

# CC series

Computerised chart systems



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The Topcon CC series Computerised Chart Systems are designed to elevate your visual acuity testing experience. Built on Topcon's long-standing expertise in optical software development, these systems deliver efficient and validated algorithms for precise visual acuity measurements. Whether used as a standalone unit or seamlessly integrated into the Topcon CV-5000 refraction lane, the CC series ensures exceptional accuracy and versatility in eye care diagnostics.

## CC-100XP: Elevating Ophthalmic Precision with Advanced LCD Test Charts



Discover the capabilities of the Topcon's CC-100XP. The high-tech LCD test charts offer cutting-edge LED technology and a comprehensive suite of visual acuity tests, binocular tests, colour vision tests, and contrast sensitivity tests.

### Circular Polarisation

The CC-100XP utilises advanced circular polarisation technology to achieve superior image separation for binocular testing. Unlike conventional linear polarisation systems, circular polarisation ensures consistent and complete separation of images for the left and right eye, even when the user tilts their head. This minimises ghosting, enhances viewer comfort, and provides a uniform background colour for accurate testing results.

To further optimise visual clarity, the CC-100XP integrates cutting-edge LED screen technology. Features include a white Maddox LED light source and a built-in light sensor that adjusts for environmental illumination, ensuring optimal contrast and brightness settings in any testing condition.

### CC-100



The Topcon CC-100 shares functionalities with the CC-100XP, providing a reliable platform for visual acuity tests. Where the CC-100XP uses circular polarisation, the CC-100 utilises a red and green technique for image separation.

The high-resolution, 21.5-inch LED screen delivers a clear and bright chart display for visual acuity testing. All commonly used visual acuity tests, including the ETDRS test, are available on the CC-100, and like the CC-100XP, it displays reports of the colour vision tests and contrast tests.

Operate the CC-100 as a stand-alone system with an infrared remote control or seamlessly integrate it into the Topcon CV-5000 refraction lane for enhanced efficiency.

### Key features

- Image separation through red and green filters
- Testing distance: 2.0-9.0 m
- Varied optotypes
- Spatial frequency contrast sensitivity test
- Pseudoisochromatic Colour Vision Test
- MKH Test Sequence according to Haase
- White Maddox LED Light Source
- Integration with CV-5000 Refraction Lane

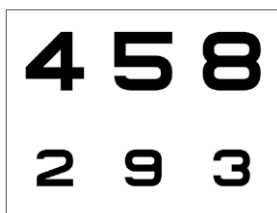
# Visual acuity charts provided by CC-100 series

The Topcon CC series chart systems provide a comprehensive selection of widely used visual acuity optotypes, including letters, numbers, tumbling E, Landolt C, and up to five different

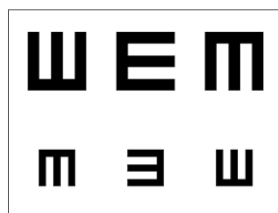
children's charts. Supporting 20 diverse menu languages, the CC-100 series is also equipped to display Cyrillic optotypes for enhanced flexibility.



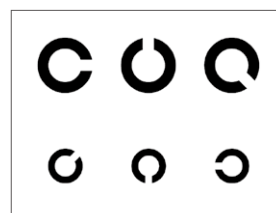
Letters



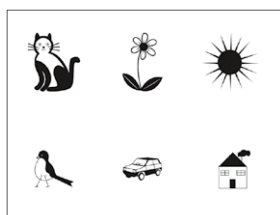
Numbers



Tumbling E



Landolt C



Illustrates and children's charts  
(6 different chart types)



Cyrillic optotypes

## Resolution

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



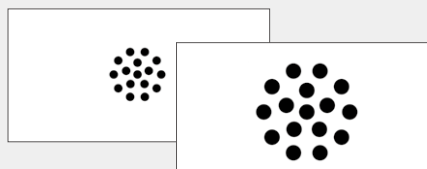
## Masking / Randomise

Masking is available for horizontal (row), vertical (column) and single characters. When masking is active, the system visualises only the non-masked optotypes. All optotypes can be randomised 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.

