Mühlbauer
High Tech International

Die Sorting
machine specifications

		DS VARIATION PRO	ALBATROSS	DS MERLIN 60000	DS MERLIN W2W / W2P	DS VARIATION ECO
UPH (UP TO)		6,000 / 10,000	8,000	up to 55,000	up to 30,000	6,000
FLEXI-BILITY	Flip	✓	✓	✓	✓	✓
	Non-Flip	✓	✓	✓	✓	✓
INPUT	Wafer	✓	✓	✓	✓	✓
	T&R	✓	(✓)	optional	X	✓
	JEDEC Tray / Custom Tray	✓	✓	(✓)	✓	✓
	Hoop ring	✓	✓	✓	✓	✓
OUTPUT	T&R	✓	✓	✓	X	✓
	Wafer / Panel	✓ (12“) optional 600 mm	✓	X	✓ (12“) optional 600 mm	✓ (12“)
	Waffle Pack / Gel-Pak	✓	✓	✓	✓	✓
	JEDEC Tray / Custom Tray	X	✓	X	✓	✓
	Combination of 2 outputs in 1 machine	✓	X	(✓)	X	✓
VISION / AOI	Front Side	✓	✓	✓ + IR*	✓ + IR*	✓
	Back Side	✓ + IR*	✓	✓+ IR*+ LG**	✓+ IR*+ LG**	✓
	Sidewall	✓ + IR*	✓	✓ + IR*	✓ + IR*	✓ + IR*
	Place	✓	✓	✓ + IR*	✓ + IR*	✓
	After sealing	✓ + IR*	✓	✓ + IR*	✓ + IR*	✓
	Defect detection	1 µm, 2 µm - 30 µm	15 - 30 µm	1 µm, 5 µm, 9 µm - 25 µm	1 µm, 5 µm, 9 µm - 25 µm	5 - 30 µm
WAFER SIZE (6“/8“/12“)		✓	✓	✓	✓	✓
DIE SIZE RANGE (in mm)	Minimum	0.2 x 0.2	0.7 x 0.7	0.2 x 0.4	0.2 x 0.4	0.25 x 0.25
	Maximum	50 x 50 ≥70 mm (optional)	15 x 15 optional 45 x 45	4 x 4 / 7 x 7 optional 9 x 9 / 12 x 12	4 x 4 / 7 x 7 optional Flip-Chip 9 x 9 Non-Flip 12 x 12	Flip 15 x 15 Non-Flip 25 x 25 / 35 x 35
DIRECT FORCE CONTROL		✓	✓	X	X	✓
AUTOMATIC TOOL CHANGER		✓	✓	X	X	X
ELECTRICAL DIE TEST		X	X	X	X	X
READY FOR LIGHTS-OUT FACTORY		✓	✓	X	X	X

*IR – Infrared inspection, NIR or SWIR optional
**LG – Laser groove inspection

Mühlbauer
High Tech International

Die Sorting

quality inspection capabilities

- **Vision AI support Level 1 - 3**
  (only available for DS ALBATROSS & DS MERLIN W2W/W2P)
- **Die front-side inspection** (3 µm up to 30 µm defects)
  - Die position using pattern matching or die edge detection
  - Die surface inspection
  - Chip-out inspection
  - Bump quality inspection
    (bump presence, bump size (2,5 D), bump position,
    bump bridging, bump height / co-planarity measurement
- **Die backside inspection** (9 µm up to 30 µm defects)
  - Die position using edge detection
    (not available for DS MERLIN 60,000)
  - Chip-out inspection
  - Laser-mark inspection
  - Laser groove inspection
    (only available for DS MERLIN 60,000)
  - Surface inspection
- **Sidewall inspection** (5 - 30 µm defects)
  - All 6 chip sides can be inspected with full speed
  - Visible light: sidewall defect detection up to 10 µm
    without speed loss (not available for DS ALBATROSS)
  - G 2: sidewall defect detection down to 30 µm
    (only available for DS ALBATROSS)
  - Visible light and Infrared light: down to 5 µm with IR capability
    (not available for DS ALBATROSS)
  - Place inspection
- **Tilted die inspection**
  (DS MERLIN W2W/W2P: IR (optional) - 8 µm defects)
- **Post place inspection**
- **After sealing inspection**
- **AI supported yield improvement**
  (only available for DS VARIATION PRO)

SERVING BILLIONS OF PEOPLE.
every day.