

logarithmic values of sensitivity relative to each triplet.

#### **GIMA WARRANTY CONDITIONS**

Congratulations for purchasing a GIMA product. This product meets high qualitative standards both as regards the material and the production. The warranty is valid for 12 months from the date of supply of GIMA. During the period of validity of the warranty, GIMA will repair and/or replace free of charge all the defected parts due to production reasons. Labor costs and personnel traveling expenses and packaging not included. All components subject to wear are not included in the warranty. The repair or replacement performed during the warranty period shall not extend the warranty. The warranty is void in the following cases: repairs performed by unauthorized personnel or with non-original spare parts, defects caused by negligence or incorrect use. GIMA cannot be held responsible for malfunctioning on electronic devices or software due to outside agents such as: voltage changes, electro-magnetic elds, radio interferences, etc. The warranty is void if the above regulations are not observed and if the serial code (if available) has been removed, cancelled or changed. The defected products must be returned only to the dealer the product was purchased from. Products sent to GIMA will be rejected.



**ENGLISH**

The close-up contrast sensitivity chart was developed, based on a definition of contrast (Contrast  $C$  = background luminance-minus-letter luminance, divided by background luminance) and of contrast sensitivity, which is equal to the reciprocal of the contrast (Sensitivity  $S = 1/C$ ).

The chart has 7 lines, each of which has three triplets. Each triplet has three letters with the same contrast. The chart, therefore, shows 21 different contrasts, progressively decreasing from top to bottom and from left to right. As the contrasts progress across the values of the triplet, 21 different degrees of contrast sensitivity are established.

The variation in contrast between one triplet and another is always constant, at all points of the table and, consequently, the modifications in sensitivity are also always constant. Each triplet can be identified by a number above it, shown on the back of the chart. This number represents the contrast sensitivity required to see that triplet and corresponds to the exponent given on the base of 10 to obtain the value of that particular sensitivity.

The test should be carried out in good lighting conditions, preferably under natural lighting, at a distance varying between 30 and 40 cm, depending on the visual acuity of the patient being tested.

The separate triplets are to be considered as seen, if at least two out of the three letters that make them up are perceived.

The eyes are, firstly, examined separately, beginning from the stronger one, and then together. The date, distance of reading and identification number of the last triplet perceived should be registered, for tests regarding OD,  $\overline{OO}$  and OS.

The difference in contrast sensitivity of the two eyes examined separately and the contrast sensitivity of the two eyes examined together varies, with results between 0.1 and 0.3 approximately.

The test may be repeated at regular intervals, following treatment in order to evaluate the results or, independently from this, to monitor whether the cataract condition is progressive, stationary or regressive over time.

Over-frequent testing is unnecessary, however the interval between tests should always be decided by the doctor, in relation to the requirements of each single patient.

With every three triplets, contrast sensitivity is doubled or is halved. It doubles, moving from top left towards bottom right and, vice versa, it is halved, going from bottom right towards top left, because the contrast is halved or doubled respectively. If we express sensitivity using its logarithm, it increases or decreases every three triplets by 0.3, as each triplet differs from the one before and the one after for a value of 0.1, expressed using the sensitivity logarithm.

Overleaf, is a full version of the chart with all the triplets that go to make it up, as well as with the

0	0,1	0,2
S Z N	H D V	R O S
0,3	0,4	0,5
H D K	Z C R	O N K
0,6	0,7	0,8
R Z S	V R C	K D H
0,9	1	1,1
O D K	N H V	R S K
1,2	1,3	1,4
K V Z	O R H	N D C
1,5	1,6	1,7
Z S V	D C O	R K S
1,8	1,9	2
C D N	H K Z	S C R

Manuale utente - User manual - Notice d'utilisation -  
Betriebsanweisungen - Manual de uso -  
Manual de uso - εγχειρίδιο - دليل الإستعمال والرعاية

**ATTENZIONE:** Gli operatori devono leggere e capire completamente questo manuale prima di utilizzare il prodotto.

**ATTENTION:** The operators must carefully read and completely understand the present manual before using the product.

**AVIS:** Les opérateurs doivent lire et bien comprendre ce manuel avant d'utiliser le produit.

**ACHTUNG:** Die Bediener müssen vorher dieses Handbuch gelesen und verstanden haben, bevor sie das Produkt benutzen.

**ATENCIÓN:** Los operadores tienen que leer y entender completamente este manual antes de utilizar el producto.

**ATENÇÃO:** Os operadores devem ler e entender completamente este manual antes de usar o produto.