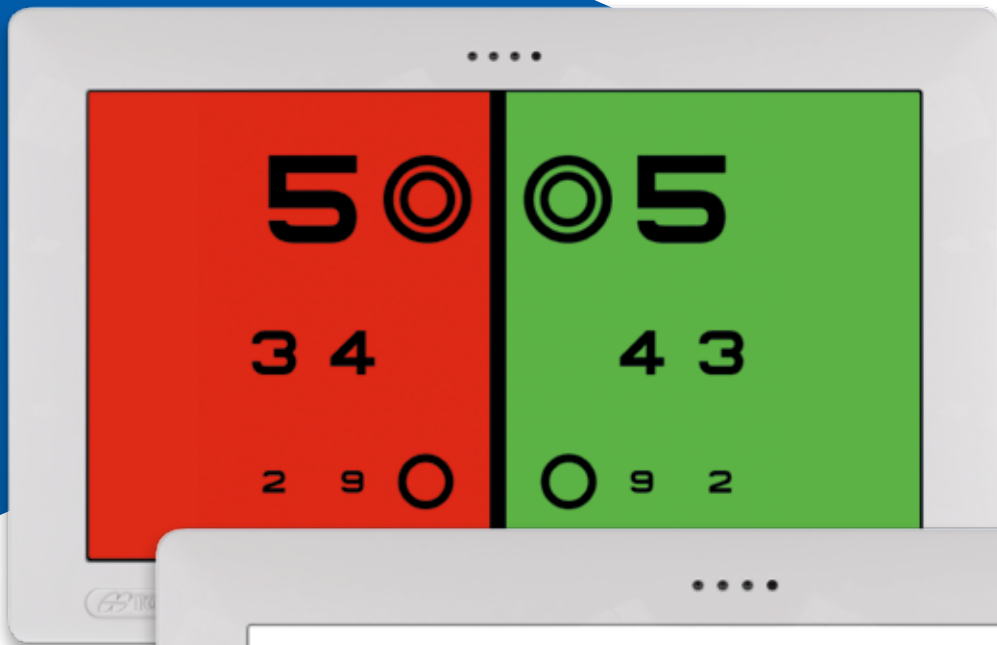


# CC series

Computerized Chart systems



# Computerized Chart systems

## CC series

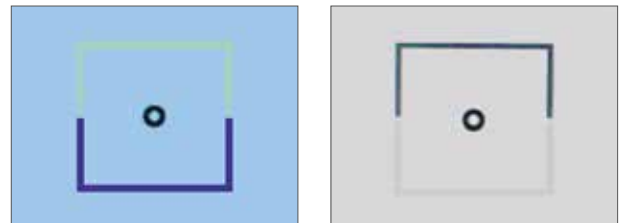
Topcon offers a wide range of Computerized Chart systems. With years of experience of providing software in the field of optics, Topcon offers a matching system depending on your wishes. Our software includes efficient and fully validated algorithms for measuring visual acuity. Topcon CC series chart systems can be operated as a stand-alone system due to a fully integrated Linux operated PC, or it can be integrated into the Topcon CV-5000S refraction lane.

## CC-100XP

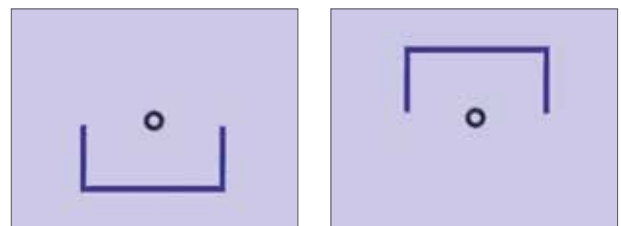
Topcon is proud to present the latest development in high-tech LCD test charts, the Topcon CC-100XP. The CC-100XP with LED technology is the top model of Topcon's chart system product line. All important visual acuity tests, binocular tests, color vision tests and contrast sensitivity tests are included. The most remarkable feature is the circular polarization technique used for binocular testing.

### Circular polarization

Image separation for binocular testing is created through a specific polarization technique which is unique for visual acuity test LCD charts. This unique circular polarization technique provides 100% image separation, without any "ghost image" and provides equal background color. This is a significant improvement compared to all conventional linear polarized LCD chart systems currently available on the market.



Ghost images and different background colors in conventional LCD chart systems



100% blocking and equal background colors in Topcon CC-100XP

## CC-100 series



To ensure proper settings of the screen contrast and brightness, the CC-100XP is making use of the latest LED screen technology. The white Maddox LED provides a bright LED light source, which is extremely well fitted for Maddox testing. The CC-100XP is also able to determine if the environment illumination is correct by using a light sensor.

