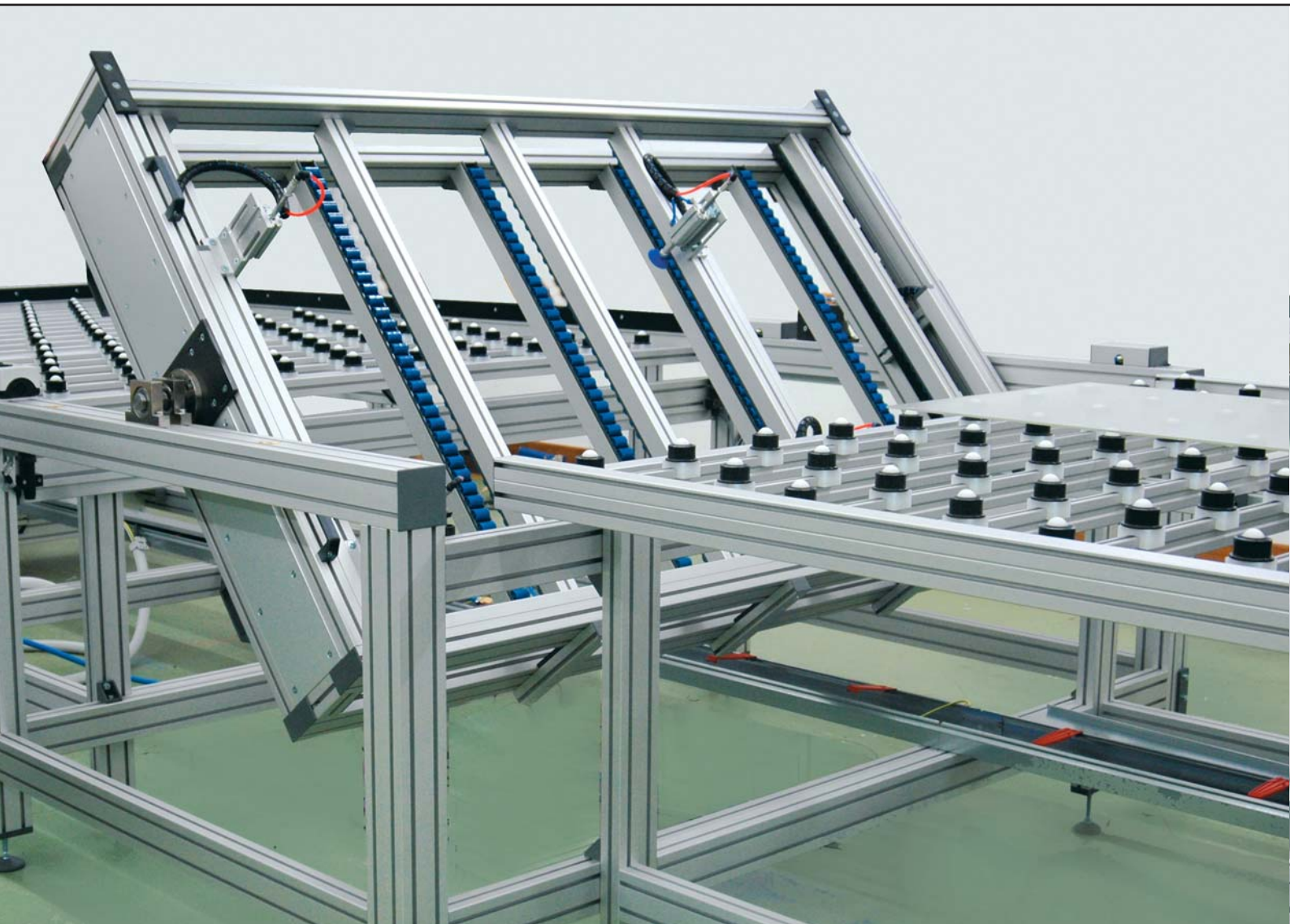
Max weight : 30 kgs

- Laminated modules are fixed by vacuum on pneumatic lifted turntable
- Manual cutting of supernatant foil

Options:

- Integrated in automatic conveyor system
- Pneumatic pane stoppers
- Also usable as cleanstation for assembled modules
- Stand alone pneumatic controlled
- PLC-controlled

