Refreshable Braille Displays and Notetakers

November 7, 2023

# Things to Consider

* The number of cells
* Single-line vs. multiple-line display
* The feel of the braille cells
* Whether cursor routing buttons are available
* How it connects to a computer/tablet/phone
* Screen reader compatibility
* How the device is powered
* Storage
* Supported file formats.
* Braille translation functionality
* ease of use
* Stability of Firmware/Software running on device
* Durability
* Portability
* Product support
* Price

# Important Notes

* ("\*" asterisks) denotes the device as a notetaker.
* Empty table entries indicated by a "-" (dash) mean that no information was provided on the company's website or the company did not respond to email inquiries.
* Prices reflect what was listed in September 2023 on the company's website. Any companies wishing to have their information updated, please email braille@nnels.ca with the details.
* Prices may be higher or lower than listed here when purchasing from a distributor.

# List of Braille Displays

### [Freedom Scientific](https://www.freedomscientific.com/) (A brand of Vispero)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Orbit Reader 20 | $699.00 USD | 20 cells | TXT, BRF, BRL | Micro-USB, Bluetooth, SD card | Perkins 8 key entry | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | no |
| Orbit Reader 20 Plus | $799.00 | 20 cells | DOC, DOCX, TXT, BRF, BRL | Micro-USB, Bluetooth, SD card | Perkins 8 key entry | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | yes |
| Orbit Reader 40 | $1,699.00 USD | 40 cells | DOC, DOCX, TXT, BRF, BRL | USB-C, Bluetooth, SD card, haptic (vibration) output | Perkins 8 key entry | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | yes |
| Orbit Slate 520 | $3,495.00 USD | 100 cells (Multi-line display 5 lines of 20) | DOC, DOCX, TXT, BRF, BRL | USB-C, Bluetooth, SD card, haptic (vibration) output | Perkins 8 key entry | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | yes |
| Orbit Slate 340 | $3,995.00 USD | 120 cells (Multi-line display 3 lines of 40) | DOC, DOCX, TXT, BRF, BRL | USB-C, Bluetooth, SD card, haptic (vibration) output | Perkins 8 key entry | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | yes |
| Graphiti Plus | - | 40 braille cells + multiheight pin array for tactile images | DOC, DOCX, TXT, BRF, BRL | USB, Bluetooth, Wifi, HDMI, SD card, Haptic and audio outputs | Perkins 8 key entry, Touch Interface | Jaws, ChromeVox, Voiceover, Brailleback, NVDA, Voiceview | yes |

### Innovision Tech / [Canadian Assistive Technology](https://canasstech.com/) as distributer

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Braille Me | $750 CAD | 20 cells | TXT, BRL, BRF | USB Micro, Bluetooth, SD card | Perkins 6 key entry with cursor routing keys | BrailleBack, Voiceover, NVDA, VoiceView | yes |

### [Bristol Braille Technology](https://bristolbraille.org) / [Canadian Assistive Technology](https://canasstech.com/) as distributer

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Canute 360 | $3,495.00 CAD | 360 cells (multi-line, 9 lines of 40) | BRF, PEF | USB-A, SD Card | 3 navigation buttons and 11 additional buttons for input | - | no |
| Canute Console\* | $6,675.00 CAD | 360 cells (multi-line, 9 lines of 40) | - | USB-A, Bluetooth, Wifi, 40-pin GPIO header, speakers, high contrast monitor | QWERTY Keyboard + additional buttons for navigation | BRLTTY screen reader | yes |

### [HIMS INC](https://hims-inc.com/)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| BrailleSense 6\* | $5,795.00 USD | 32 cells | HBL, DOC, DOCX, XLS, XLSX, CSV, PPT, PPTX, RTF, TXT, BRL, BRF, EPUB, PDF, HTML, XML, DAISY, NIMAS | Full size SD card, USB-C, USB-A, Bluetooth, Wifi, Camera, Microphone, Speakers, 3.5 MM audio jack, internal storage | Perkins and 4 Function Keys | Jaws, NVDA, VoiceOver, Supernova | yes |
| BrailleSense 6 Mini\* | $4595 USD | 20 cells | HBL, DOC, DOCX, XLS, XLSX, CSV, PPT, PPTX, RTF, TXT, BRL, BRF, EPUB, PDF, HTML, XML, DAISY, NIMAS | Micro SD Card, USB-C, USB-A, Bluetooth, Wifi, Camera, Microphone, Speakers, 3.5 MM audio jack, internal storage | Perkins and 4 Function Keys | Jaws, NVDA, VoiceOver, Supernova | yes |
| QBraille XL | 3195 USD | 40 cells | DOC, DOCX, BRF, TXT, RTF, PDF, DAISY | Standard SD card, USB-C, Bluetooth | Blend of 8 key Perkins entry and QWERTY function keys | JAWS, Window-Eyes, SuperNova, System Access, NVDA, VoiceOver, BrailleBack, Mobile Speak, TALKS | yes |

