

Sharp EL-808

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The Sharp EL-808 is one of Sharp's first models with the first practically usable LCD and was launched in 1974 as a larger version of the EL-805.



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-closed.jpg>]



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808.jpg>]

Hardware

In contrast to the more compact EL-805, which can undoubtedly be considered an early pocket calculator, the EL-808 is powered by four AA batteries, giving it a more desktop-like appearance. This is also consistent with the inclusion of a power supply jack, allowing for permanent stationary use. Unfortunately, the polarity is not indicated on the jack.



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-case.jpg>]



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-back-detail.jpg>]



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-back-batteries.jpg>]



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-power-jack.jpg>]

The eight-digit, 7-segment display is a very early development of liquid crystal displays and operates in “Dynamic Scattering Mode” (DSM). The digits are displayed brightly against a dark background, representing small mirrors. The active segments of the digits scatter the light, thus appearing white. Controlled light from behind and a cover from above are also necessary to ensure the display’s readability.



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-display-detail.jpg>]



[<https://arnowelzel.de/en/wp-content/uploads/sites/2/2025/07/sharp-el-808-display-mirror.jpg>]

My model shows small defects in the last digit, which isn't surprising after more than 50 years. Otherwise, the device and the display work function fine. Next to the last digit, there's another position for the “-” symbol if the displayed value is negative.

In later models, such as the Sharp EL-5000 [<https://arnowelzel.de/en/projects/technology-museum/calculators/sharp-el-5000>] from 1976, Sharp continued to use actively lit VFD tubes (vacuum fluorescent display). More modern LCDs with “twisted nematic” (TN) technology were used from the late 1970s onward, such as the Sharp EL-428 [<https://arnowelzel.de/en/projects/technology-museum/calculators/sharp-el-428>] from 1978 and the Sharp EL-5100 [<https://arnowelzel.de/en/projects/technology-museum/calculators/sharp-el-5100>] from 1979.

A Video by “Posy” (the same who also developed the nice mouse cursors for Windows [<https://arnowelzel.de/en/nicer-mouse-cursors-for-windows-10-or-newer>]) shows the technology in detail:

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Open "The DSM LCD (like) you've never seen" directly [<https://www.youtube.com/watch?v=eGQQWibD-nM>]

Operation

To turn it on, press the round button below the display, labeled "PUSH ON". This is not an electrical switch, but a mechanical device that lifts the display lid. When the lid is fully opened, the device turns on and indicates its readiness for use by displaying 0. You may need to manually move the lid into its final position.

There's not much to say about its functions as a calculator, as the device only supports the four basic arithmetic operations and doesn't offer a memory function.

Entries are arithmetic: first the first number, then the operation, then the second number, and finally = to display the result. You can also combine several operations consecutively, but multiplication and division are not prioritized, so entering $3 + 7 \times 4 =$ results in 40 (corresponding to $(3 + 7) \times 4$) and not 31 (corresponding to $3 + (7 \times 4)$).

The C (clear) key resets the currently displayed value to 0. Correcting the last entry is not possible.

If an overflow or error occurs during a calculation (e.g., if you try to divide a value by 0), this is indicated by the display reading 0.0.0.0.0.0.0., similar to the Sharp Compet PC-1001

[<https://arnowelzel.de/en/projects/technology-museum/calculators/sharp-compet-pc-1001>] .