

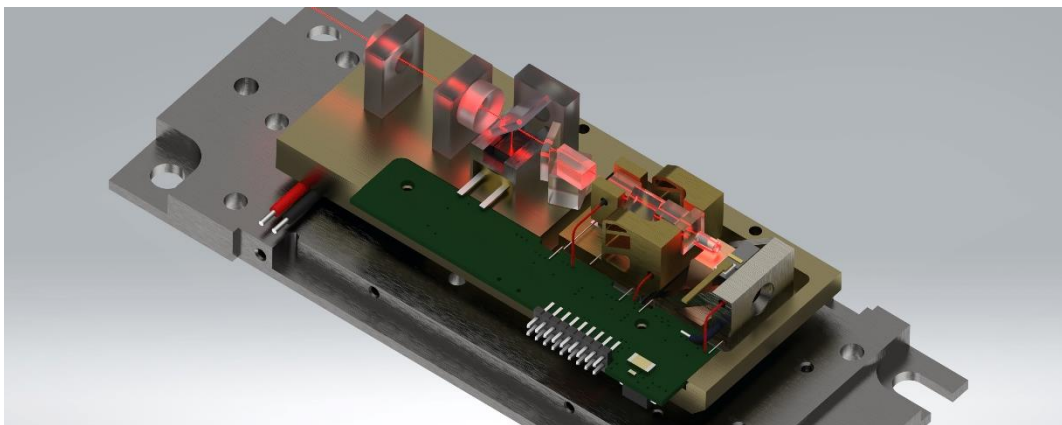
Update : 2/10/2021



PHOTONICS AUTOMATED MICRO-ASSEMBLY EQUIPMENT

1 – Field of application

- Automated production of laser packages such as DPSS or diode laser
- Automated production of a large number of components on a substrate
- Automated production of passive and active alignment photonic structures
- Automated production with beam optimization of profile, power and polarization



Non-contractual photo

2 – Main process bricks

1. Manual carrier loading (automatic on request)

- Working area 330 x 200 mm

2. Adhesive dispensing:

- 4 axis robot X,Y,Z, θ_z
- Automatic syringes changer (up to 3)
- Modulate UV curing

3. Optical components placement:

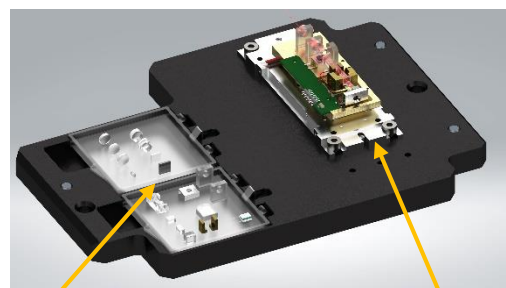
- 6 axis robot X,Y,Z, θ_x , θ_y , θ_z
- +/-0.1 μ m resolution
- 3D-vision passive alignment
- 2D-vision passive placement
- Automatic tool changer (up to 4)

4. Measure for active alignment

- Beam profile
- Optical surface angle
- Beam power
- Polarization

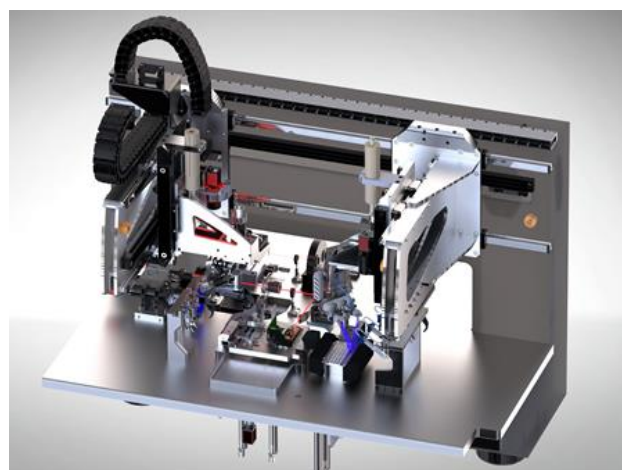
5. Options

- Active alignment with 2 robots
- Aberration optimization
- Rotation for special sub-assembly



Optical components
(On gel pack)

Substrate



3 – Specification

- 220V / 15A
- 6bar air compressor
- Vacuum pump
- Working temperature range 10 to 40°C
- Automatic handling tools :
 - 2 grippers 300g, 12,5mm travel
 - 3 die-collect 30 à 60g
 - 3 glue syringes
- Passive alignment :
 - Camera resolution: 8µm
 - Placement accuracy: ±10 µm
- Active alignment :
 - Placement accuracy: ±1µm
 - Artificial Intelligence algorithms
 - 2 components simultaneous alignment functionality

SPECIFICATIONS	X	Z	Y	Θx	Θz	ΘY
Type	Linear Motor		Linear Motor	Brushless motor		Brushless motor
Guide system	Ball bearing		Ball bearing	Curved cross roller slide way	Curved cross roller slide way	Ball bearing
Coder	LC485		LC485	Incremental encoder	Incremental encoder	Incremental encoder
Stroke	1200 mm	400mm	300mm	±3°	±3°	180°
Resolution	100nm	100nm	100nm	0,05°	0,05°	0,05°
Repeatability	+/-100nm	+/-100nm	+/-500nm	0,1°	0,1°	0,1°
Precision	3µm	3µm	3µm	-	-	-
Speed	200mm/s	200mm/s	50mm/s	2°/s	2°/s	90°/s

4 – Dimensions and weight

- **Footprint:** 900x1690mm
- **Height:** 1950mm
- **Weight:** 1200Kg

5 – Supervisor software PHOTONSMART™

Recipe generator:

- Easy: Successive steps through the user friendly interface
- Secure: First run in step mode and low speeds
- Available libraries
 - Final products
 - Components
 - Tools
 - Process drivers
 - Measure drivers

Traceability:

- Complete report including recipe’s parameters, measurements results, as well as final placement positions

Advance functions:

- Conditional assembly algorithm
- Calculation functionality
- 2-components active algorithm
- User script creation
- User scan algorithm
- User laser algorithm

