FLEXLINE

Your product quality is our drive

Assembléon

A Kulicke & Soffa Business Line

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Your product Quality is our drive

Product quality is critical for image conscious companies and companies building extended life, high cost, and high reliability products. High quality products can include:

- High-end electronics
- High service-cost
- Advanced electronics
- Recall sensitive electronics
- Regulation and safety
- Life-critical electronics

Quality must be both product and process related.

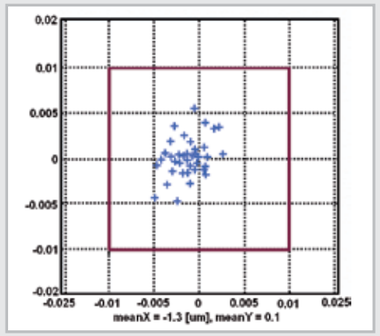
At Assembléon, quality is designed into equipment throughout its entire lifecycle. The technology used within Assembléon equipment ensures your highest possible quality. Accuracy alone will not produce quality, additional design attributes are required.

Related Services

Maintain your quality

Knowing your service requirements are unique, Assembléon tailors a service solution to meet your changing needs. Assembléon is recognized as the industry's premier service provider.

Machine accuracy verification service is one of our services that guarantees the quality of your equipment as long as you have it.



1. Single Pick Single Place

Having full control of your process requires handling one component at a time. All steps of the pick, motion and place process are fully optimized, controlled, verified and dedicated to that single component, making it the most reliable process possible in the industry.

2. 100 % component monitoring

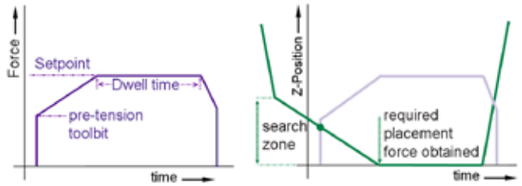
During transfer of a component from pick location to placement location:

- Laser components are aligned and monitored throughout the entire component transfer movement
- Camera components are aligned according to their placement angle and height to remove all tolerances
- After alignment, components are never rotated
- Vacuum monitoring from pick to place

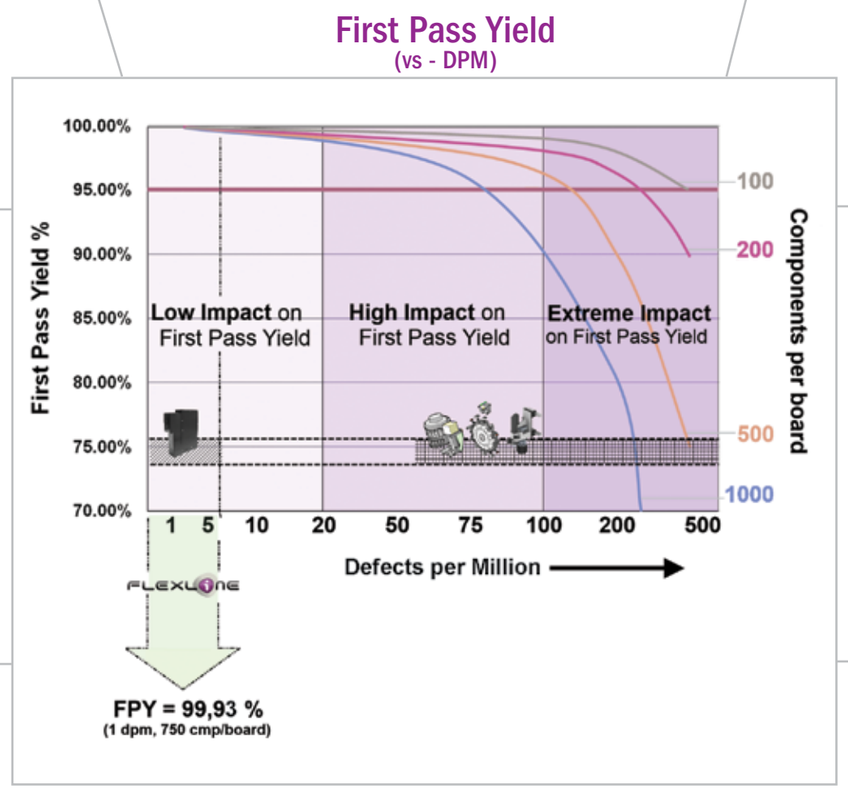
3. Controlled Pick and Place

Closed-loop active-force feedback control at every pick-and-place action:

- Full downward speed until search zone
- Reduced speed until contact with PCB is detected
- Placement force build-up towards set static force
- Verification of placement force against specified value



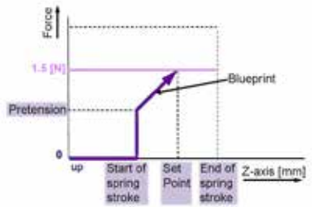
QUALITY CAN'T BE INSPECTED INTO PRODUCTS AND PROCESSES – IT MUST BE DESIGNED IN



4. Continuous placement process calibration

To guarantee closed-loop placement, the process is calibrated and verified,

- at the start up of the machine
- at defined time intervals
- with continuous generation of board surface-height maps



This advanced quality verifies that all placements are in specified control parameters and warns the operator in time, avoiding possible costly board rework throughout the machine's lifetime.

5. Error free production from the very first board

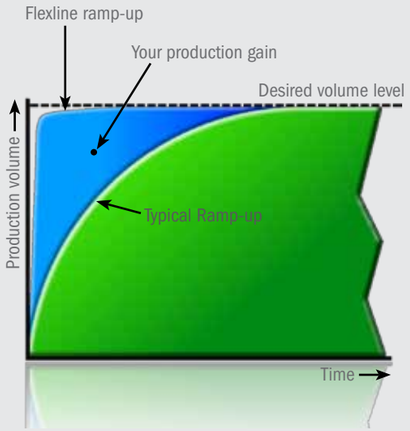
Quality can't be inspected into products, it must be designed in. Quality starts before producing the first board. The right NPI and setup tools ensure that all boards come out right, the first time (page 3 & 4).

6. Always the right nozzle

- Nozzles are marked with a dot, identifying nozzle type and orientation
- Nozzle setup fully operator independent
- High resolution laser curtain checks nozzle tip for dust, dirt, uneveness and exact tip position
- Continuous vacuum checks for airflow through nozzle, detecting possible clogging

Error free production from the very first board

Quality from the very first board means your production gains from immediate ramp-up. Correct tools secure top quality throughout the complete NPI process. And it's not only quality, securing the process eliminates repetitive steps and the time to produce the first board is cut by half.



Related Services

Start-up and Transition support

- Training by certified trainers
- Professional, fast installation
- Customized project management and transition

Generate error-free programs

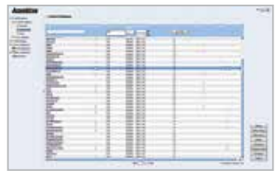
- Multiple high quality CAD importers
- Gerber engineering tools
- Virtual Sticky Tape
- Process workflow and documentation

Minimize downtime between jobs

- Feeder grouping
- Fewest setup changes
- Fewest feeder changes

Define parts and programs only once

- Centralized parts and program management
- Release management and control
- Factory and/or line release of parts and programs



Closed-loop parts roundtrip

- NPI synchronization
- Define parts and programs only once(for complete factory)

React fast to last moment NPI changes

- Easy to use onboard NPI tools
- Immediately synchronize back to product library manager
- Edit from any module location

Fast feeder preparation

- Loads within 20 seconds
- Unloading within seconds
- Automatic pitch programming
- No adjustments for operators
- Full intelligence

Error free setups

- Fail-safe setup verification
- Continuous setup monitoring
- Reel expiration date monitoring
- Forced rescan scenarios

Manage your material

- Unique reel-ID labeling
- Approved Vendor List (AVL) management
- RoHS compliant control
- Moisture Sensitive Device (MSD) control
- Component blocking

FLEXLINE

Quality at high outputs

A powerful new combined solution!

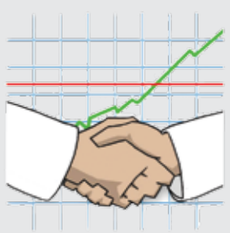
The new powerful generation iX systems combine with the flexible iFlex equipment. They harmonize into a single line solution, combining high quality placement with high throughput. And with the iFlex T2's combined speed and component range, this provides the ideal balance between chipshooting and end-of-line placements.

The iX introduces even higher accuracy, new component ranges, increased output for camera aligned components, new lightweight intelligent iFeeders, new NPI features, and full integration with the iFlex platform.

Related Services

Assessment Services

Recommendations for guaranteed efficiency and yield improvements follow an on-site assessment by Assembléon.



