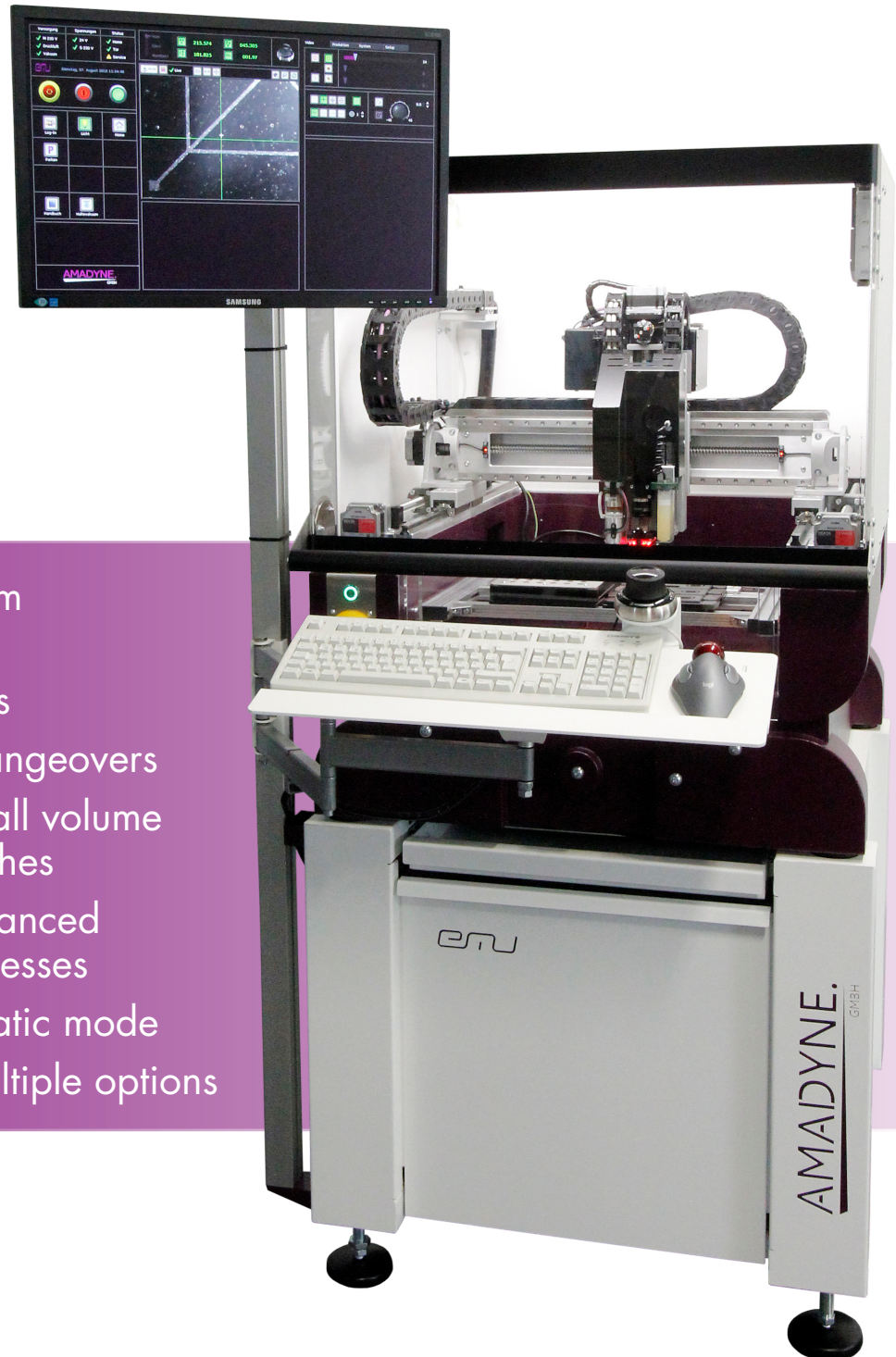




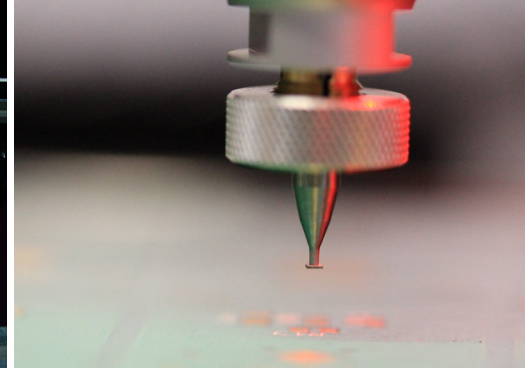
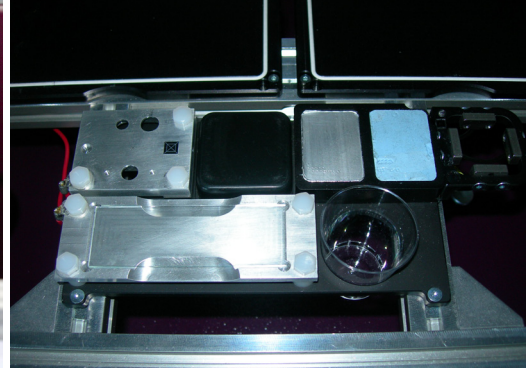
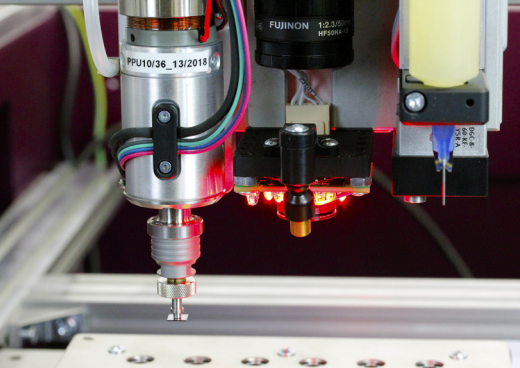
Flexible Micro Assembly System



- Stand alone system designed for
 - short setup times
 - fast product changeovers