MANUAL FLIPPING



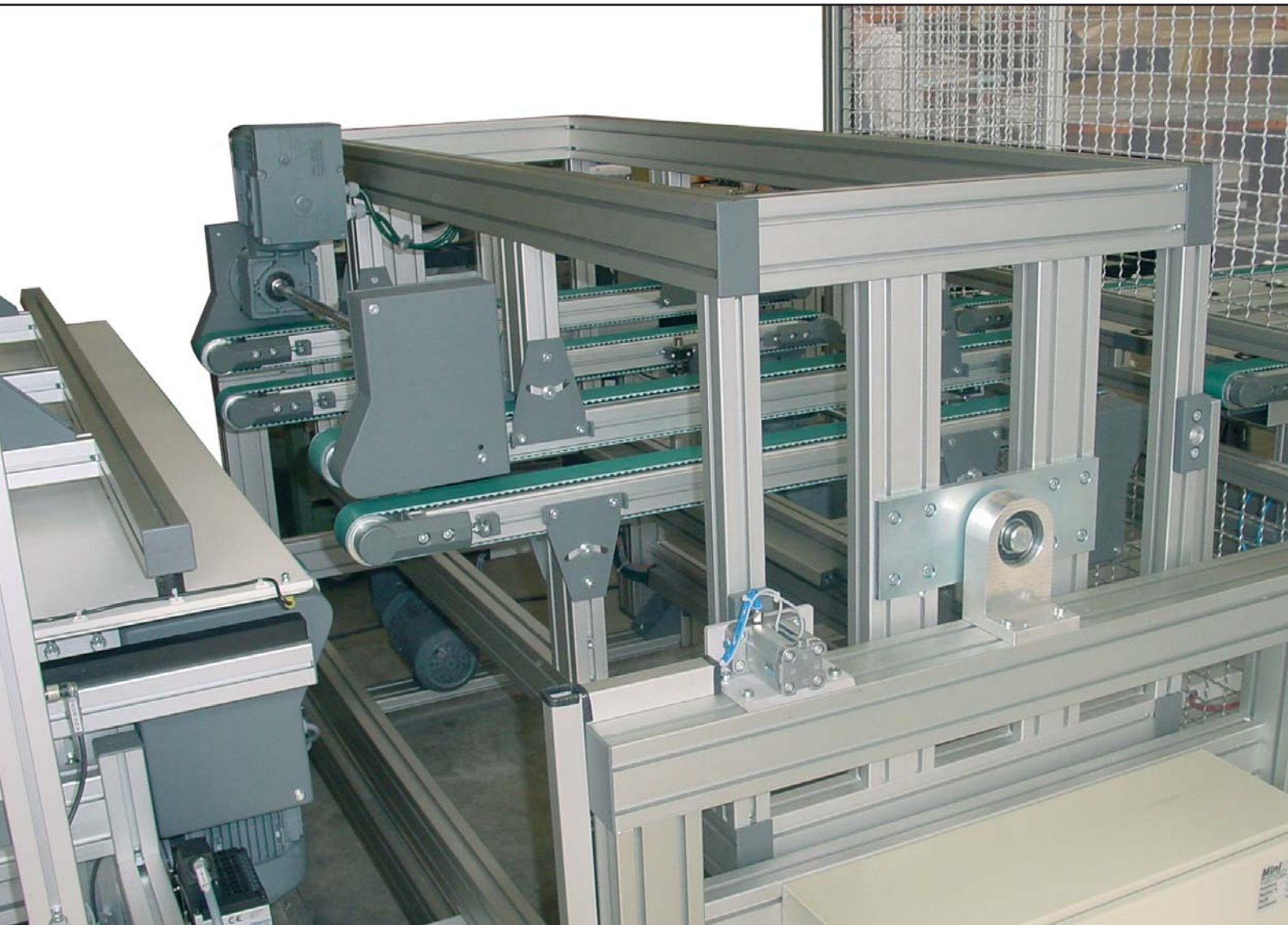
Techn. Data:

- Manual rotation of laminated modules or frame moduls with or without connector box

Max pane dimensions: 2000 x 1500 mm
Min pane dimensions: 800 x 500 mm
Max weight : 60 kgs
others on request

- The pane is fixed with pneumatic cylinders and vacuum while turning.

AUTOMATIC FLIPPING



Techn. Data:

- Automatic rotating of laminated modules or frame moduls with or without connector box

Max pane sizes: 2000 x 1500 mm

Min pane sizes: 1000 x 500 mm

Max pane weight: 60 kg

GLASS / MODULE BUFFER HD FIFO



Techn. Data:

- Inline buffering of glass panes or laminated modules without frames (with frames on request).