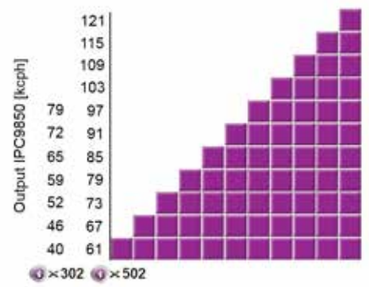
GO GREEN

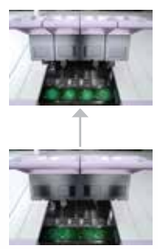
Save energy

This line consumes only 300 Nl/min compressed air @ 110,4 kcph.

True capacity on demand

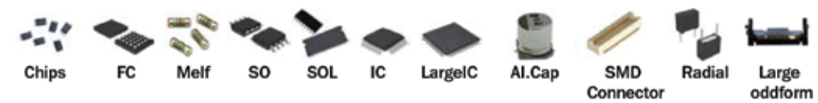
- Output scaleable per (typical) 6,000 cph steps
- Always a match with required capacity
- Grow capacity without increasing floorspace





Wide component range

	iX 302, iX 502	iFlex T2	iFlex H1
Minimum component size	0.4 x 0.2 mm	0.4 x 0.2 mm	0.6 x 0.3 mm
Maximum component size	45 x 45 x 10.5 mm	45 x 45 x 15 mm	120 x 52 x 35 mm



Grippers

- User configurable for maximum flexibility
- Dot codes ensure use of correct gripper

Trolleys

- Exchangeable (within 1 minute)
- Tape cutting (optional)

Exchangeable Tray feeder

- Unique fast tray caching for consistent high tray speed across all applications

Feeding for many packing types

Tapes

Sticks

Trays

Label

Bowl

Oddform

iFLEX

Quality in a flexible package

The iFlex adds flexible production, matching the industry trend towards high-mix production. iFlex virtually eliminates product change-over times to maintain maximum throughput whatever is on the line. iFlex is a complete series of machines in one. Three types of modules can be configured in any combination to meet all production needs and volumes efficiently.

Independent Dual Lane

iFlex comes in a single-lane or independent dual-lane configuration. The independent dual lanes bring lane flexibility and allows you to assemble a variety of boards simultaneously and independently in a single manufacturing line: independent dual lane is like buying two lines for the price of one.

Segmented changeover

Changeover can already be initiated at the modules that have finished the current job while downstream modules are still producing.

Related Services

Performance Optimization

Value driven improvement recommendations based upon frequent data monitoring and expert analysis.

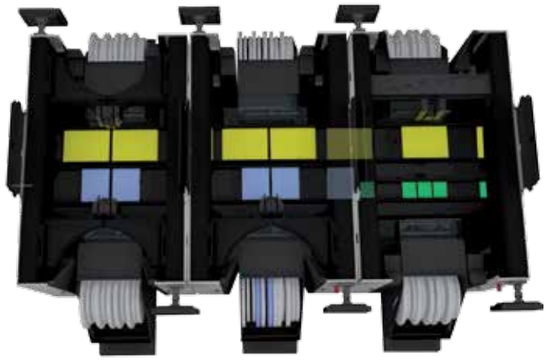
GO GREEN

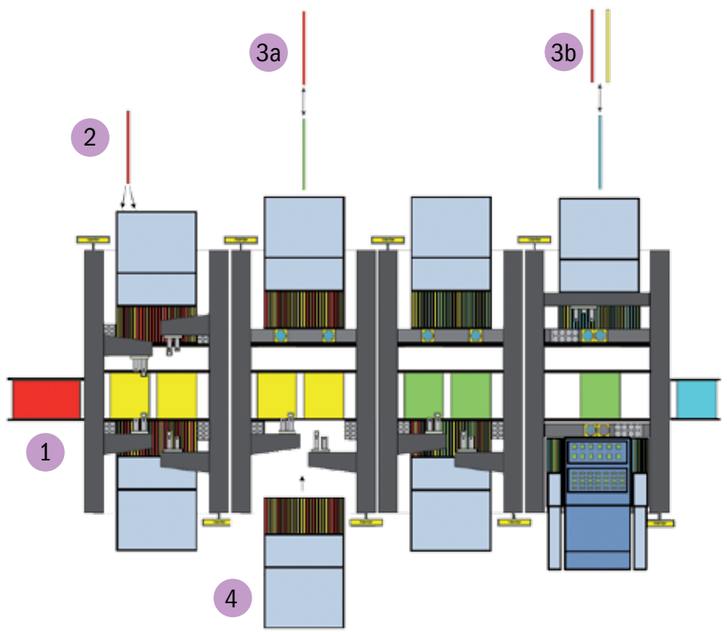
Save energy

This line consumes only 490 Nl/min compressed air @ 133,4 kcph.