 - prototype & small volume production batches
 - standard & advanced packaging processes
- Manual or automatic mode
- Versatility with multiple options

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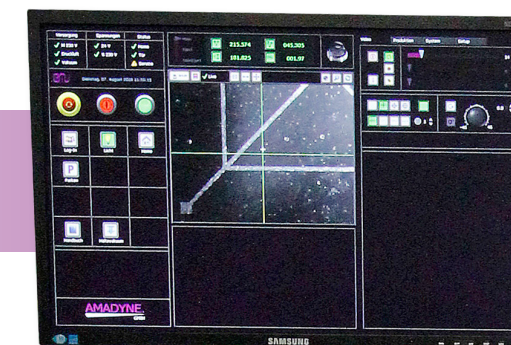
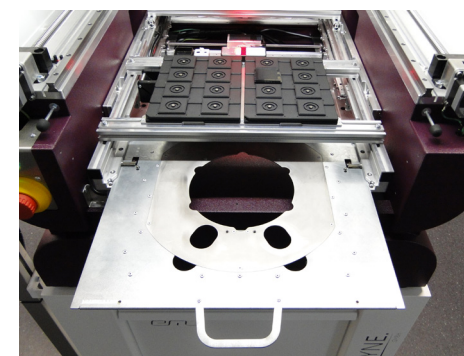
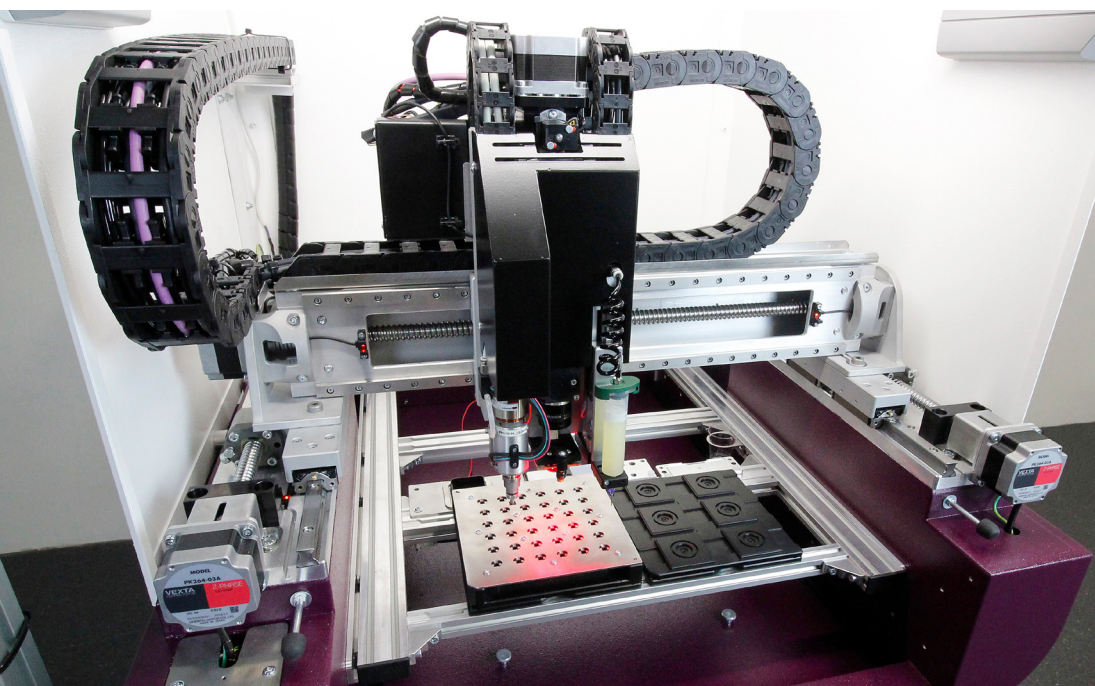


