



# YRM20 **NEW**

## SMT Innovation

### Premium High-Efficiency Modular Mounter

All-round surface mounter with Yamaha's 1-head solution delivers superior productivity and versatility!

Maximize your productivity  
2-beams – 2-heads with highest speed in its class  
**115,000 CPH** (under optimum conditions as defined by Yamaha Motor)

The 1-head solution! No need to exchange heads!  
**0201 mm to 55 x 100 mm**  
component size

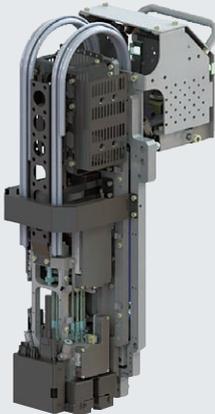
Deliver highest mounting quality due to new  
**Low-impact nozzle**

For non-stop tray replacement  
**eATS30**

## FEATURE 1 Any mix and any volume: highest productivity

### NEW High-speed general-purpose rotary RM head achieves 115,000 CPH!

Rotary head boosts component mounting of super-tiny to large size components. This results in both high-speed production and flexibility, where head replacement is no longer needed. This is the Yamaha 1-head solution technology concept. This mounter can handle components ranging from super-tiny 0201 mm components up to medium-sized odd-shaped components with heights of 6.5 mm, and 12 x 12 mm dimensions.



### IN-LINE HM head

Universal type head provides full versatility to support high-speed handling ranging from super-tiny 0201 components on up to large-size components of 55 x 100 mm and heights to 15 mm. Combining these with RM heads delivers high-speed pickup and mounting of all types of components.

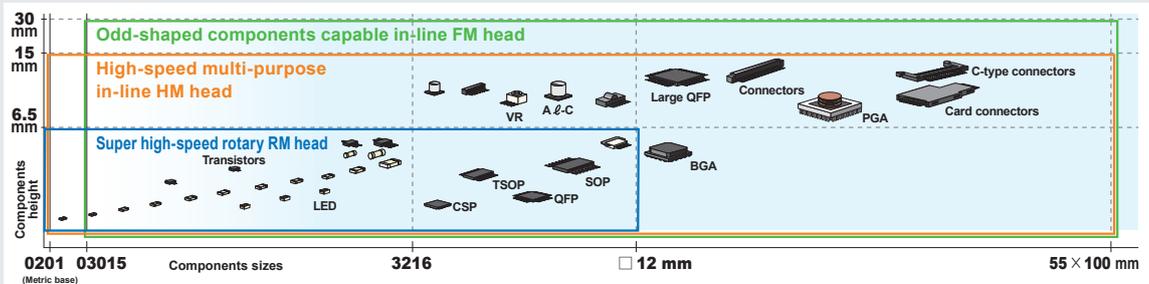


### NEW Odd-shaped components capable in-line FM head

The ultra-wide-range head handles components ranging from super-tiny 03015 mm chips on up to ultra-large components of 55 x 100 mm and heights of 30 mm. Force control is standard-supported up to 30N.



Handles various types of components



## FEATURE 2 Fusion YSM series with $\Sigma$ Sigma technology

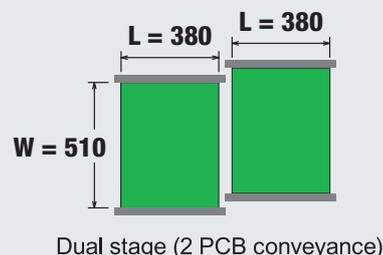
### NEW Overdrive motion

Utilizes the overdrive motion concept from  $\Sigma$  technology that minimizes the interference range between 2 heads to achieve higher productivity.



### NEW Dual-stage conveyor

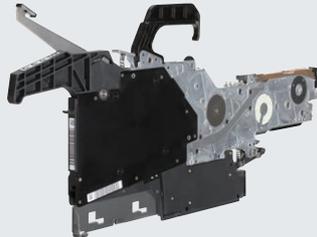
The dual-stage conveyor has evolved to an even higher level, with better PCB support and handling (maximum PCB width 510 mm). High-speed PCB conveying drastically cuts the time needed for PCB changeovers.



