# Integra™ Series: Model 508.4

Selective Soldering System combining Scalability and Throughput

Features and Benefits

- Four-zone operation with concurrent fluxing, preheating and soldering for increased throughput with maximum preheat capabilities

- Choice of single or dual drop-jet fluxers and solder pots for either simultaneous parallel or independent double processing modes

- Parallel processing significantly increases machine throughput while double processing broadens soldering flexibility

- Full titanium solder pots compatible with all solder alloys plus easy tool-free maintenance

- Software control between different solder alloys without changing solder pots

The Integra™ 508.4 is a multi-station selective soldering system designed for high-volume applications with maximum throughput. The Integra™ 508.4 has many unique features, including concurrent fluxing, preheating and soldering for faster processing time and reduced soldering cycle.

Versatility. With its flexible configuration, the Integra™ 508.4 is a versatile selective soldering platform and can be equipped for either single, parallel or double processing. Use of a single drop-jet fluxer and solder pot allows soldering of printed circuit boards as large as 508 x 508 mm (20.0 x 20.0 in.).
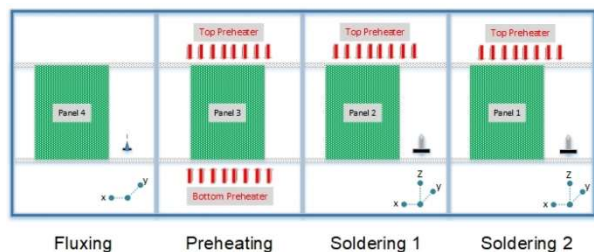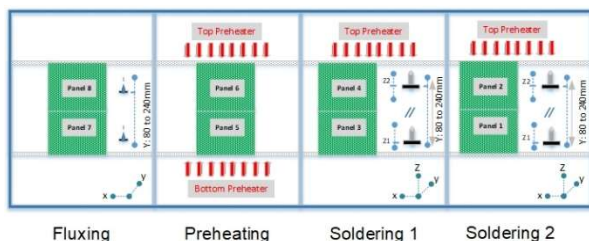

Integra™ 508.4S configuration

When configured with dual drop-jet fluxers and dual solder pots, the Integra™ 508.4 can be used in two different modes and is capable of processing up to 8 boards at one time. The parallel processing mode enables fluxing and soldering of two printed circuit boards at the same time doubling machine productivity.

Integra™ 508.4PD configuration

The double processing mode allows soldering with multiple size nozzles within the same program enhancing flexibility and increasing productivity. A single drop-jet fluxer and dual solder pots can be used in the double processing mode and is ideally suited for the use of two different solder alloys without requiring physical changing of solder pots.

Value. With a reputation for innovation, comprehensive process solutions from Nordson SELECT ensure a maximum return on investment and low cost of ownership. From initial process development through full-scale production, you are supported by our experienced worldwide engineering, applications development and technical service network.

Integra™ 508.4 Features

The Integra™ 508.4 is a fully configured SMEMA compatible selective soldering platform and is a reliable and cost-effective solution for many demanding through-hole and SMT mixed-technology soldering applications including:
- o   Double-sided TH/SMT assemblies
- o   TH selective and mini-wave soldering
- o   Multiple solder alloy soldering without changing solder pots

Parallel or double processing modes with dual fluxers and solder pots for simultaneous or independent soldering

Parallel mode solders two boards at same time, double mode allows multiple size nozzles in one program

Four-zone operation with concurrent fluxing, preheating and soldering for increased throughput

MicroDrop drop-jet fluxer standard and available dual MicroDrop drop-jet fluxers

Full titanium solder pots and pump assemblies compatible with all solder alloys

Single or dual fluxers and solder pots for increased productivity and flexibility
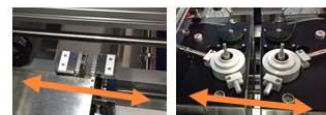
Automatically adjustable nozzle distance between 80-240 mm

SMEMA chain conveyor with automatic width adjustment

Standard Features

Four-zone operation with independent zones for concurrent fluxing and preheating plus two selective soldering stations (508.4S)

SMEMA chain conveyor with positive PCB location

Automatic conveyor width adjustment

MicroDrop drop-jet fluxer

Flux level sensing system

Full surface bottom-side infrared preheating

All titanium solder pot and pump assembly

Quick change magnetically coupled solder nozzle

Automatic solder pot level monitoring

Automatic wave height monitoring

Heated nitrogen inerting system

Process viewing camera

PhotoScan editor and machine control software
- -   Easy "point-and-click" programming
- -   Remote machine control
- -   Remote machine maintenance
- -   Network and FIS capability