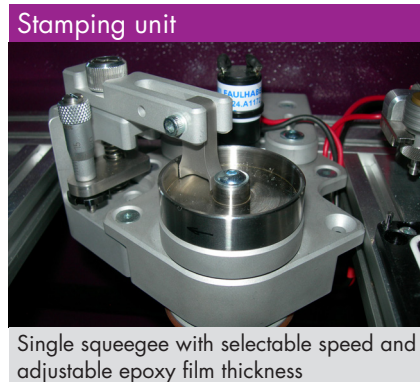
The EMU is an automatic Micro Assembly System for picking up and placing of components from various presentation formats, as well as applying adhesives. Typical applications include: manufacturing of prototypes, samples, small series production or process evaluations utilising micro system technology.

Easy to setup, programme and operate, the machine enables manufacturing of technologies like Chip on Board – COB, Multichip Modules – MCM, Chip-on-Chip – COC, Flip Chip and RF Devices etc., using eutectic soldering, sintering, plus other adhesive and die-attach process.

Key features

- 300 x 350 mm assembly area in the xy axis
- Versatile hardware configuration for advanced packaging applications
- Options including: toolbox, dispenser, chip eject system, eutectic station and upward looking camera etc.
- Short product setup and change-over times
- Robust “Linux” based software architecture
- Proven user interface, easy to program and operate