**FEATURE 3** Compact, light and reliable feeding solutions

**NEW ZSR Feeder**

This new 8-mm high-speed feeder is capable of supporting RM heads to achieve highest productivity. Component feed speed drastically improved, which supports ultra-high-speed RM head component pickup at highest levels in industry.



Feeder type	ZSR feeder 8 mm width
Applicable carrier tape specifications	Width 8 mm, Maximum thickness 1.0 mm Material Paper/Emboss Feed pitch setting 1 mm/2 mm/4 mm/8 mm
Applicable reel specifications	Width 14.4 mm or less, Φ 382 mm or less
Option	Build-in Splice sensor

**ZS Feeder**

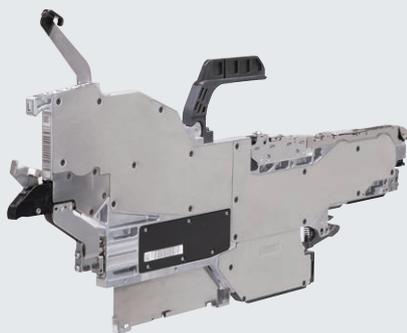
The ZR feeder is the 2<sup>nd</sup>-generation electrical feeder. Supports thin, light-weight 750-gram, compact, single lane type motorized intelligent feeders. Customers can select from non-stop feeder replacement function. YRM20 machine also supports 1<sup>st</sup>-generation electrical feeders SS/ES type.



Feeder type and tape width	ZS feeder 4 – 12/16 – 24 – 32 – 44 – 56 – 72 – 88 – 104 mm width
Applicable carrier tape specifications	Pocket depth 17/25 mm Maximum thickness 1.0 mm Material Paper/Emboss Feed pitch setting 2 mm/4 mm/8 mm/12 mm/ 16 mm/20 mm/24 mm/28 mm/ 32 mm/36 mm/40mm
Applicable reel specifications	Φ 382 mm/15 inch or less
Option	Build-in Splice sensor

**ALF Auto Loading Feeder**

The Auto Loading Feeder can supply new tapes in just 5 seconds! Just by inserting a tape without stopping the machine. No recovery of top tape is needed, which vastly increases the operating rate. Supports YS/YSM series mounter with tape-cutter. Supports IT options, and can provide part insertion error preventer and preset display.



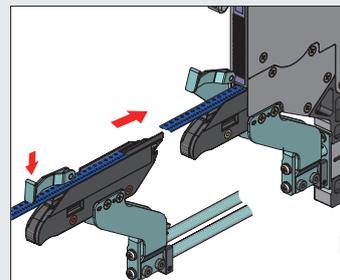
**Top tape anti-peeling technique**

Unique center-open method reduces part pickup errors occurring due to static electricity and fiber residue from peeling tape.

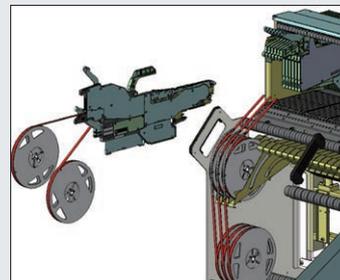


**Superb operability**

Tape setting mechanism designed for easy operability.



Super-easy to set since it easily pulls out from the feed position even with feeders on both sides.