Constant flow of boards

- In-machine buffer positions eliminate daily line dynamics problems
- Unique fast tray caching for consistent tray speed across all applications



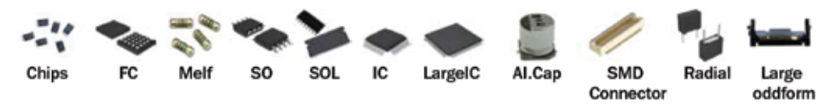


Segmented changeover

- Automatic conveyor adjustment (1)
- Random feeder placement (2)
- Feeder exchange on the fly (3a, 3b)
- Fast trolley exchange (4)

Wide component range

	iFlex T4	iFlex T2	iFlex H1
Minimum component size	0.4 x 0.2 mm	0.4 x 0.2 mm	0.6 x 0.3 mm
Maximum component size	17.5 x 17.5 x 15 mm	45 x 45 x 15 mm	120 x 52 x 35 mm

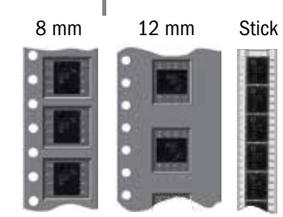


Grippers

- Incl. 10 jaw sets for large gripper range
- Dot codes ensure use of correct gripper

Fast online changes

- Easy to use editors
- Complete program for product can be edited at any module
- Component teach: Pick first component right-first-time. Eliminate tape tolerances



Material change flexibility

- Automatically adapts to new package
- Automatically adapts to new orientation

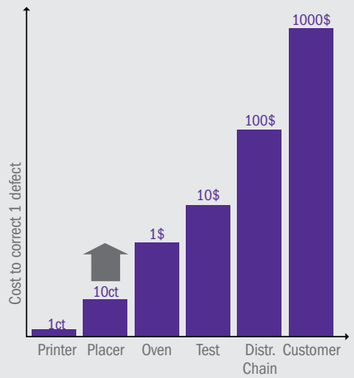
Exchangeable Tray feeder

- Unique fast tray caching for consistent high tray speed across all applications

Cost control

Lowest product lifecycle costs

Product quality is key. At each manufacturing step, the costs involved in scrapping or repairing failures at a later stage become higher. Additionally, total product life-cycle costs are reduced by storing 100% detailed traceability data. When quality is at risk, it can be narrowed down to exactly the batch that is involved. That limits warranty, liability, service and/or recall costs to the absolute minimum.



Manufacture right-first-time

Related Services

Remote support

- 24/7 support
- Resolve errors fast
- First-time-right parts shipments

Designed for low maintenance

- Less than 50 hours per year
- Accessible
- Detailed diagnostics
- Clear visual instructions & help files
- Modular system for quick replacements and fast return to production

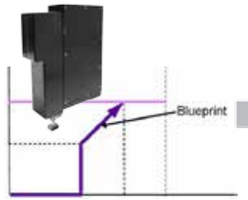
100 % Traceability

Material Management

- Incoming material registration
- MSD control
- Reel expiration control
- Approved vendor
- Component blocking

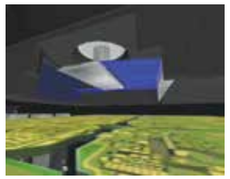
Material information

- Feeder serial number
- Reel ID or Part number
- Vendor and log code
- Date and Time used
- Operator ID



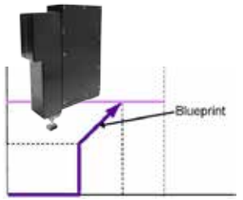
Pick according to blueprint value

(page 2 & 3)



100 % component monitoring

(page 2 & 3)



Placement according to specified value

(page 2 & 3)

Traceability data/ report

- Reference designator level
- Real time
- Open CAMX protocol

Overall Equipment Effectiveness

Reliable feeding, all the time

- Feeder maintenance monitoring
- Real-time index count monitoring
- On machine maintenance indication

Just in time supply of reels to production line

- Real-time
- Accurate component consumption registering
- In-time warning of reels running empty