Max total load: 600 kg

Capacity: max 20 panes (others on request)

Max pane size: 2000 x 1100 mm
Min pane size: 1000 x 600 mm

Options:

- FIFO-Software
- buffer for framed modules
- storing of glasses with EVA-foil

GLASS / MODULE BUFFER HD LIFO



Techn. Data:

- Inline buffering of glass panes or laminated modules without frames (with frames on request).

Max total load: 600 kg

Capacity: max 20 panes (others on request)

Max pane size: 2000 x 1100 mm
Min pane size: 1000 x 600 mm

Options:

- LIFO-Software
- buffer for framed modules
- storing of glasses with EVA-foil

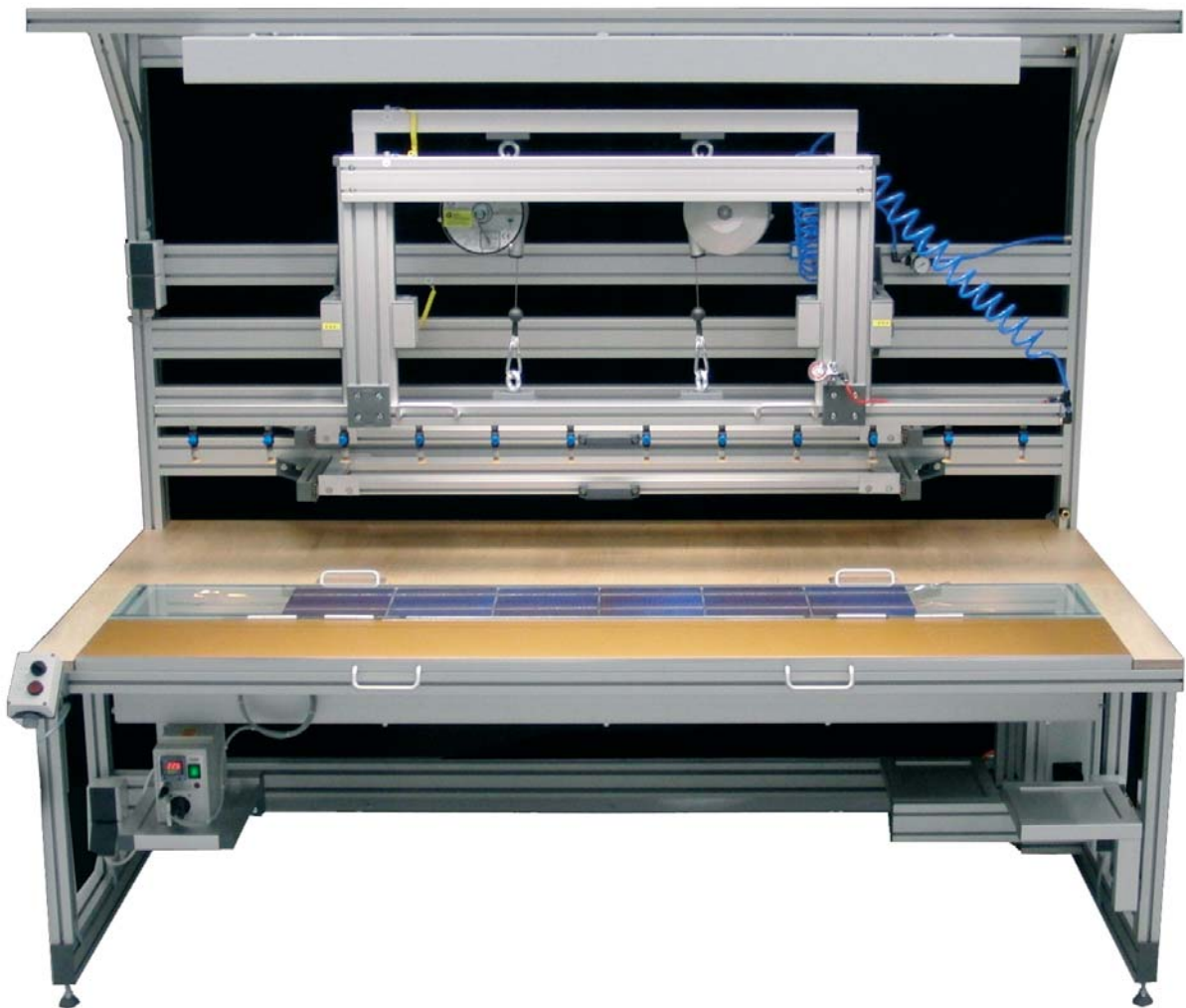
REPAIR TABLE FOR SOLAR MODULES



Description:

- Repair of module sandwiches before lamination
- Vacuum handling system for strings
- Two stringboxes for new/reject strings
- Transport trolley for handling of sandwich from line to repair table
- Luminaire and pneumatic and electrical connections
- Holders for soldering equipment
- Holders for soldering fume exhaust system

STRING REPAIR TABLE



Description:

- String repair table to repair broken cells after string process
- Vacuum handling to take string out of reject box
- String flipping unit integrated
- Light box for functional string testing after repair
- Luminaire and pneumatic and electrical connections
- Holders for soldering equipment
- Holders for soldering fume exhaust system

VISUAL INSPECTION

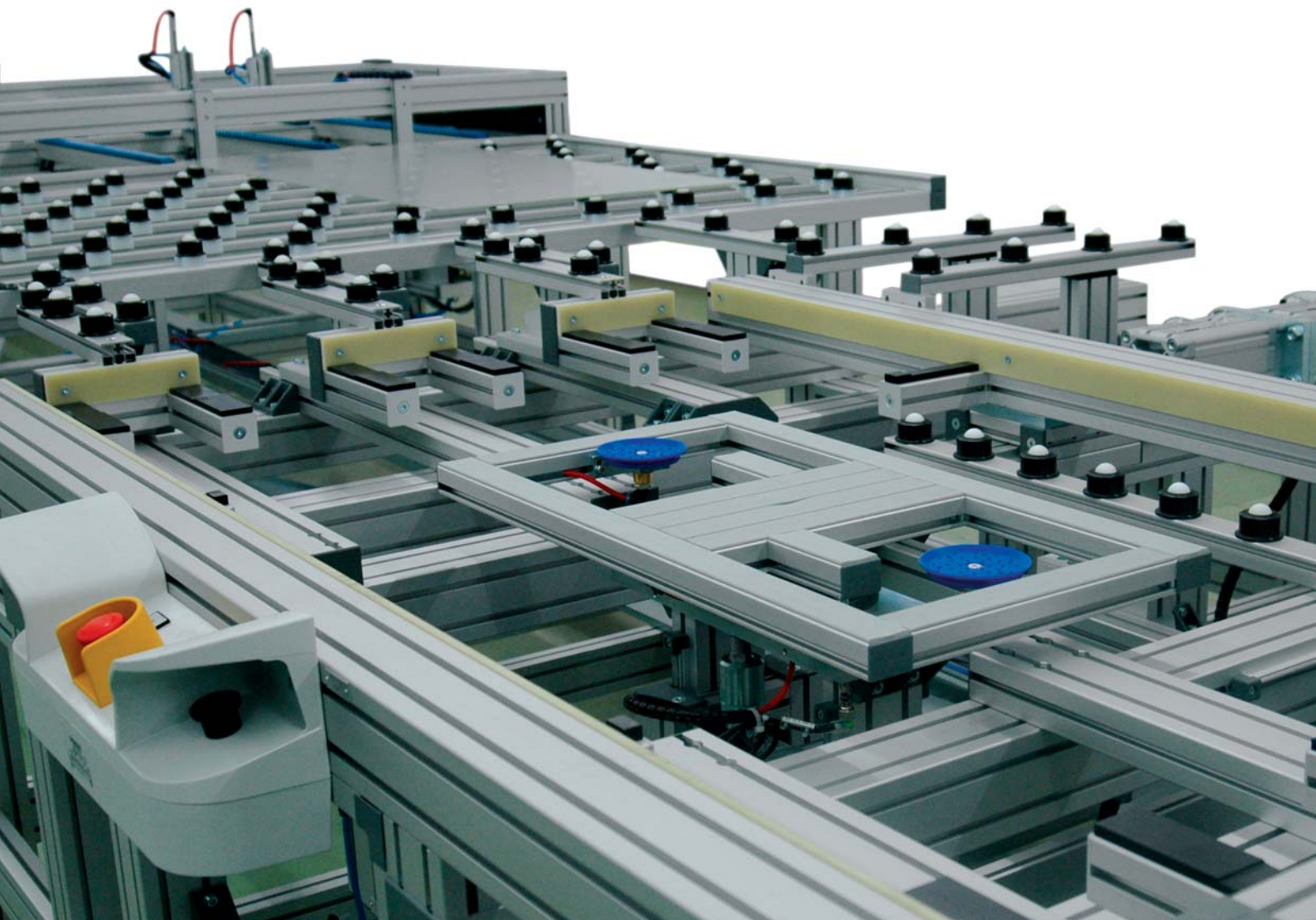


Description:

- Visual inspection of panels after lamination
- Two hand operation

Options:

- Automatic transport with toothed belt conveyor



Inline module framing station

SOLUTIONS

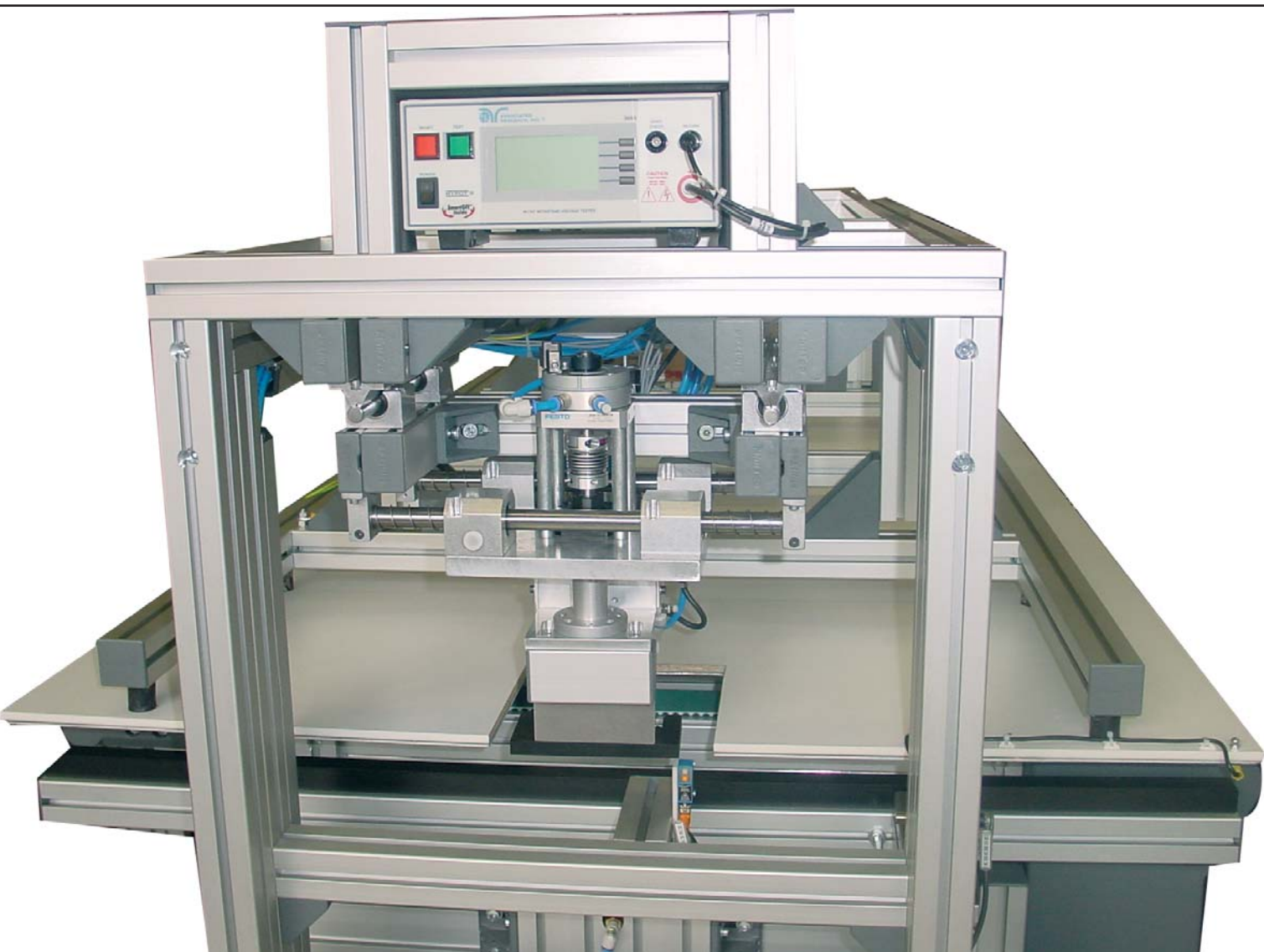