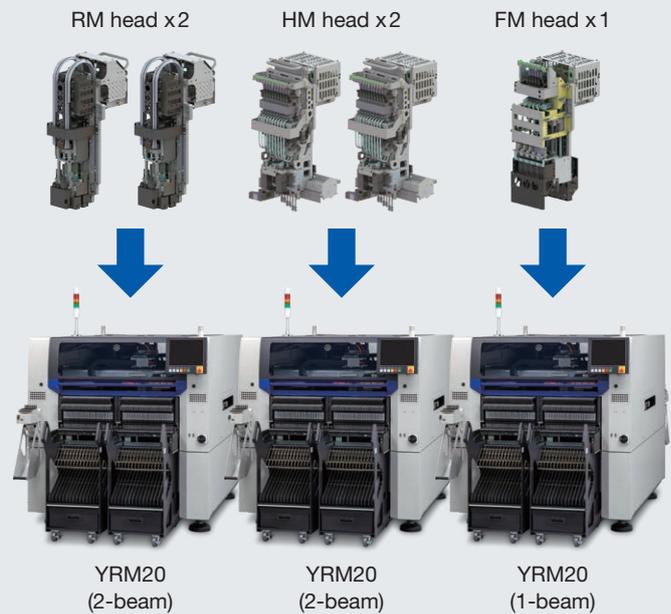
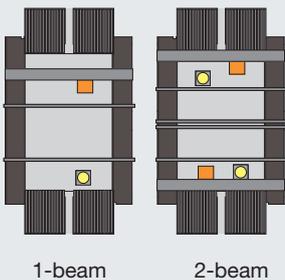
Two reels can be set anytime regardless of part feed timing.

Feeder Type	4 types: 2S (0603+1005)/M (1608)/L (2012)/LL (3216)
Applicable components	0603 to 3216 mm
Tape loading time	Approx. 5 sec From tape feed start to pickup preparation completion.

### FEATURE 4 Broad-range production capacity

#### Configuration variations

YRM20 is the ideal platform for your current and future flexible mounting requirements. Always having good mounting performance and versatility at the best quality. The YRM20 platform offers 1-beam and 2-beam for a x-axis configuration and selectable RM-, HM-, or FM-head to match budget and mounting capabilities.

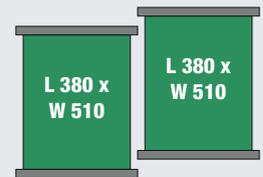


#### Handling large PCBs

The YRM20 maximum efficiency can be reached due to the unique dual stage conveyor system that can handle simultaneously 2 boards up to L 380 x W 510 mm, and even this system can handle large boards up to L 810 x W 510 mm.



Dual stage, single lane  
(1 PCB conveyance)



Dual stage  
(2 PCB conveyance)

### FEATURE 5 Ensures high production efficiency with full range of options

#### **NEW** Non-stop tray feeder eATS30

Provides a nonstop supply of tray components loading on a single pallet or complete magazine unit with 10 pallets at once. Achieves streamlined refilling of tray components and non-stop production.



#### Automatic push-up pin exchange system

This system automatically positions the pushup pins. Using it along with the automatic program change over function drastically reduces the workload during production changeovers.



#### Fixed or Feeder exchange system

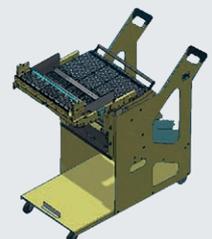
The YRM20 can be selected with Fixed Feeder banks for low mix, large batch sizes applications or with Feeder Exchange System (FES) for high mix, low batch sizes all at highest possible output.



Fixed feederbanks



Feeder exchange carts

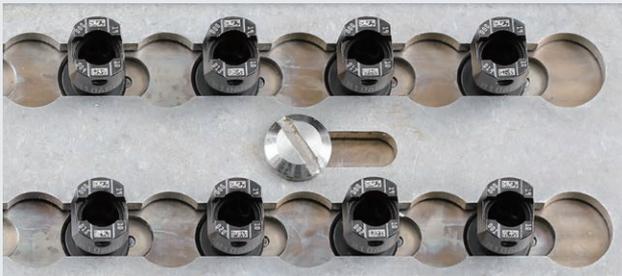


**FEATURE 6**

Standard features for ease of use to maintain high quality production!

**NEW** Low impact nozzle gives high-quality mounting

Lightweight nozzles are essential standard equipment for ensuring high-speed, low-impact mounting, which is essential for mounting ultra-small components next to each other in narrow spaces. These nozzles come with nozzle IDs and improved nozzle health check features.



**Nozzle cleaning station**

Automatic cleaning function, passing high-pressure air through spline and nozzle, keeps nozzles clean for extended periods.



