**Specification for measurements of the shape and roughness of optical components**

# Document objective

This document contains the specification to be defined for measurements request of the shape and the roughness of optical components on the POLARIS technological platform at LAM.

# Tools and achievable measurements types

The measurement tools available in the POLARIS platform are described in the document « POLARIS Technological Facility: Optical Metrology tools » (reference LAM.PTF.NOT.1066).

The POLARIS platform includes several interferometers (Möller-Wedel V-100, ESDI H1000,…), one interferential microscope (Wyko NT9100) and one chromatic confocal microscope (STIL Micromesure 2) allowing measurements of various shapes and roughness of optical components with high accuracy in clean environment .

# Specification for the shape and roughness measurement requested

The following form allows providing details of the measurement request. Don’t hesitate to add some pictures, sketches, drawings or other information not asked in this document that seems to be important for the measurement.

## General information

|  |  |
| --- | --- |
| Project name | COLIBRI |
| Applicant name | UNAM |
| Request date | July 2022 |
| Requested date for results | End of 2022 |

## Component to be measured

|  |  |
| --- | --- |
| Name / Reference | WOB lenses (L5, L6, L7, L9, L10, L11) |
| Manufacture / Supplier  | Trioptics |
| Shape | Circular; unmounted |
| Dimensions | Depend on the lens |
| Weight |  |
| Material(s) / surface coating  | Silica, CaF2 lenses with AR coated |
| Mechanical mount supplied? If yes: dimensions / interfaces?  | NO |
| Clean environment required? \* | NO |

\* Possible to realize the measurement in ISO5 clean room.

## Measurement parameters

|  |  |
| --- | --- |
| Location(s) and dimensions of the area(s) to be measured on the component for shape measurement | Form error by Fizeau; diameter with caliper; center thickness with gauge; inspection |
| Spatial resolution for shape measurement |  |
| Location(s) and dimensions of the area(s) to be measured on the component for roughness measurement |  |
| Spatial resolution for roughness measurement |  |
| Measurement in cold? If yes: required temperature? \*\* | NO |

\*\* Possible to realize the measurement on the component in cryogenic environment with liquid nitrogen (~80K).