Connection between manual and automatic transportation



Semi automatic assembly line

SOLUTIONS

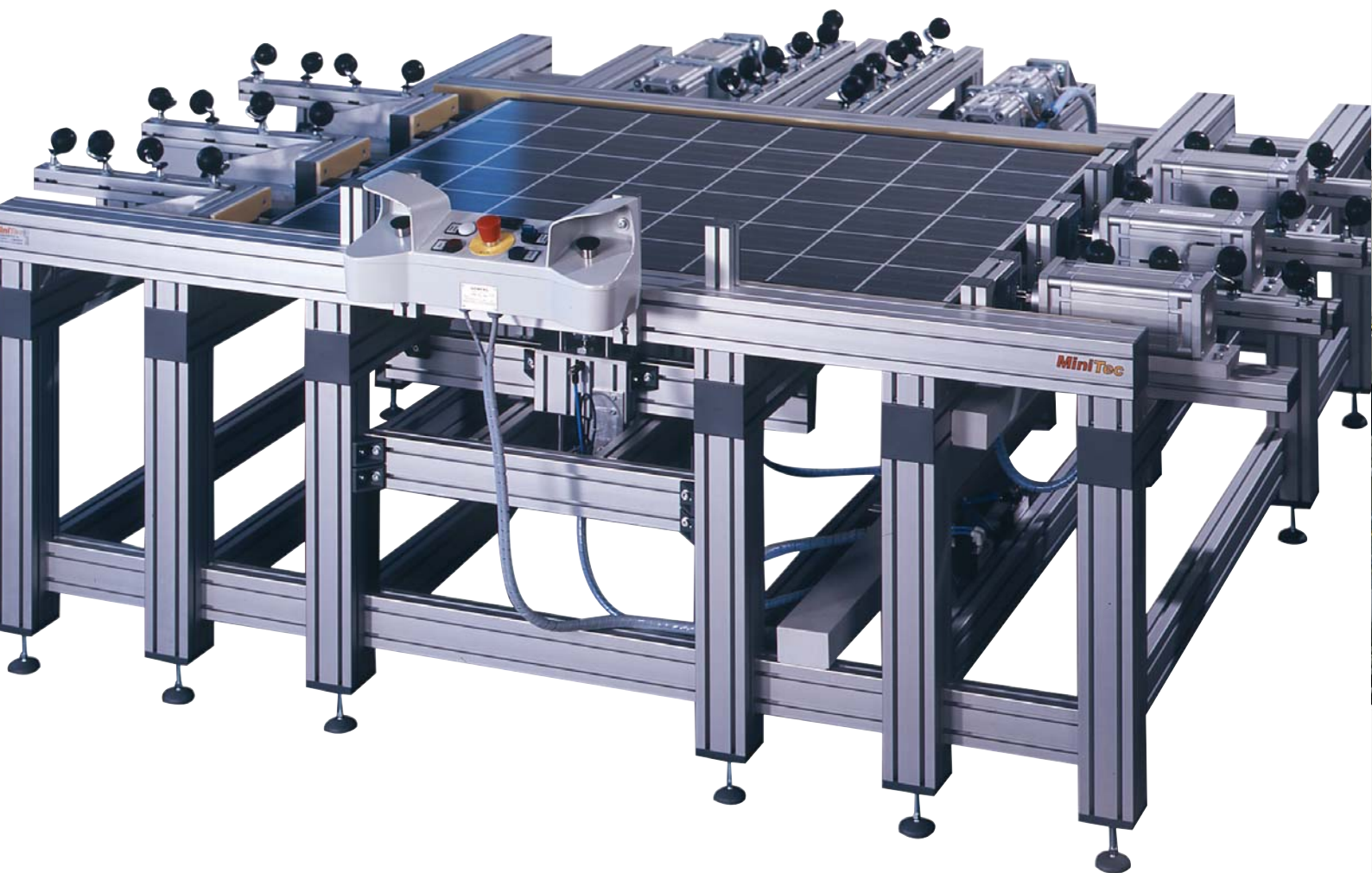


Automatic HV-test / isolation-test
Also available integrated in flasher.