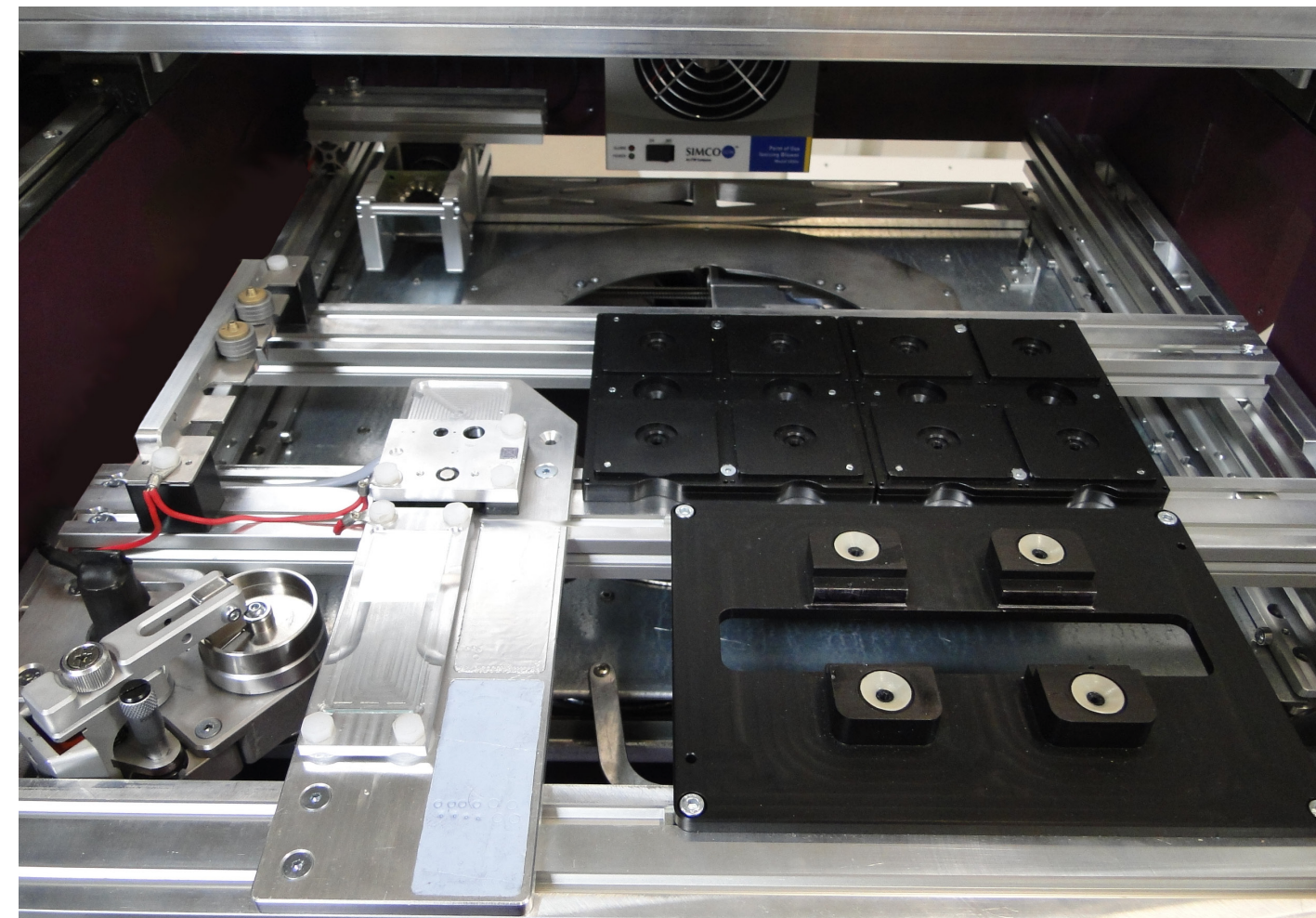
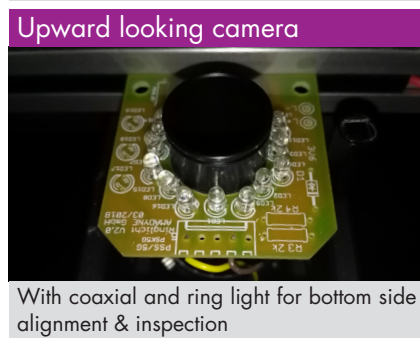
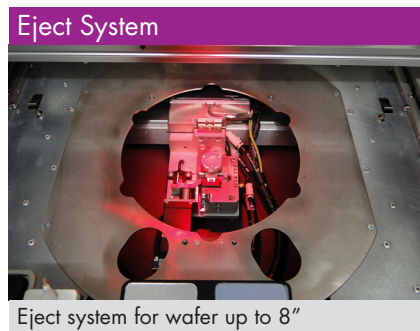
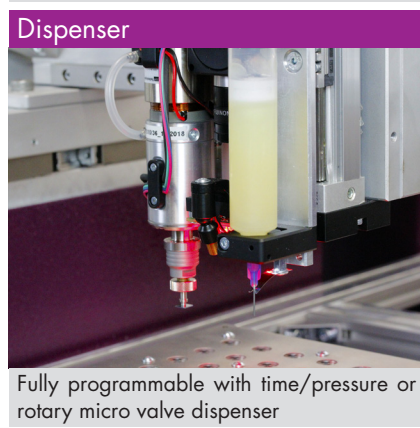
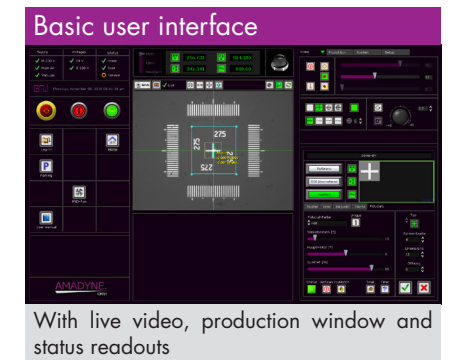