### Key characteristics

- | Unique circular polarization
- | Available testing distance 2.9-6.1 m
- | Fully integrated Linux operated PC
- | Wide range of optotypes
- | Spatial frequency contrast sensitivity test
- | Pseudoisochromatic color vision test
- | MKH test sequence according to Haase
- | White Maddox LED light source
- | Fits seamlessly in the CV-5000S refraction lane



### CC-100

The Topcon CC-100 features the same functionalities as the CC-100XP. However, the CC-100XP uses unique circular polarization while the CC-100 provides image separation through red and green technique. Therefore the CC-100 is the basic version of the CC-100XP.

The high resolution 21,5 inch LED screen, similar to CC-100XP, ensures a clear and bright chart display. All commonly known visual acuity tests are available, including an ETDRS test. Like the CC-100XP, the CC-100 displays reports of the color vision tests and contrast tests. The CC-100 series can be operated as a stand-alone with an infrared remote control, or integrated in the Topcon CV-5000S refraction lane.

### Key characteristics

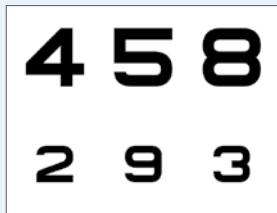
- | Image separation through red and green filters
- | Available testing distance 2.9-6.1 m
- | Fully integrated Linux operated PC
- | Wide range of optotypes
- | Spatial frequency contrast sensitivity test
- | Pseudoisochromatic color vision test
- | MKH test sequence according to Haase
- | White Maddox LED light source
- | Fits seamlessly in the CV-5000S refraction lane

# Visual acuity charts provided by CC-100 series

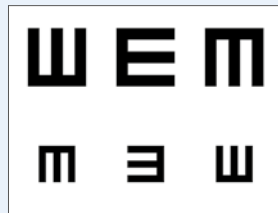
The Topcon CC series chart systems offer the most commonly used visual acuity optotypes ranging from letters, numbers, tumbling E, landolt C and up to five different children charts.



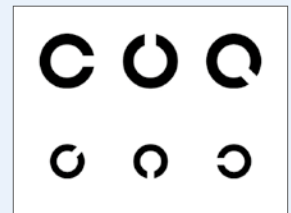
Letters



Numbers



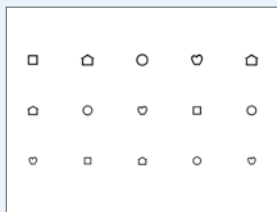
Tumbling E



Landolt C



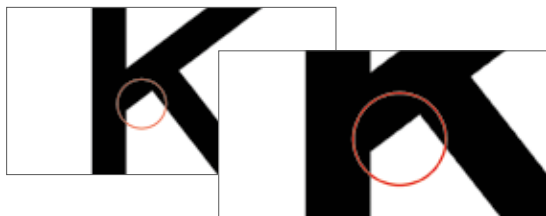
Illiterates and children charts  
(5 different chart types)



Cyrillic optotypes

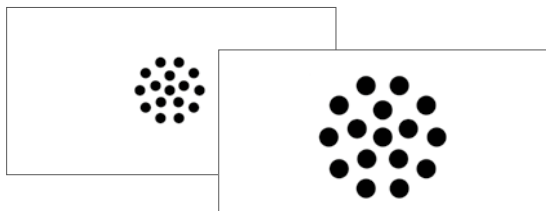
## Resolution

Optotypes are rendered as vectorial graphics, keeping crisp and high resolution of low visual acuity optotypes.



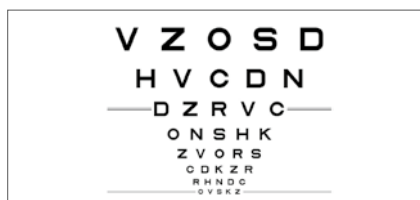
## Masking / Randomize

Masking is available for horizontal (row), vertical (column) and single characters. When masking is active, the system visualizes only the non-masked optotypes. All optotypes can be randomized and the initial optotype at start up can be programmed.



## Scaling

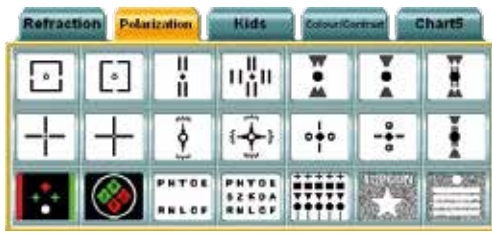
Dots chart used for Cross Cylinder testing can be scaled according to the patients visual acuity independent from working distance setting.