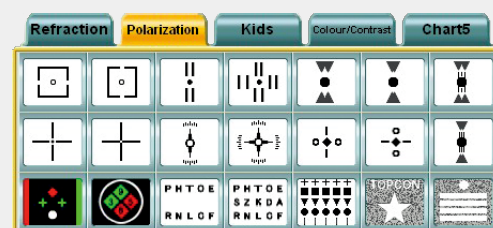


# Additional tests provided by CC-100 series

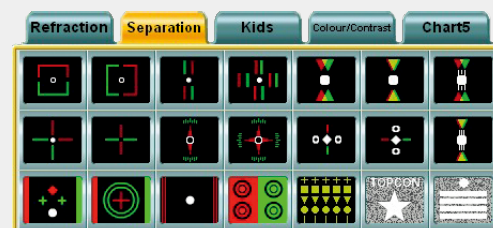
## Measuring phoria compliant to MKH - Haase

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 polarised test charts.

MKH test sequence is available in the CC-100 series for testing phoria due to the variety of stereo separation tests available.



Circular polarization separation tests of CC-100XP

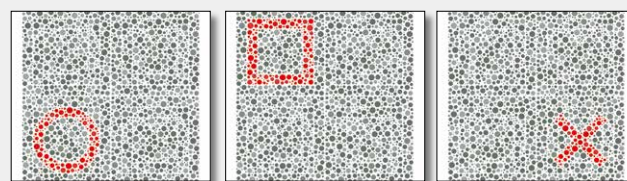


Red/Green separation tests of CC-100

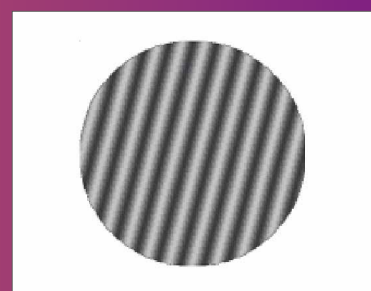
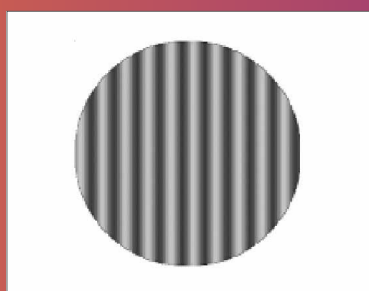
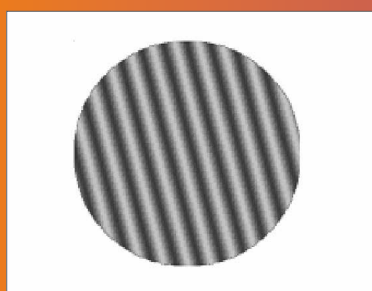
## Pseudoisochromatic Colour Vision Testing

The CC-100 series includes the renowned HRR (Hardy-Rand-Rittler) colour vision test, offering a comprehensive assessment of colour perception deficiencies. This test not only identifies red-green deficiencies but also detects blue-yellow anomalies, providing a broader evaluation than conventional methods. Additionally, the HRR test enables grading of deficiency severity, from mild to severe, ensuring detailed and actionable results.

Featuring multiple plates with distinct dot patterns, each plate incorporates different-shaped symbols to evaluate colour discrimination. The CC-100 series delivers precise and thorough reports, making it an indispensable tool for both clinical and occupational applications requiring advanced colour vision testing.