Roller conveyor with mechanical accumulation protection

SOLUTIONS



Framing station (stand alone)



Automatic lift from horizontal to vertical transport

SOLUTIONS

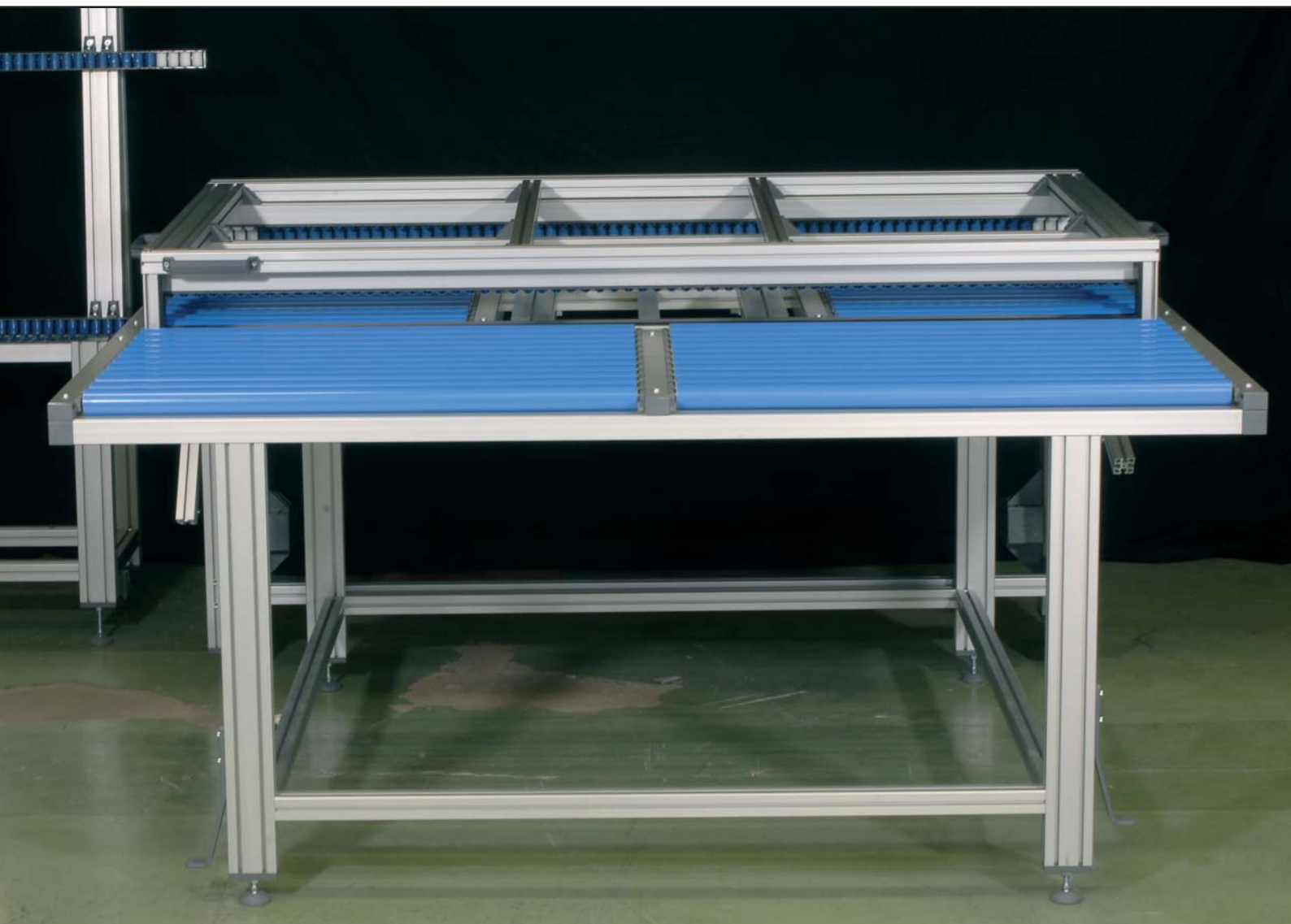


Modul flasher with integrated HV-test/isolation test



2 axis handling system for transport/packing

SOLUTIONS



Visual inspection quality controle

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