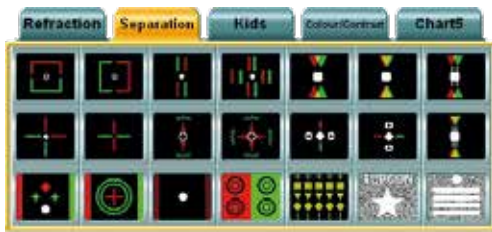
## ETDRS test

ETDRS acuity testing is the worldwide standard for visual acuity testing in diabetic retinopathy studies. The ETDRS test is designed to eliminate inaccuracies in the Snellen and Sloan tests.

# Additional tests provided by CC-100 series



Circular polarization separation tests of CC-100XP



Red/Green separation tests of CC-100

## Measuring phoria compliant to MKH - Haase

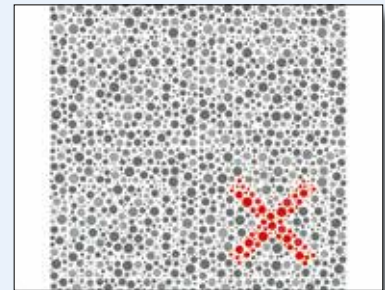
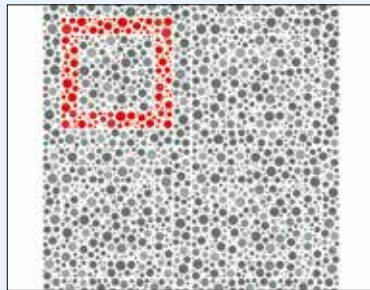
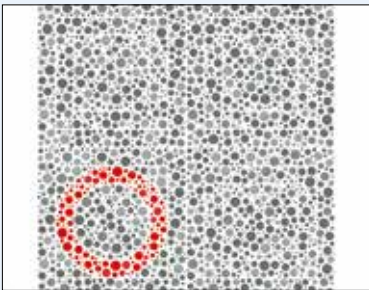
Unimpaired binocular vision is an important prerequisite for optimum vision. The methodology developed in this context is known as MKH (measuring and correcting methodology). The MKH-Haase method has been considered a reliable method for prescribing prisms to symptomatic binocular vision patients.

The MKH test measures associated phoria at distance and near using a sequence of different polarized test charts. MKH test sequence is available in the CC-100 series for testing phoria due to the variety of stereo separation tests available.

## Pseudoisochromatic color vision test

The pseudoisochromatic test is based on the well-known HRR test, but provides better quantitative data on color vision deficiencies. The test includes several pseudoisochromatic plates, each composed

of a pattern of differently shaded dots. Within each pattern, a number or symbol is present. CC-100 series displays the results in a report showing various color perception deficiencies.



## Spatial frequency contrast sensitivity test

The spatial frequency contrast sensitivity test can be customized by setting the amount of spatial frequencies and contrast levels.

