

RICH mirror tests

Reference INFN people at JLab:

Giovanni Angelini (Giovanni.Angelini@lnf.infn.it)

Ilaria Balossino (balossino@fe.infn.it)

Acceptance tests must be completed within 30 days from receiving at JLab. Six mirrors have been already delivered, the last 4 should be shipped by the end of July. It is convenient to combine the measurements of all the mirrors together, if possible.

- 4 mirrors delivered in June, tested and accepted: 2-Central, 3-Central, 4-Central, 5-Central
- 2 mirrors delivered in July (to be identified), deadline for acceptance in August 14
- 4 mirrors in production

Handling of the mirrors

- 1) When working on the mirror, please wear plastic gloves and mask.
- 2) Do not touch the reflecting surface.
- 3) Hold the mirrors only from the back

Coordinate Measurement Machine

- 1) The measurements must be performed in the clean room.
- 2) The mirror must be placed horizontally on the cylindrical support we used for the first 4 mirrors. Check that it is safely stable on the support before starting.
- 3) Ask the operator to be careful to not hang over the mirror with the head of the machine, to avoid the risk that it could fall onto the mirror.

All the following measurements must be performed on the two skins of each mirror:

- the 4 corners
- the 4 edges of the mirror, by touching the mirror from the side in step of 2 or 3 cm, so that at least 20 points are measured on the short sides and 30 on the long sides.
- no measurements on the back of the two skins.

Optical measurement

Since the setup for the full optical characterization of the mirrors is not ready yet, in this phase only a spot size measurement will be done. The specification is a $D0 < 2.5$ mm, typical values from previous measurements should be $D0 < 1.5$ mm.

Optical instrumentations will be shipped from Italy:

- CCD photcamera
- light source with a optical fiber
- mechanical support for photcamera and source

The photcamera and the source are driven by a linux PC. The PC must be configured with Debian linux and it should be connected to the JLab guest network. All the softwares will be installed by Ilaria.

Test procedures

- 1) The mirror must be placed on one of the white desks available in the clean room, laying against the wall of the room. Please use foam or other soft material to put the mirror on the desk.

- 2) Place the photocamera and the source in their positions (drawings will be produced).
- 3) The distance between the photocamera/source and the mirror must be 2.7 m.
- 4) Switch on the source and center the reflected spot on the photocamera by gently moving the mirror.
- 5) Move the source and the photocamera to find the minimum spot size.
- 6) Take the measurement and make the analysis.