Hardware Basics

- Compact, mineral molded casting provides machine stability
- PC system with quad core processor
- Precision hybrid stepper motors for all axes
- Full 360° tool rotation

Software Basics

- Open software architecture with SQL backend
- GUI, graphical user interface supported with expert panels
- Linux 4.x operating system
- Image recognition, feature based with pattern matcher, circle, edge and ink dot matching
- Easy to operate and program

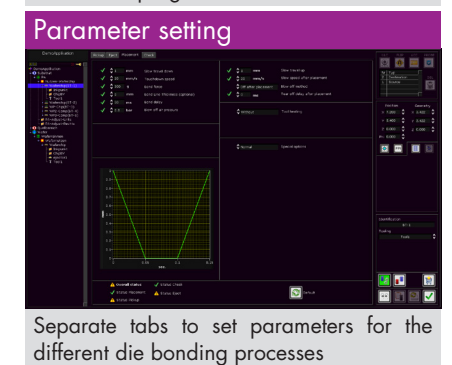
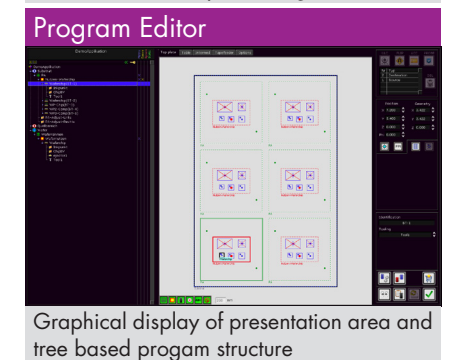
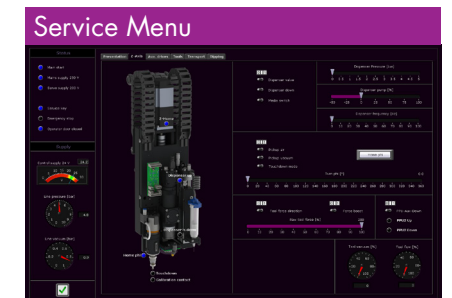


Options

- Toolbox
- Dispenser system
- Upward looking camera
- Eutectic unit
- Stamping unit
- Chip eject system

Options

- Wafermapping
- Post-place inspection
- Remote application support & maintenance system
- Manual pick & place mode
- Tracking of production data



Specification EMU Stand alone Micro Assembly System

Micro Assembly System for variety of technologies and processes

Advanced Packaging technologies like COB, MCM, FC, COC, eutectic soldering and others.

Testing, sorting and inspection of components from any presentation form.

Integration of customer specific requirements.