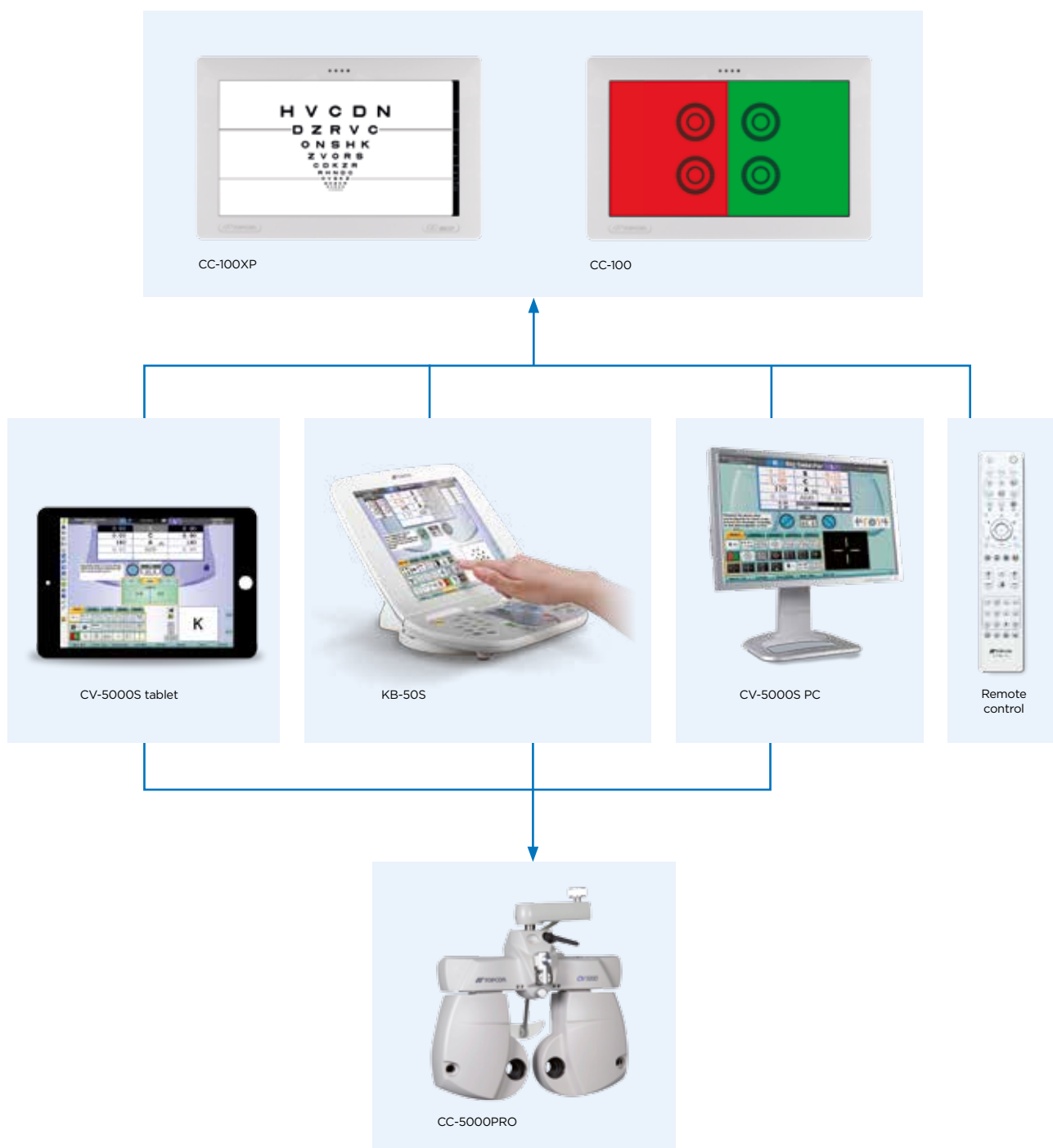
The result gives valuable information about the patients contrast visual acuity. Test results are displayed in an easy to understand graph.



# Various operation options

The Topcon CC-100 series chart systems can be operated in various ways. Operation can be done as stand-alone by remote control, with the KB-50S controller or with the CV-5000S PC controller

software in combination with Topcon's dedicated CV-5000PRO automated phoropter. The CV-5000S tablet controller provides a wireless operation of the CC-100 series as well.





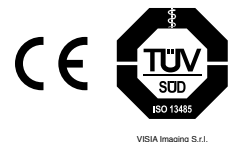
## Specifications CC series

| Electrical specifications |  | CC-100 series   |
|---------------------------|--|---|
| Power supply              |  | AC 100 – 240 V – 50 – 60 Hz   |
| Power input               |  | 60 VA   |
| Mechanical specifications |  |   |
| Width                     |  | 60 mm   |
| Height                    |  | 360 mm  |
| Length                    |  | 560 mm  |
| Weight                    |  | 5.6 kg  |
| Controllers               |  |   |
| CV-5000S                  |  | - Infrared remote control<br>- KB-50S<br>- CV-5000S PC<br>- CV-5000S tablet |
| Operation                 |  |   |
| Temperature               |  | 10°C to 40°C  |
| Relative humidity         |  | 8% to 75% (no condensate)   |
| Atmospheric pressure      |  | 700 hPa to 1060 hPa   |
| Integrated PC components  |  |   |
| Operation system          |  | Linux Custom Image  |
| Processor                 |  | Freescale Cortex A9   |
| RAM                       |  | 512 MB  |
| Hard disk                 |  | 512 MB SSD  |
| External connections      |  | - 2 USB<br>- 1 Ethernet<br>- 1 RS-232                                       |
| Screen dimensions         |  | 21.5 inch LED screen  |

|                           |                                  | CC-100XP       | CC-100         |
|---------------------------|----------------------------------|----------------|----------------|
| Dimensions W x H x D (mm) |                                  | 560 x 358 x 56 | 560 x 358 x 56 |
| LCD: contrast ratio       |                                  | 10,000:1       | 10,000:1       |
| Weight (kg)               |                                  | 5.6 kg         | 5.6 kg         |
| Power consumption         | 120 VA                           | ●              | ●              |
| Accessories               | Polaroid filters for trial frame | ●              | ●              |
|                           | Remote controller                | ●              | ●              |

### IMPORTANT

Subject to change in design and/or specifications without advanced notice.  
In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.  
Medical device Class I. Manufacturer: VISIA imaging S.r.l.



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