



Acquisition guide of fundus eye images for the use of quantusGL



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DATE: 22.03.2021
EDITION NUMBER: 2

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1.- About this guide for acquisition of fundus eye images

This guide is a reference work for **quantusGL®** product users. The document has been conceived for persons and users acquainted with ocular retinography techniques. Retinography training and clinical practice are not provided in this guide.

The guide contains advice for the proper acquisition of the optimal image in order to use **quantusGL®** (detailed in the chapter 5: “Optimal image obtaining”).

If you need a printed copy of this manual, please request it at info@transmuralbiotech.com. TRANSMURAL BIOTECH will send you the copy at no extra cost for you.

2.- Symbols and terms used in this guide for the acquisition of fetal lung ultrasound images

The following standards will be used in this guide for the acquisition of fundus eye images:

- The steps of the functional instructions will appear numbered when the functional instructions must be executed in a determined order.
- The bulleted lists present information in a list, without involving a sequence.
- Warnings: Warnings are intended to alert to the importance of following the proper procedures when there is risk of injury for the system's user or patients.
- Cautions: Cautions are intended to alert to the importance of following the proper operating procedures in order to avoid the risk of system damage.
- Note: Notes contain information about the appropriate use of the system and/or the proper execution of a procedure.

3.- Warnings and cautions

The use of **quantusGL®** presents no risks for the user and/or the patient. Read carefully the chapter about warnings and cautions provided by the fundus camera's manufacturer for the proper and safe use of the equipment.

WARNINGS:

- To avoid fire and electric shock that could cause water leakage, use a grounded plug. Do not connect the instrument to ungrounded plugs.
- To avoid electric shock, do not attempt to disassemble, reassemble or repair the appliance yourself. Ask your dealer to do the repairs.
- Do not remove the covers from the main unit, the chin rest unit or the power supply unit; only the cover of the lamp unit is allowed to be removed. You could receive an electric shock.
- To prevent electric shock, unplug the power cord from the grounded outlet before removing the fuse cover. Do not connect the power cord to the grounded socket if the fuse cover is not fitted correctly.
- To prevent fire in case of instrument malfunction, use only the fuses indicated on the sticker on the side of the fuse holder.
- To avoid the risk of electric shock or fire, install the instrument in a dry place, away from water and other liquids.
- To avoid the risk of electric shock or fire, do not place glasses or any other container with liquid near the instrument.
- To avoid the risk of electric shock, do not insert any metallic object into the holes or slots on the instrument.
- To avoid a fire in the event of a malfunction of the instrument, immediately turn off the power switch and unplug the cable if smoke comes out of the instrument or any abnormal situation occurs. Ask your dealer for technical assistance.

CAUTIONS:

- To avoid injury, install the instrument on a level surface.
- To avoid electric shock, do not handle plugs with wet hands.
- To prevent the patient from suffering eye damage or discomfort, do not increase the intensity of the illumination lamp more than necessary.

- To avoid eye injury or discomfort to the patient, do not increase the light intensity to shoot more than necessary.
- To avoid injury while moving the instrument, do not place your fingers in the gap between the instrument and the power supply unit.
- To avoid burns, allow the lamp to cool down before touching it.
- To avoid electric shock, do not touch the xenon lamp immediately after turning it on or after it burns out.

4.- General preparation

This chapter exposes the general preparations for the image acquisition and storage in a generic way. The provided information is general. User's manual of the fundus camera (from the manufacturer) must be consulted for specific data about the functionalities of it.

Characteristics of the fundus camera

Any fundus camera that allows for the acquisition of images which match the characteristics defined in the chapter "Characteristics of the image mode" should be compatible with **quantusGL®**.

5.- Obtaining the optimal image

For the use of the quantusGL® product, a fundus image is required that allows the visualization of the patient's retina.

This chapter explains how to acquire the image, as well as establish the guidelines to obtain the optimal result of the quantusGL® product.

Plane of interest

Previous knowledge of the user about exploration techniques are supposed for the acquisition of the fundus eye image. Plane of interest must show the fundus eye with a 45-degree field of view and centered on the macula and pupil.

Quick guide to obtaining the optimal image

In order to ensure the proper operation of the system, the image must meet the following requirements:

- 45-degree field of view and centered on the macula and pupil
- The entire retina sphere should be seen occupying the entire image. Prevent the retina from appearing cut off
- Avoid borders or frames around the retina
- Avoid bright points of light on the image
- Avoid shadows on the image
- No measurement or marker should appear above the injury.

Figure 1 shows graphical examples of the aforementioned requirements.

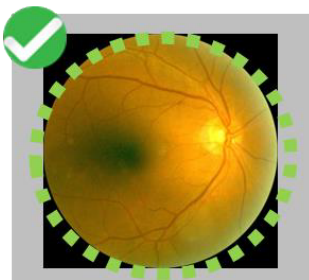
It is recommended to have these guides near the acquisition machine in order to consult it.

NOTE: Anatomy, physiology and physical conditions of the patient are factors that must be taken into account during the acquisition. Moreover, exploration technique depends on knowledge and experience of the sonographer that performs the acquisition.

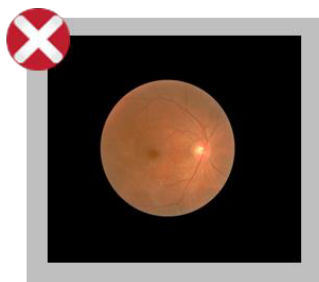
- Image obtained with a retinograph.
- It is recommended not to use an image resolution lower than 1 Mpx.
- The system accepts all sizes of images, but will resize them to 1200x1200 px. Therefore it is recommended to adjust to this size as much as possible.
- Images must be in JPEG or PNG image format.
- The entire retina sphere should be seen occupying the entire image.
- Avoid borders or frames around the retina.
- The image must not be treated with any filter or processing of any kind.
- No measurement or marker should appear above the injury.



The entire retina
should be seen



Avoid borders or frames



No measurement marker
should appear

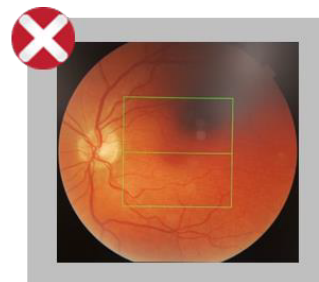


Figure 1. Acquisition guide

6.- Storage in fundus camera

Before take the image, be sure the fundus camera has an external memory device connected. Stored images must be saved to be analyzed by **quantusGL®**.

NOTE: Once images are saved, these are selected from **quantusGL®** application in order to be analyzed (see User's Manual). The acquired data, manually introduced to **quantusGL®**, shall comply with the applicable laws for data protection (RGPD).

7.- Frequently Asked Questions

Can any fundus camera be used?

Any fundus camera which acquires images that match the characteristics defined in the “Characteristics of the image mode” chapter should be compatible with **quantusGL®**.

Is it difficult to acquire the fundus eye image?

The fundus image necessary for the use of quantusGL® does not differ from the image acquired for the evaluation of other pathologies related to the retina.

8.- Contact

For further information you can contact us at:

support@quantusgl.org

or visit:

www.quantusgl.org