PC system	
PC	Min. 3.5 GHz, Intel quad core series CPU, SSD min. 250 GB, 2048 MB RAM
Operating system	Linux 4.x, 64 bit
Programming	Teach in mode with expert panels for operator assistance
Data Storage	Solid State Drive / flash drive
User Interface	Keyboard, Trackball, Space navigator, 22" wide screen TFT-monitor
Data transfer	Ethernet / IP interface to different operating systems
Software	
User Interface	GUI, full graphical user interface
Operator Interface	Icon driven interactive operation with shiftable additional texts, dialogue menus in German, English, French or Russian
Indication Instruments	Integrated in graphical user interface
Live Video	Camera live video fully integrated into the user interface, video snapshot function, main image processing feature based matching, pattern (independent of rotation), circle and ink dot matching
Programming	Dialogue windows for standard operation
Joypad axis movement	Space navigator and keyboard, selecting the position displayed in the video screen
Standard auxiliary	Automatic routines for offset calibration of tool and dispenser, automatic camera calibration
Camera system	
Camera	Industrial USB series camera (different resolutions available)
Objective	Typical field of view 3.8 x 3.0 mm *
Illumination	LED ring light fixed to camera, coaxial and side light *
Handling system	
System design	Standalone version
Working area	12" x 14" (300 mm x 350 mm)
Z-axis movement	Up to 110mm
Clamping system	Customized plates for mechanical or vacuum clamping, easy exchangeable
Materials & Substrates	
Chip dimension	0.01" up to 1" (0.25 mm up to 25 mm), other chip dimension upon request
Max. Component height	1" (25 mm)
Component presentation format	Waffle Pack 2" or 4", Gel Pak VR trays 2" or 4", tape strips, customer specific carrier *, bulk goods format * Wafer on blue foil
Destination formats	Waffle Pack 2" or 4", Gel Pak 2" or 4", boat, ceramic board, PCB, packages, customer specific formats *

Machine capability	
Axis resolution	< 1 µm xy axis, < 1 µm z axis, < 0.03 ° rotational axis
XY-Axis repeatability	±10 µm @ 3 sigma
Rotational repeatability	Up to ± 0.12 ° @ 3 sigma *
Pick&Place repeatability	±25 µm @ 3 sigma, ± 0.5 ° @ 3 sigma (standard version) *
Placement feature	Full 360 ° rotation, integrated touch down sensor, magnetic pickup tool holder for standard, shank (Ø 3.175 mm, length 16 mm or 19 mm)
Bond force	30–1500 g steplessly adjustable * lower bondforce upon request
Axis speed	Max. 175mm/sec xy axis, max. 150mm/sec z axis, max. 360 ° 1/sec
Placement rate	Up to 250 CPH *
Mains	
Voltage, Frequency	230 V, 50/60 Hz
Power-, Current consumption	Max. 1 KVA, max. 10A
Air pressure and vacuum	5,0 bar (72.5 PSI) , 0,8 bar (25 inches HG)
Dimensions and weight	
Width, depth, height	780mm, 800mm, 870mm
Weight	Max. 400 kg, depending the configuration

Options (not included in the standard machine)

Toolbox	Up to 5 different pickup tools, max. tool diameter is 15mm
Dispensing	Pressure / time dispenser or rotary micro valve dispenser, dispensing of dots or patterns possible *
Stamping unit	Rotating squeegee unit, selectable speed, constant epoxy film thickness through manual or motor driven adjustable micrometer screw **
Uplooking camera	Industrial USB series camera (different resolutions available), typical field of view approx. 3.5 mm x 4.7 mm *
Eutectic unit	Substrate size up to 30mm, max temp. 500°, inert gas flooding process area * **
Chip eject system	1 x Wafer up to 8" single eject unit, single or multiple needle for chip size from 0.2 up to 25 mm **
Tape Feeder	For 8, 12, 16 and 24 mm tape, maximum 9 lanes with 8 mm tape
Software options	
Inspection	Post-place inspection , inspection of the chip after placement
Wafer mapping	SEMI Standard G81/G85; chip size > 1.5 mm
Traceability	Production data is saved to a text file
Remote maintenance system	AMADYNE specific option for hardware monitoring functions, debugging, application support and hardware diagnostics. (RMS require Internet connection)

* Modifications and detailed information on request

** Not all options can be combined together in one system. More information on request.

We reserve the right to make design and engineering changes to the product, in order to improve its performance and flexibility.

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