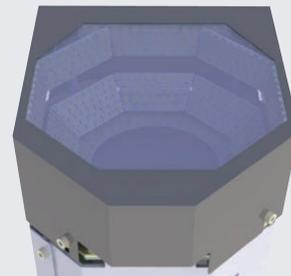
**Tape-cutters**

YRM20 is standard equipped with tape cutters. Intelligent tape length calculation will cut all carrier tapes to maximum length (default 80 mm). Reliable and long-life-time cutter knife due to special coating preventing any tape from sticking to the tape cutter system.



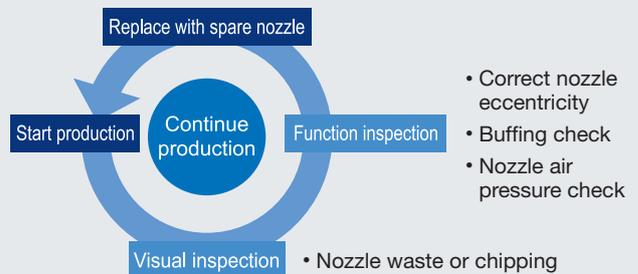
**NEW** Vision system further enhances component mounting quality

Component recognition cameras can flexibly switch between line imaging and area imaging. Side-view cameras improve quality during mounting of tiny components. A coplanarity checker which can optionally be implemented in the multi-camera enables extra detection of chipped-off BGA ball and floating leads.



**Nozzle health care – feeder maintenance warnings**

Self-diagnosis and self-recovery functions continuously maintain nozzles and feeders in a clean state for continuous high-quality production.



**NEW** State-of-Art GUI design

Easy-viewing graphical user interface design for optimal touch screen operation. Operator mode improves machine operability during production and setups/changeovers. Change user interface to other language with just one click.



**FEATURE 7**

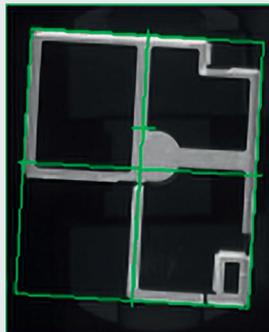
Many standard high-end functions for easy and zero defects operation

**Es-Vision Automatic component data creation**

Es-vision makes it very easy to create any component data automatically in 3 simple steps:

1. Create pickup settings of nozzle type & feeder position.
2. Pickup component and capture image to analyze automatically component type, shape and all dimensions.
3. Optimize lighting settings and save the created data into the global component database.

Easy & Quick.



**Automatic component height teach**

Automatic height teach measures pick height properly by checking vacuum level. For tape & reel the head goes to the tape guide of a feeder, for tray components the head moves to center of component in tray and with high precision vacuum level detects the precise pickup height.



**High-speed smart recognition**

Highly robust "High-Speed Smart Recognition" that also creates recognition data for custom or unique components in a short time. This unique function is standard available for any component that doesn't match with standard component algorithms.



**STEP 1**  
Image load +  
contour edit

Generating data usually  
takes 1 minute.



**STEP 2**  
Recognition  
parameter  
settings

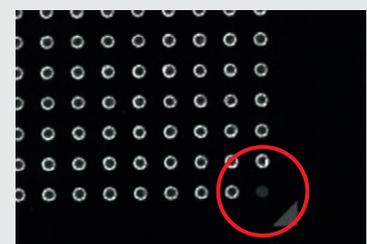
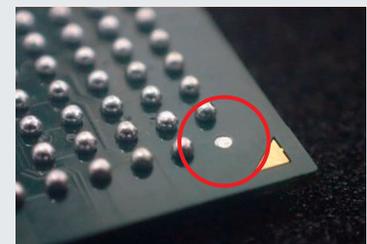
**STEP 3**  
Recognition  
test

**Wide FOV scan camera with side-view function**

The side-view function detects pickup status and component presence with no time loss. The wide scan camera component range goes up to □12 mm including BGA missing ball detection by using the smart side-light system.