TFT monitor

Additional Configurations

Dual MicroDrop drop-jet fluxers and dual solder pot and pump assemblies for parallel or double soldering modes (508.4PD)

Optional Features

In-process, closed-loop flux verification system for drop-jet control

Full surface topside infrared preheating

Closed-loop pyrometer control

Board warpage sensing system

Dual process viewing camera and second monitor

Automatic solder wire feeding system

Automatic solder level sensing system

Wave height control sensing system

Automatic solder nozzle cleaning system

AOI solder joint inspection system

Data logging system with traceability of all process parameters

Barcode reader

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Specifications: Integra™ 508.4

Motion System

Z accuracy	±50 µm (0.002 in.)
Z repeatability [1]:	±50 µm (0.002 in.), 3 sigma
Z velocity:	0.05 m/s peak (2 in./s)
X-Y accuracy	±50 µm (0.002 in.)
X-Y repeatability [1]:	±50 µm (0.002 in.), 3 sigma
X-Y velocity:	0.2 m/s peak (8 in./s)

Computer

PC with Windows® operating system

Software

PhotoScan "point-and-click" programming editor and machine control software

Solder Pot Capacity and Weight

Capacity [2]: Approx. 12.0 kg (26.4 lbs.)
Total weight of tin-lead solder together with solder pot and pump assembly [2]: Approx. 22.4 kg (49.2 lbs.)
Total weight of lead-free solder together with solder pot and pump assembly [2]: Approx. 19.7 kg (43.3 lbs.)

Solderable Area (X-Y)

Single, parallel or double operating mode [3, 4]:
Max. 508 x 508 mm (20.0 x 20.0 in.)
Min. 50 x 50 mm (2.0 x 2.0 in.)

Board Handling Capability

Max. board size: 508 x 508 mm (20.0 x 20.0 in.)
Min. board size: 50 x 50 mm (2.0 x 2.0 in.)

Conveyor

Max. board/carrier length:	508 mm (20.0 in.)
Min. board/carrier length:	50 mm (2.0 in.)
Max. board/carrier width:	508 mm (20.0 in.)
Min. board/carrier width [4]:	50 mm (2.0 in.)
Max. board/carrier thickness:	15.2 mm (0.6 in.)
Max. overboard clearance:	120 mm (4.7 in.)
Max. underboard clearance:	40 mm (1.5 in.)
Edge clearance [5]:	3 mm (0.12 in.), edge conveyor including on-rail clamps
Transport height:	Conforms to SMEMA standard for conveyor height; height adjustable from 940-965 mm (37.0 - 38.0 in.) from floor to bottom of board
Load capacity [6]:	7.5 kg (16.5 lbs.)
Operation modes:	Automatic (SMEMA), manual or pass-through

Facilities Requirements

System footprint: 4300 x 1700 mm (169.3 x 66.9 in.)
Compressed air: 6 bar min., 8 bar max.
Power (mains) [7]: Power supply accommodates 3 phase, 400VAC, 50-60 Hz, 17-19 kW, 28-29 A
Nitrogen: 99.99% (4.0) pure, 4-6 bar, 1.3 m³/hour (single pot), 2.6 m³/hour (dual pot)
Ventilation: Rear 150 m³/hour, 100 mm (4.0 in.) dia. duct
System weight [8, 9]: 2000 kg (4400 lbs.)

(1) Repeatability is measured at full rated system speed.
(2) Solder capacity and total weight of solder pot and pump assembly varies depending on solder alloy.
(3) Board size is reduced when operating in parallel or double modes
(4) Contact factory regarding smaller or larger boards/carriers.
(5) Edge conveyor conforms to SMEMA standards.
(6) Total weight of all parts on conveyor at any one time. Contact factory regarding requirements for greater load capacity.
(7) Electrical power varies depending on configuration.
(8) System weight varies depending on configuration.
(9) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

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Standards Compliance

SMEMA, CE

Additional options may be available: contact smartTec for further information.

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Integra™ 508.4

Top View (mm)

Side View (mm)