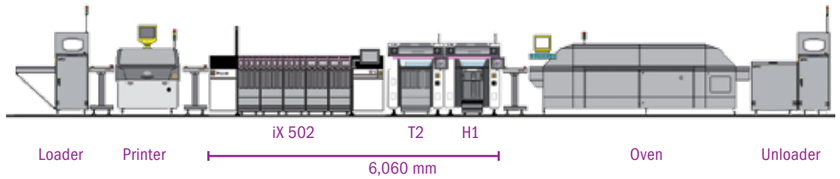
Identify and correct line bottlenecks

- Machine and line monitoring
- Changeover time monitoring
- Pick rate performance monitoring
- Reporting

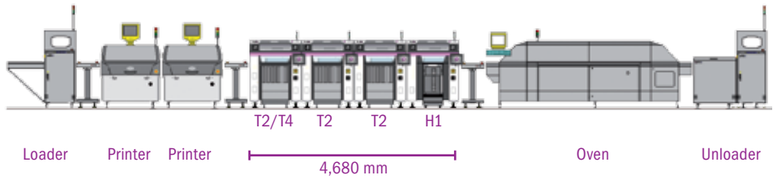
Line solutions

Application: Safety Electronics
For Safety / liability / 100% traceability products where product quality counts most. A safe <1 dpm placement solution.
Line solutions available in single lane as well as dual lane.

Safety Electronics:	91,400 ~ 152,400 cph (IPC 9850)
Production volume:	High volume - Low Mix
Processes:	Package on Package, 01005
Feeding capacity:	476
Tray capacity:	30 + internal tray

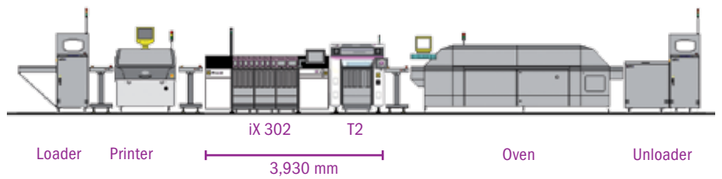


Safety Electronics (dual lane):	80,000 ~ 133,400 cph (IPC 9850)
Production volume:	High volume - High Mix
Processes:	Package on Package, 01005
Feeding capacity:	472
Tray capacity:	30



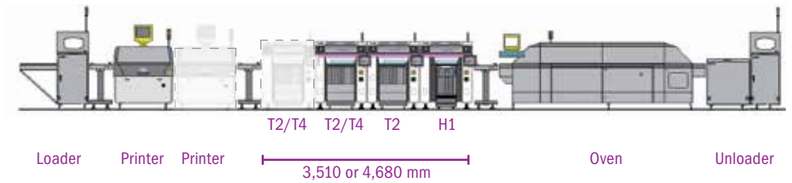
Application: High End Industrial
Applications requiring very high accuracy or high-density components of various heights.

High End Industrial:	60,300 ~ 101,300 cph (IPC 9850)
Production volume:	High volume – Medium/Low Mix
Processes:	0201, QFP
Feeding capacity:	284
Tray capacity:	2 (internal tray)



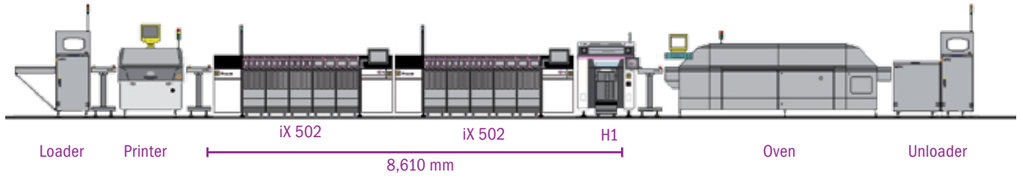
Application: High Mix Electronics
High-end high-mix quality electronics with 30 to 70% part commonality with family setup and fast segmented changeovers.

High Mix (dual/single lane):	55,700 ~ 133,400 cph (IPC 9850)
Production volume:	Medium volume – High Mix
Processes:	Package on Package, 01005
Feeding capacity:	472 / 344
Tray capacity:	30



Application: High End Consumer
Reduce rework costs by 70 % for high-end consumer products with high BOM costs.

High End Consumer:	127,100 ~ 249,100 cph (IPC 9850)
Production volume:	Very high volume – Medium/Low Mix
Processes:	Package on Package, 01005
Feeding capacity:	632
Tray capacity:	30



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Assembléon's multiple award-winning service includes web-based ordering of original parts at competitive prices – 24/7.