Upside down  
detected



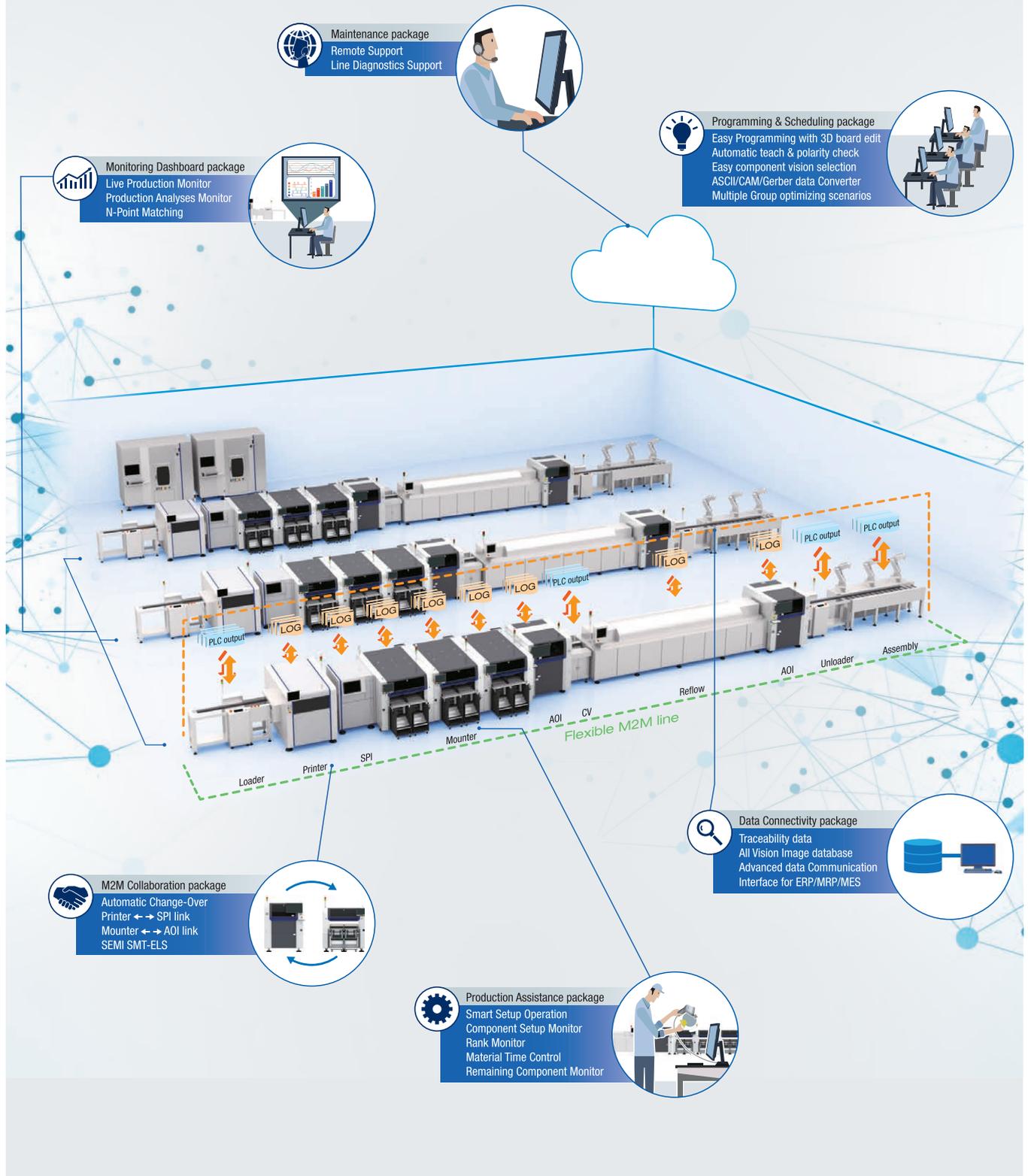
With Side Light

## YAMAHA Intelligent Factory

YSUP software packages improve process control for the complete factory environment. These intuitive and hassle-free solutions provide real-time visibility for quick decision making. YSUP provides decision makers the ability to manage assets and resources more efficiently. In turn allowing for organizations to plan their future goals and meet industry standards.

