



# Delta Converter – User Manual

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## Vertex Distance Compensation

Stile Ottica SA – [stileottica.ch/app](https://stileottica.ch/app)

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## Overview

Delta Converter is a professional tool for opticians and eye-care practitioners. It recalculates a spectacle or contact lens prescription when the **vertex distance changes** – that is, when the distance between the back surface of the corrective lens and the cornea differs between the measurement condition ( $\delta_1$ ) and the dispensing condition ( $\delta_2$ ).

This matters most for high corrections: above approximately  $\pm 6.00$ , D, even a small change in vertex distance produces a clinically significant shift in the effective power at the eye.

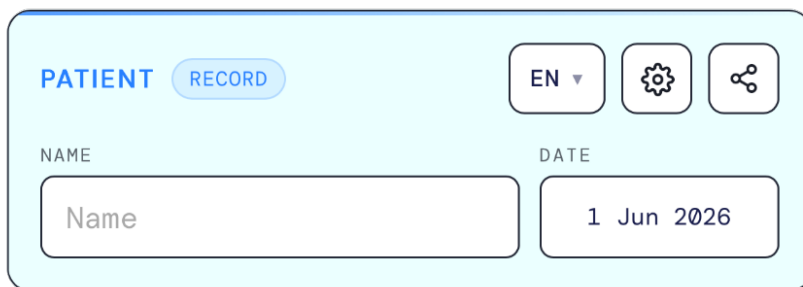
## Typical use cases

SITUATION	$\Delta_1$ (ORIGINAL)	$\Delta_2$ (TARGET)
Trial frame at 14 mm → frame sits at 10 mm	14 mm	10 mm
Spectacle prescription → contact lenses	12–14 mm	0 mm
Contact lens power → back to spectacles	0 mm	12–14 mm
New frame with different fitting depth	any	any

## Interface Layout

1. **Patient** – name, date, language, settings
  2. **Values with  $\delta 1$**  – original prescription at the known vertex distance
  3. **Values with  $\delta 2$**  – compensated prescription at the new vertex distance (with  $\delta$  difference display and vertex effect indicator)
  4. **Values to order** – free-entry fields for the final order values
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## Patient Card



The Patient Card interface is a light blue rounded rectangle. At the top left, it displays 'PATIENT' in blue text and a 'RECORD' button. To the right are three icons: a language selector 'EN' with a dropdown arrow, a gear icon for settings, and a share icon. Below these are two input fields: 'NAME' with a placeholder 'Name' and 'DATE' with the value '1 Jun 2026'.

**Name** and **Date** identify the record. The date defaults to today.

**Language selector** (top-left) – available languages: English, Italian, French, German, Spanish, Portuguese, Chinese, Japanese, Korean.

**Settings** (gear icon, top-right) – see the [Settings](#) section.

**Share** (share icon) – captures the screen as an image and opens the system share sheet.

## Values with $\delta 1$ Card

**VALUES WITH  $\Delta 1$**  ORIGINAL

• RIGHT EYE (R)

SPH	CYL	AXIS	ADD
0.00	0.00	0	0.00

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• LEFT EYE (L)

SPH	CYL	AXIS	ADD
0.00	0.00	0	0.00

R → L

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$\delta 1$  14.0 mm ⇌ CYL + / -

Enter the **original prescription** – the one obtained at vertex distance  $\delta 1$  (e.g. from the trial frame refraction or an existing CL prescription).

FIELD	DESCRIPTION
<b>SPH</b>	Sphere power in dioptres
<b>CYL</b>	Cylinder power in dioptres
<b>Axis</b>	Cylinder axis, 0–180°
<b>Add</b>	Near addition in dioptres (for presbyopic/progressive prescriptions)

Fields are colour-coded: Right eye in blue, Left eye in pink, Axis in amber, Add in a separate colour.

$\delta 1$  – enter the vertex distance at which the original prescription was measured, in mm. Default: 14.0 mm.

R → L (Copy Add) – copies the Right eye Add value to the Left eye with one tap. Useful since the Add is typically the same for both eyes.

⇌ CYL + / - – transposes the prescription for both eyes simultaneously:

$$\text{SPH}' = \text{SPH} + \text{CYL} \quad \text{CYL}' = -\text{CYL} \quad \text{Axis}' = \text{Axis} \pm 90^\circ$$

## Values with $\delta_2$ Card

VALUES WITH  $\Delta_2$  0.01D 0.25D

$\delta_2$   mm

**+0.0 mm**  
 $\Delta$  DIFFERENCE

• RIGHT (R)

SPH **0.00**

CYL —

AXIS —

ADD —

• LEFT (L)

SPH **0.00**

CYL —

AXIS —

ADD —

VIEW: SPH and ADD Near (SPH + ADD)

This card shows the **compensated prescription** valid at the new vertex distance  $\delta_2$ , updated automatically as you type.

$\delta_2$  – enter the target vertex distance in mm. For contact lenses, set this to .

