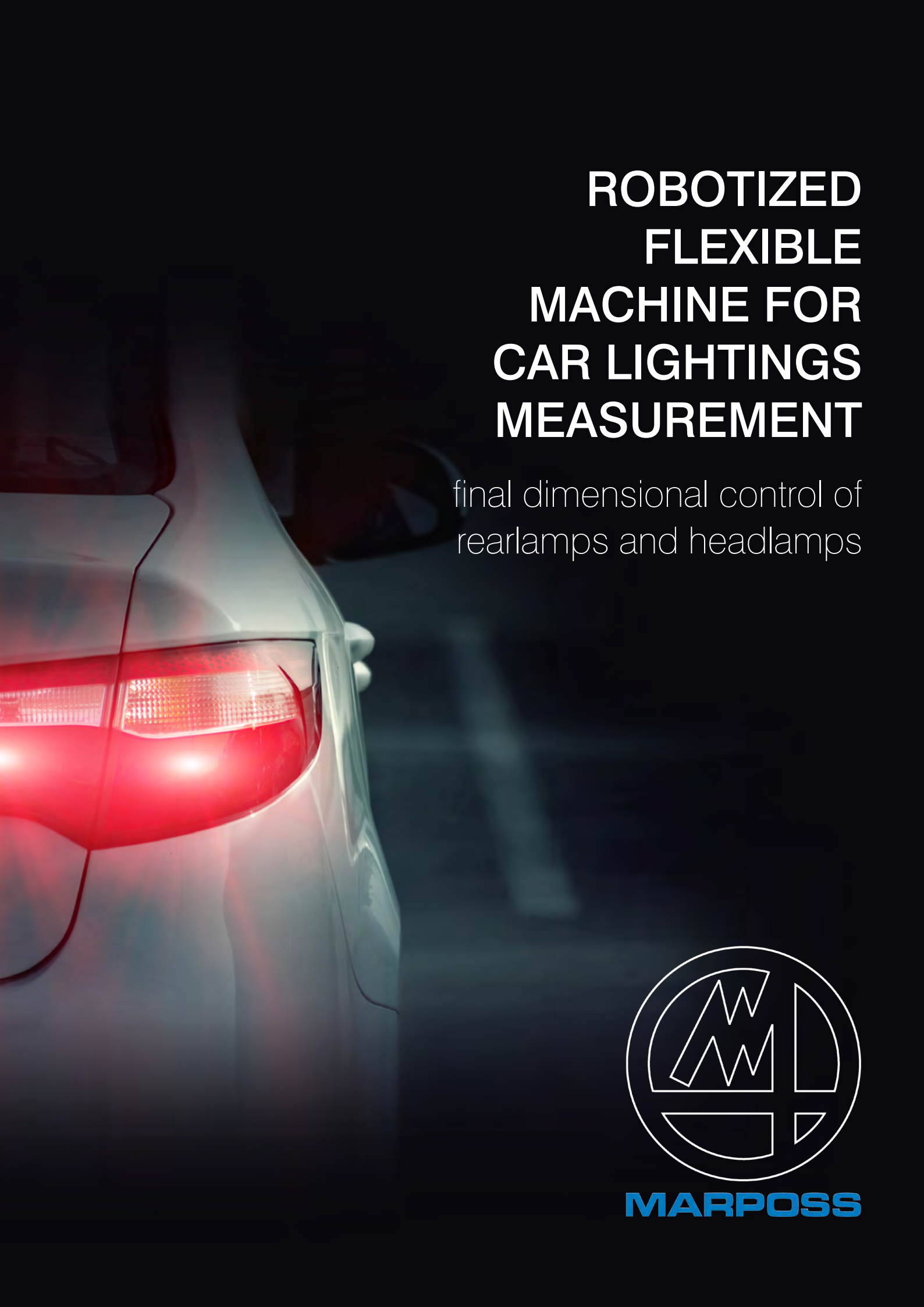

ROBOTIZED FLEXIBLE MACHINE FOR CAR LIGHTINGS MEASUREMENT

final dimensional control of rearlamps and headlamps

MARPOSS

DESCRIPTION

Innovative system including a **standard machine** and **interchangeable fixtures**.
By simply replacing the fixtures, it is possible to configure the machine for different part types.
Job change is very quick. The replacement of a fixture takes only a few minutes.
The **rearlamp**/**headlamp** to be measured is referred on the fixture in the RPS (Reference Points System), indicated by the car manufacturer and corresponding to the fixing points to the car body.
The part is measured on the surface (flush points) and on the edge (gap points) to **guarantee the correct assembly and matching with the car body**.
Flush points are measured using an accurate optical sensor, based on **chromatic confocal technology**.
Gap points are measured by **camera**, with shadow casting technology. For this purpose, the fixture integrates a diffusive backlight to illuminate the part perimeter.
Both chromatic confocal sensor and camera are mounted on the arm of a **6 axis anthropomorphic robot**, moving them in front of the measuring points.
Measurements can be acquired in sequence, one point at a time, or by means of a continuous scan.
The trajectory of the robot can be easily programmed using G-code language.
The fixture is not only a support for the part to be measured. It's a "smart" object.
It integrates fiducials, used as reference points for the robot, and calibrated elements for a fine calibration of the robot trajectory.
Based on the application, the fixture can also integrate traceability devices, for example a barcode reader, pneumatic or electric actuators, sensors and other electronic devices to communicate with the machine.
A user friendly software with graphic interface allows the operator to get an immediate overview of the measured part status.

BENEFITS

Flexibility
- Standard machine + interchangeable fixtures dedicated to the part to be measured
- Quick job change
- Possibility to add measuring points, at any time, without mechanical modifications to the fixtures

Contactless technology
- No contact with the part and no risk to scratch it

Cycle time
- Reduced cycle time with respect to other robotized solutions using contact sensors

AVAILABLE VERSION

The machine is available in two different configurations:
- ***WITH 2 FIXTURES*** (1 for LH and 1 RH rearlamp/headlamp) mounted at opposite sides of a rotating table.
- ***WITH 4 FIXTURES*** (2 for RH and 2 for LH rearlamp/headlamp) mounted, two by two, at the opposite sides of a rotating table.

While the operator loads the part/s on the fixture at one side, the part/s loaded on the fixture/s at the opposite sides are measured, thus improving throughput.

TECHNICAL SPECIFICATION

Measurable parts overall dimensions	up to 600mm x 300mm x 300mm
Measurement time	Depends on the dimensions of the part and number/positions of the measuring points. Average scanning speed is 40mm/sec.
Measurements repeatability	≤ +/- 0,015 mm
Measurements accuracy	≤ +/- 0,03 mm

For a full list of address locations, please consult the Marposs official website

Marposs has an integrated system to manage the Company quality, the environment and safety, attested by ISO 9001, ISO 14001 and OHSAS 18001 certifications.