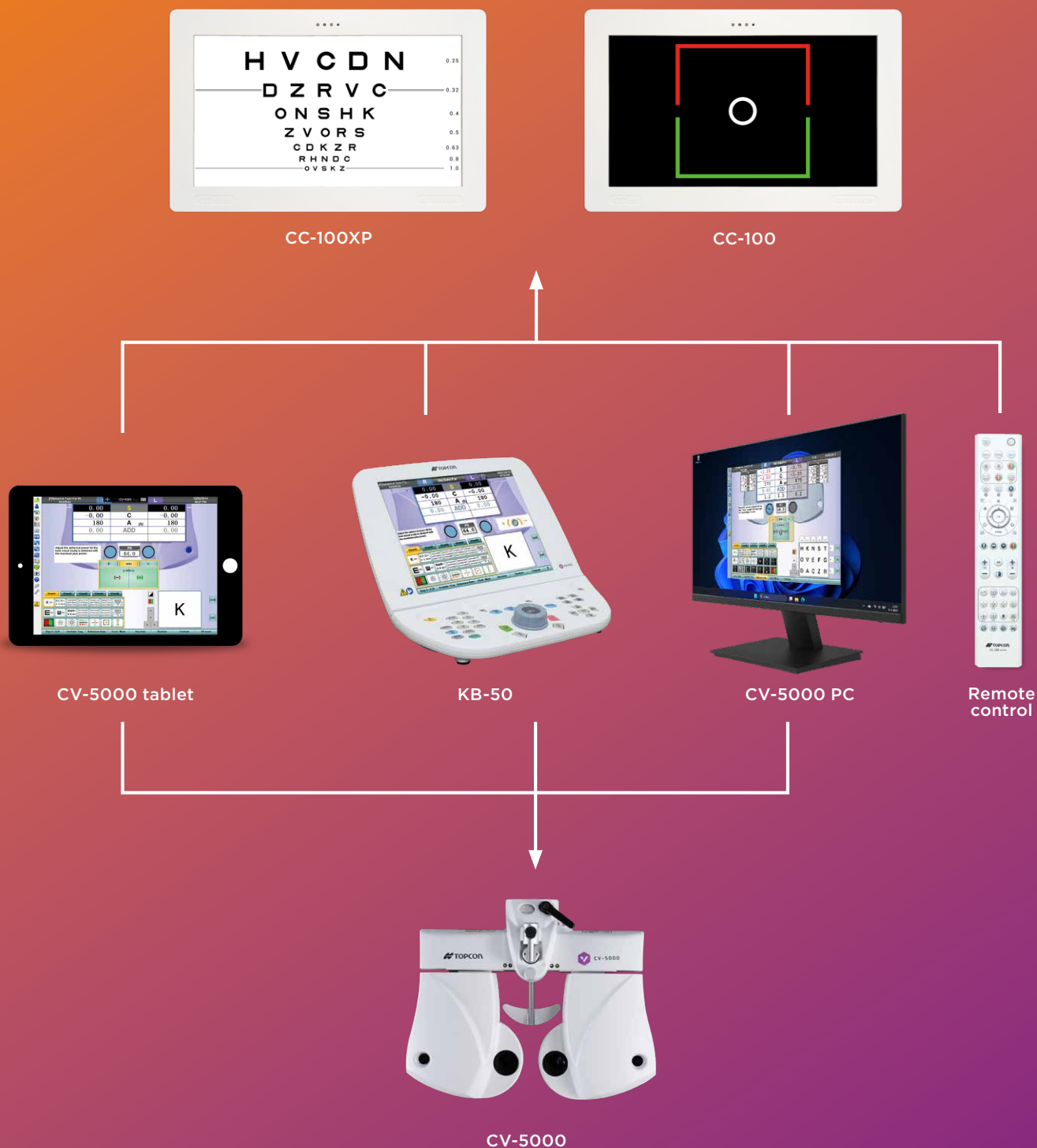


## Spatial frequency contrast sensitivity test



Customise the spatial frequency contrast sensitivity test on the CC-100 series by adjusting spatial frequencies and contrast levels. This feature provides valuable insights into patients' contrast visual acuity. The results are presented in a user-friendly graph, facilitating easy interpretation to help optimise the visual assessment process.

# Your choice of operational options



The Topcon CC-100 series chart systems provide the operator with flexibility by offering various operational options. Operate independently using the remote control, the KB-50 controller, or seamlessly integrate with the CV-5000 PC controller software alongside Topcon's dedicated CV-5000 automated phoropter. For added convenience, the CC-100 series can also be wirelessly controlled using the CV-5000 tablet controller.