### $\delta$ difference and vertex effect

Below the  $\delta_2$  field, the app displays:

- **$\delta$  difference** – the signed difference  $\Delta d = \delta_1 - \delta_2$  in mm (e.g.  )
- **Vertex effect** – a text indicator of the direction:
  - $\delta_1 > \delta_2 \rightarrow$  lens closer to the eye
  - $\delta_1 < \delta_2 \rightarrow$  lens farther from the eye

## Compensation formula

Each sphere power is compensated independently:

$$D_2 = \frac{1}{\frac{1}{D_1} - \frac{\Delta d}{1000}} \quad \text{where} \quad \Delta d = \delta_1 - \delta_2 \text{ (mm)}$$

The CYL is computed from the difference between the compensated total spherocylindrical power and the compensated sphere. The **Axis is unchanged**.

The Add is compensated independently using the same formula applied to the Add value alone.

## Precision toggle

- **0.01D** – full floating-point precision (useful to inspect the exact shift before rounding)
- **0.25D** – values rounded to the nearest quarter dioptre (0.25D steps, threshold 0.12D)

## View toggle

- **SPH and ADD** – shows the compensated distance SPH and Add separately (standard dispensing view)
- **Near (SPH + ADD)** – shows the combined near-vision SPH ( $\text{SPH}_{\text{near}} = \text{SPH}_{2} + \text{Add}_{2}$ ) and hides the Add field; useful when ordering single-vision near lenses

## Values to Order Card

**VALUES TO ORDER** INSERT VALUES ▲

RIGHT (R)	LEFT (L)
SPH <b>+0.00</b>	SPH <b>+0.00</b>
CYL <b>—</b>	CYL <b>—</b>
AXIS <b>—</b>	AXIS <b>—</b>
ADD <b>—</b>	ADD <b>—</b>

A free-entry section for recording the actual lens parameters selected for the order. These may differ from the calculated values (e.g. due to stock availability or clinical judgment).

Enter SPH, CYL, Axis, and Add for Right (R) and Left (L) eyes. The card is collapsible.

## Reset

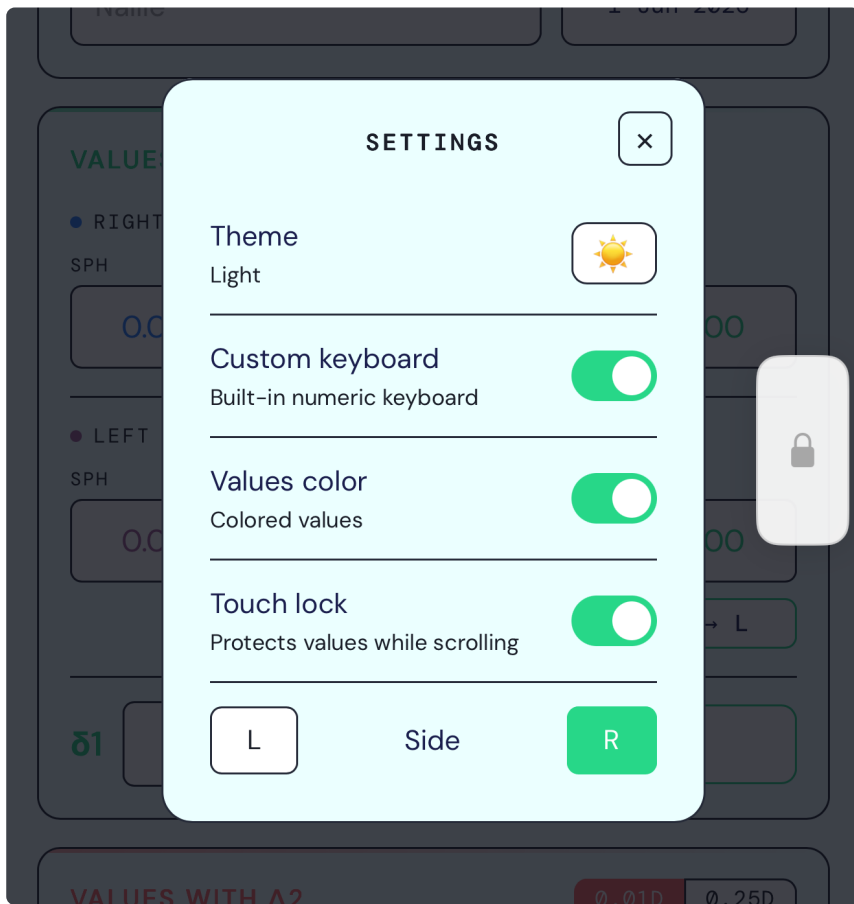
🔁 **Reset all values** clears all fields, resets  $\delta_1$  and  $\delta_2$  to **14.0 mm**, and sets the date to today.

## Technical Notes

- **Values with  $\delta_2$**  shows full 0.01D precision. CYL is calculated on the total spherocylindrical power; Axis remains unchanged.
- **Compensated values at 0.25D** use a significance threshold of 0.12D – changes smaller than this are not shown.
- Formula:  $D_2 = 1 \div (1/D_1 - \Delta d/1000)$  where  $\Delta d = \delta_1 - \delta_2$  in mm.
- The compensated values at 0.25D are indicative. The determination of the final value remains the responsibility of the professional.

