



Plus Optics S12 2015-2016



4.2.3 Error messages when performing a measurement

If no measurement results are available, an error message and an action recommendation followed by a "Refer or try again" status message are displayed.

The following overview provides a list of all error messages that are stored in the software:

- a) "Picture out of focus"
- b) "Patient does not focus on camera!"
- c) "Pupils too big!"
- d) "Pupils too small!"
- e) "Pupils not found!"
- f) "Too much IR ambient light!"
- g) "Measurement incomplete!"
- h) "Corneal reflexes are too dark!"

a) Picture out of focus

Cause: This error message is displayed if the patient is too close to the camera or too far from it.

Reason: The camera is focused at a fixed measurement distance of 1 meter (3.3 feet) and measures from a distance of between 95 cm (3.1 feet) and 105 cm (3.5 feet).

Tip: You can determine the correct measurement distance on the basis of the camera image, which should appear in clear focus on the screen and every single hair of the eyebrows and eyelashes should be visible.

b) Patient does not focus on camera!

Cause: This error message is displayed if the patient is not looking at the hexagonal nose in the camera face.

Reason: To prevent incorrect refraction measurements in the periphery of the eye, both eyes must be directed at the center of the camera.

Tip: Position the child so that knees and nose are in line with the camera. Do not use any external fixation aids and remain calm. Both corneal reflexes must be located in the center of the pupils in measurement result page, neither of the two gaze charts may show red dots, but only green dots.

c) Pupils too big!

Cause: This error message is displayed if one or both of the pupil diameters is larger than 8.0 mm.

Reason: In the case of large pupils, the pupillary reflex may be overexposed, which results in cancellation of the measurement without result. Where measurement results are nonetheless displayed, these have a larger tolerance.

Tip: Light up the examination room so that the pupils become smaller.

d) Pupils too small!

Cause: This error message is displayed if one or both of the pupil diameters is smaller than 4.0 mm.

Reason: In the case of small pupils, the pupillary reflex may be underexposed, which results in cancellation of the measurement without result. Where measurement results are nonetheless displayed, these have a larger tolerance.

Tip: Darken the examination room so that the pupils become larger. Avoid making the examination room too dark, as children feel uncomfortable in such an environment and strain to look around. The examination room should at least be light enough to be able to read a newspaper.

e) Pupils not found!

Cause: This error message is displayed if the software is unable to recognize pupils in the camera image, the pupillary reflex appears unusual or the pupils are partially covered by hair, lashes or eyelids.

Reason: In order to perform a measurement, both pupils must be completely visible and the infrared light of the camera must be reflected from the cornea.

Tip: Before performing the measurement, push aside long hair from the face. Ask the child to open his eyes wide or to lift the chin should he be shy and looking down. When performing measurements over glasses, lift the temple arms off the ears so that the lenses tilt downwards. In this manner, the reflections are directed away from the camera image.

f) Too much IR ambient light!

Cause: This error message is displayed if too much infrared light is present in the examination room.

Reason: The measurement takes place with infrared light and other infrared light sources (e.g. sun, halogen lamps, globes etc.) are an interference factor.

Tip: Close the curtains to shut out sunlight, and switch off, dim or turn away light sources that radiate heat.

g. Measurement incomplete!

Cause: This error message is displayed if a measurement has started but could not be completed.

Reason: Once a measurement has started it must be completed within 0.5 seconds (this corresponds to 360 camera images).

Tip: Immediately restart the measurement by pressing the shutter twice. Position the child so that her knee and her nose are in line with the camera. Ask the child to lift her head, or hold the camera lower.

h) Corneal reflexes are too dark!

Cause: This error message is displayed if the pupillary reflexes are too dark.

Reason: The measurement takes place with infrared light, which is reflected from the cornea. Where insufficient light is reflected from the cornea, a measurement cannot be performed.

Tip: Darken the examination room so that the pupils become larger and more infrared light is reflected to the camera.