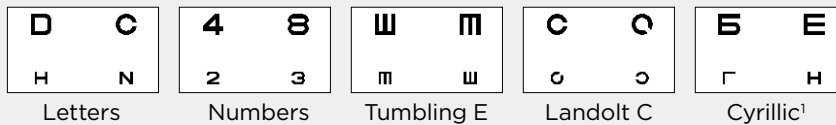
# Test charts information

Testing Distance: 2.0 – 9.0 m (step size 0.1 m)

## Visual Acuity:

|           |             |              |             |             |             |
|-----------|-------------|--------------|-------------|-------------|-------------|
| Notation: | Decimal     | LogMAR       | Snellen (m) | Snellen (f) | Monoyer     |
| Range:    | 0.05 to 2.0 | 1.3 to -0.30 | 120 to 3    | 400 to 10   | 0.5 to 20.0 |

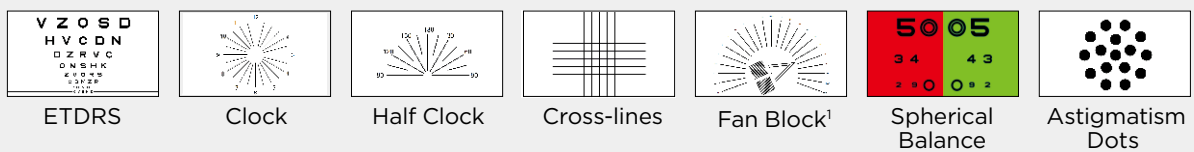
## Optotypes:



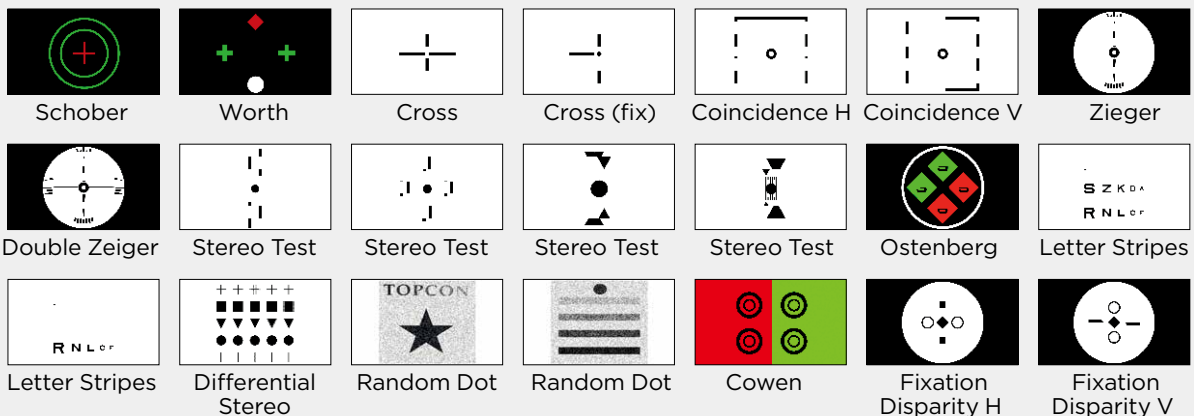
## Children's charts:



## Test charts:



## Separation tests:



## Other tests and functionalities:

Optotype Masking, Randomisation, Inversion, Mirror, Maddox LED (white), Amsler Grids, Pseudoisochromatic Colour Vision, Contrast Sensitivity, Sinewave Contrast Sensitivity, Single letter scoring (LogMAR scoring), MKH sequence (12-step)<sup>1</sup>, Fixation Targets (images and movies).

<sup>1</sup> Only available with remote control

**Note:** The screenshots above represent the CC-100XP version. The CC-100 may display charts differently, particularly for separation tests.

# 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                    |  | 4.2 kg                      |  |
| Controllers               |  |                             |  |
| CV-5000                   |  | Infrared remote control     |  |
|                           |  | KB-50                       |  |
|                           |  | CV-5000 PC                  |  |
|                           |  | CV-5000 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                       |  |
|                           |  | 1 Ethernet                  |  |
| Screen dimensions         |  | 21.5 inch LED screen        |  |

|                     |                                            | CC-100XP | CC-100   |
|---------------------|--------------------------------------------|----------|----------|
| LCD: contrast ratio |                                            | 10,000:1 | 10,000:1 |
| Accessories         | Circular polarised filters for trial frame | ●        | ●        |
|                     | Remote controller                          | ●        | ●        |

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**IMPORTANT** In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.

Not all products, services or offers are approved or offered in every market, and products vary from one country to another.  
Contact your local distributor for country-specific information and availability.