# YsUP

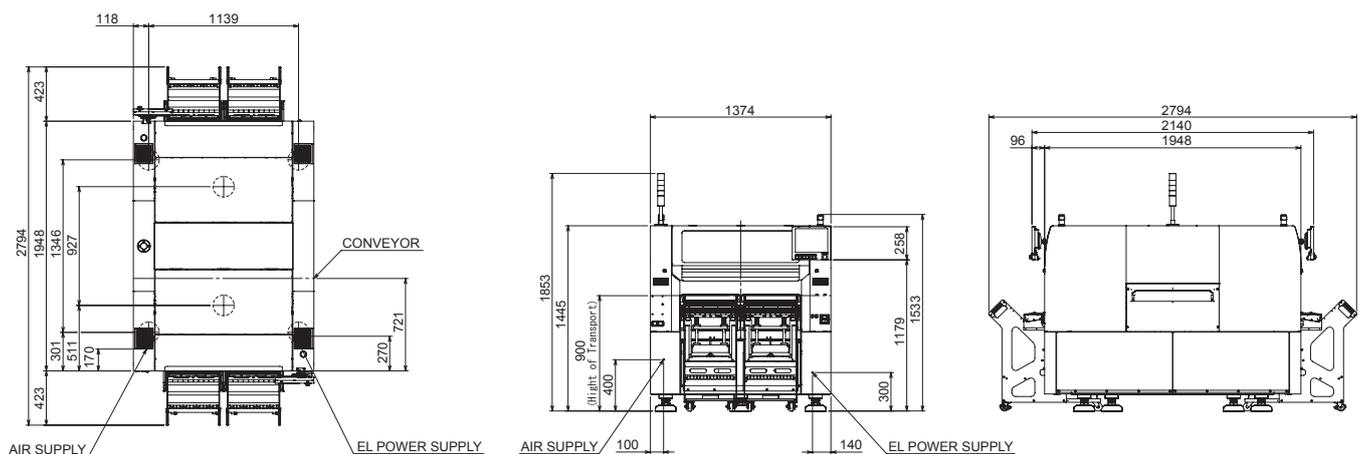
Yamaha's Unique & Proven solutions



**YRM20**

Specifications	Super high-speed rotary RM head	High-speed general-purpose in-line HM head	Odd-shaped components in-line FM (flexible-multi) head
Nozzles (per 1-head unit)	18	10	5
Applicable components	0201 mm to W 12 x L 12 mm, Height 6.5 mm or less	0201 mm to W 55 x L 100 mm, Height 15 mm or less	03015 mm to W 55 x L 100 mm, Height 30 mm or less
Mounting capability (high-production mode)	2-beam	115,000 CPH* 78,000 CPH IPC9850	35,000 CPH* 31,000 CPH IPC9850
	1-beam	57,500 CPH* 39,000 CPH IPC9850	17,500 CPH* 15,500 CPH IPC9850
Mounting accuracy (high-accuracy mode)	±0.025 mm Cpk ≥ 1.0*		±0.035 mm Cpk ≥ 1.0*
Number of component types	Feeder carriage exchange tape & reel 128 types = 4 x 32 feeders, 8 mm width Fixed plate: tape & reel 128 types = 4 x 32 feeders, 8 mm width Trays: 30 pallets per eATS30, max 2 eATS30/machine		
PCB dimensions	2-beam	Dual-stage specification 1-PCB conveyance: L 50 x W 50 mm to L 810 x W 510 mm 2-PCB conveyance: L 50 x W 50 mm to L 380 x W 510 mm	
	1-beam	Single stage specification L 50 x W 50 mm to L 810 x W 510 mm	
Power supply	3-phase, AC 200/208/220/240/380/400/416 V ± 10 %, 50/60 Hz		
Air supply source	0.45 MPa or more, in clean, dry state		
External dimension (excluding projections)	L 1,374 x W 1,948 x H 1,445 mm		
Weight	Approx. 2,250 kg (main unit only)		

\*Under optimum conditions

**YRM20 external dimension**


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