Front View (mm)
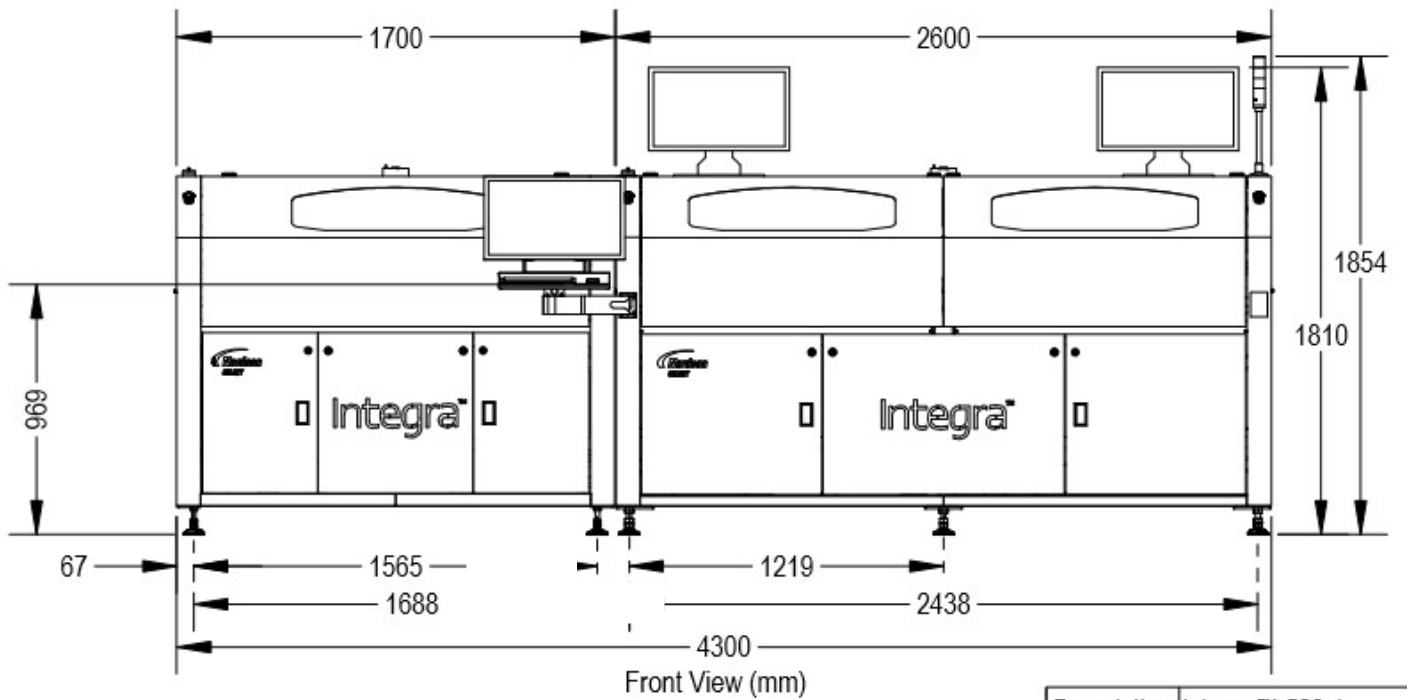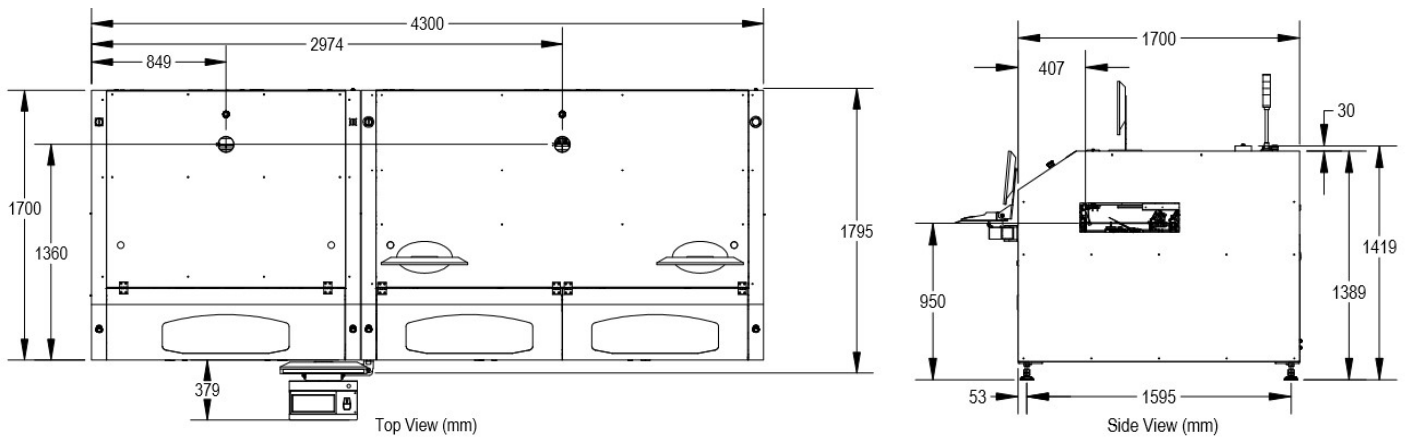
Description	Integra™ 508.4

Dimensions are in millimeters