# Settings

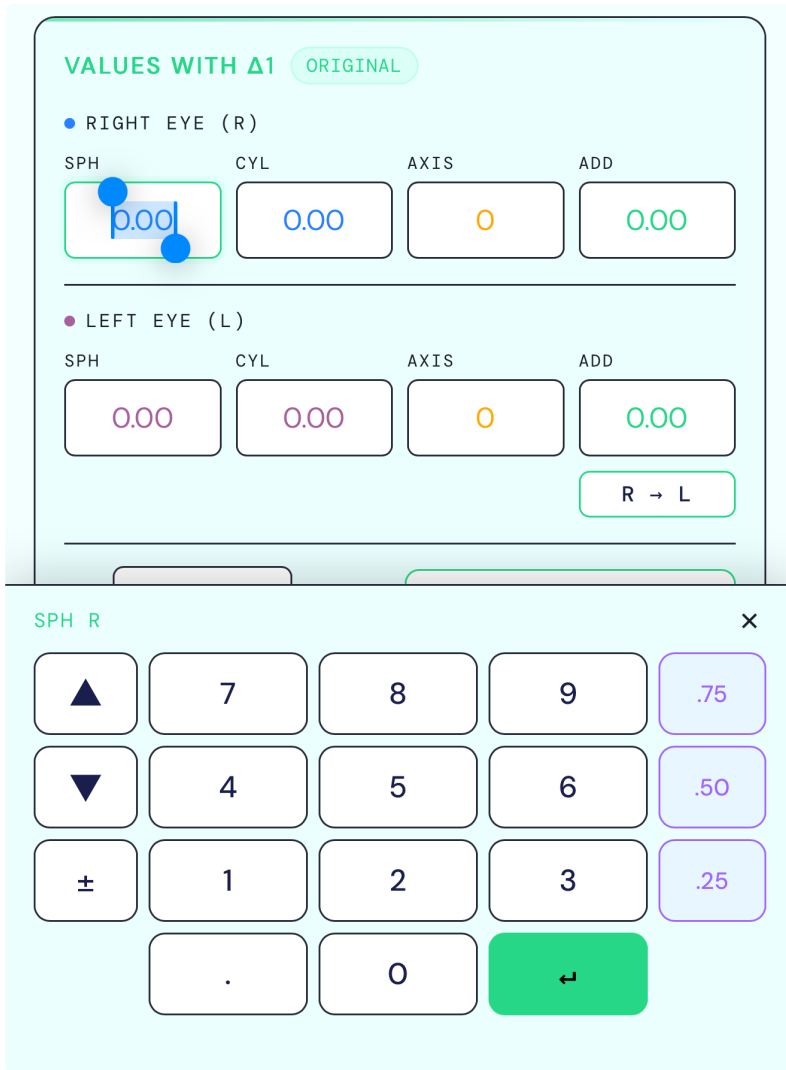
Open via the **gear icon** in the Patient card header.



## Theme

Toggles between **Light** and **Dark** mode. Saved automatically.

## Custom Keyboard



Enables the built-in numeric keypad optimised for optical values (SPH, CYL, Axis, Add,  $\delta$ ). A persistent bar at the bottom of the screen provides quick access to all input fields.

### Values Color

Toggles coloured vs. monochrome display of the result values.

### Touch Lock

Enables a floating **lock pill** on the side of the screen. When activated, it prevents accidental input changes while scrolling. Choose **L** or **R** for the pill position.

Even with Touch Lock active, the following controls remain accessible:

- **0.01D / 0.25D** precision switches
- **SFE and ADD / Near (SFE + ADD)** distance switch
- **Share** button

*Touch Lock is available on iOS only.*

## ⓘ Info Modal

The ⓘ **button** at the bottom of the page shows the app version and links to [stileottica.ch/app](https://stileottica.ch/app) and [support@stileottica.ch](mailto:support@stileottica.ch).

## Tips

- **When converting to contact lenses**, set  $\delta 2$  to **0 mm** (the CL sits on the cornea). For most patients this is the most common use of this app.
- **When converting from contact lenses back to spectacles**, enter the CL prescription under  $\delta 1$  with  $\delta 1 =$  **0 mm**, and set  $\delta 2$  to the expected frame vertex distance.
- **The vertex effect is negligible below  $\pm 4.00$  D** (typically  $< 0.25$ D) and becomes significant above  $\pm 6.00$  D. For very high corrections (above  $\pm 10.00$  D), even 1–2 mm can shift the result by a full step.
- **Progressive and bifocal prescriptions:** the Add is compensated separately. At typical vertex distances the Add correction is small but nonzero – use the 0.01D view to inspect it.
- **Use the 0.01D view** to understand the exact magnitude of the vertex effect before rounding; then switch to 0.25D for the clinically usable value.
- All settings are saved automatically and restored on the next launch.