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FLEXLINE

< 1 dpm
placement solutions

	iX		iFLEX		
Specifications	iX 502	iX 302	iFlex T4	iFlex T2	iFlex H1
Maximum output per hour	165k	99k	70k	35k	9k
Maximum output IPC 9850/9850A	121k	79k	51k	24.3k	7.1k
Placement accuracy Cpk > 1	35 micron for chips 25 micron for QFP	35 micron for chips 25 micron for QFP	40 micron for chips	40 micron for chips 35 micron for QFP	40 micron for chips 25 micron for QFP
Minimum component size	0.4 x 0.2 mm (01005)	0.4 x 0.2 mm (01005)	0.4 x 0.2 mm (01005)	0.4 x 0.2 mm (01005)	0.6 x 0.3 mm (0201)
Maximum component size	45 x 45 mm (1.77 x 1.77”)	45 x 45 mm (1.77 x 1.77”)	17.5 x 17.5 mm (0.69 x 0.69”)	45 x 45 mm (1.77 x 1.77”)	120 x 52 mm (4.72 x 2.05”)
Maximum component height	10.5 mm (0.41”)	10.5 mm (0.41”)	15 mm (0.60”)	15 mm (0.60”)	35 mm (1.38”)
Programmable placement force (in steps of 0.1 N)	1.5 to 8 N	1.5 to 8 N	1.5 to 8 N	1.5 to 8 N	4.0 to 40 N
Minimum board size Minimum board size (optional)	50 x 50 mm (2 x 2”) 50 x 25 mm (2 x 1”)	50 x 50 mm (2 x 2”) 50 x 25 mm (2 x 1”)	50 x 50 mm (2 x 2”)	50 x 50 mm (2 x 2”)	50 x 50 mm (2 x 2”)
Maximum board size: - Single lane - Single lane optional - Dual lane (per lane)	 515 x 390 mm (20.3 x 15.4”) 800 x 457 mm (31.5 x 18”) N/a	 475 x 390 mm (18.7 x 15.4”) 800 x 457 mm (31.5 x 18”) N/a	 555 x 558 mm (21.8 x 23”) 845 x 558 mm (33.3 x 22”) 555 x 254 mm (21.8 x 10”)	 555 x 558 mm (21.8 x 22”) 845 x 558 mm (33.3 x 22”) 555 x 254 mm (21.8 x 10”)	 555 x 558 mm (21.8 x 22”) 845 x 558 mm (33.3 x 22”) 555 x 254 mm (21.8 x 10”)
Board thickness	0.3 to 6 mm (0.01 to 0.24”)	0.3 to 6 mm (0.01 to 0.24”)	0.3 to 6 mm (0.01 to 0.24”)	0.3 to 6 mm (0.01 to 0.24”)	0.3 to 6 mm (0.01 to 0.24”)
Board material	FR4, flexfoil, ceramic, etc.	FR4, flexfoil, ceramic, etc.	FR4, flexfoil, ceramic, etc.	FR4, flexfoil, ceramic, etc.	FR4, flexfoil, ceramic, etc.
Automatic toolbit exchange	Nozzles	Nozzles	Nozzles	Nozzles	Nozzles, grippers
Maximum tape feeding positions (8 mm)	260 twin tapes 130 single tapes	156 twin tapes 76 single tapes	64 single tapes 128 twin tapes	64 single tapes 128 twin tapes	71 single tapes 142 twin tapes
Feeding options	tape, stick	tape, stick	tape, stick	tape, stick, tray	tape, stick, tray, tubes
Data interfaces traceability	CamX	CamX	CamX	CamX	CamX
Footprint (L x W)	3,720 x 1,705 mm (146.46 x 67.13”)	2,760 x 1,705 mm (108.66 x 67.13”)	1,170 x 1,844 mm (46.06 x 72.60”)	1,170 x 1,844 mm (46.06 x 72.60”)	1,170 x 1,844 mm (46.06 x 72.60”)

For extended specifications, please contact Assembléon.

Quality Assured

GO GREEN

Assembléon and the environment
Energy is crucial for manufacturing – and becoming more expensive, scarce and critical for production facilities that operate 24/7.
In an effort to reduce carbon footprint, it is Assembléon's mission to not only innovate to produce the best equipment, but also to be the industry's benchmark leader for best use of energy.

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