### [American Printing House for the Blind](https://www.aph.org/) / [Humanware](https://www.humanware.com/) as the distributor

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chameleon 20 | - | 20 cells | BRF, PEF, TXT, HTML, DOCX, NISO, RTF | Bluetooth, Wifi, USB-A, USB-C, SD Card, 3.5 MM audio jack, speakers, internal storage | Perkins 8 key entry | VoiceOver, Jaws, NVDA | yes |
| Mantis Q40 | $$4,399.00 CAD | 40 | BRF, PEF, TXT, HTML, DOCX, NISO, RTF | Bluetooth, Wifi, USB-C, SD Card, internal storage | QWERTY entry | VoiceOver, Jaws, NVDA | yes |

[Humanware](https://www.humanware.com/)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Brailliant BI 20X | $2599 CAD | 20 cells | BRF, PEF, TXT, HTML, DOCX, NISO, RTF | Bluetooth, Wifi, USB-A,USB-C, SD Card, Vibration motor, 3.5 mm audio jack, speakers, internal storage | Perkins 8 key entry | JAWS, Dolphin SuperNova, NVDA, VoiceOver | yes |
| Brailliant BI 40X | $4399 CAD | 40 | BRF, PEF, TXT, HTML, DOCX, NISO, RTF | Bluetooth, Wifi, USB-A, USB-C, 3.5 mm audio jack, Vibration motor, speakers, internal storage | Perkins 8 key entry | JAWS, Dolphin SuperNova, NVDA, VoiceOver | yes |
| BrailleNote Touch 18\* | $5,799.00 CAD | 18 cells | RTF, DOC, DOCX, TXT, BRF, HTML, XML, MP3, WMA, WAV, OGG, MP4, DAISY, PDF | Bluetooth, Wifi, USB-A, USB-C, SD card, internal storage, 3.5 mm audio jack, Vibration motor, microphone, speakers, camera, HDMI | Perkins 8 key entry, touch screen | JAWS, Dolphin SuperNova, NVDA, VoiceOver | yes |
| BrailleNote Touch 32\* | $7,199.00 CAD | 32 cells | RTF, DOC, DOCX, TXT, BRF, HTML, XML, MP3, WMA, WAV, OGG, MP4, DAISY, PDF | Bluetooth, Wifi, SD card, USB-A, USB-C, internal storage, 3.5 mm audio jack, Vibration motor, microphone, speakers, camera, HDMI | Perkins 8 key entry, touch screen | JAWS, Dolphin SuperNova, NVDA, VoiceOver | yes |

### [Optelec](https://ca.optelec.com/) (A brand of Vispero)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ALVA BC 640 | $3,395.00 CAD | 40 cells | - | USB, Bluetooth, internal memory | cursor routing buttons with additional navigational keys | Voiceover, JAWS, NVDA, SuperNova, Window-Eyes, System Access To Go, Talks, Mobile speak, BRLTTY | no |
| ALVA USB 640 Comfort | $2,695.00 CAD | 40 cells | - | USB | cursor routing buttons with additional navigational keys | Voiceover, JAWS, NVDA, SuperNova, Window-Eyes, System Access To Go, Talks, Mobile speak, BRLTTY | no |
| ALVA BC680 | $10,995.00 | 80 cells | - | USB, Bluetooth, internal memory | cursor routing buttons with additional navigational keys | Voiceover, JAWS, NVDA, SuperNova, Window-Eyes, System Access To Go, Talks, Mobile speak, BRLTTY | no |

### [VisioBraille](https://www.visiobraille.com/)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| VarioUltra 20\* | - | 20 cells | DOC, DOCX, RTF, TXT, BRF, BRL, XLS, XLSXS, PDF | Bluetooth, USB-C, USB-A, internal storage, Vibration motor | Perkins 8 key entry with cursor routing keys | Voiceover, COBRA, WindowEyes, JAWS, SuperNova, NVDA | yes |
| VarioUltra 40\* | - | 40 cells | DOC, DOCX, RTF, TXT, BRF, BRL, XLS, XLSXS, PDF | Bluetooth, USB-C, USB-A, internal storage, Vibration motor | Perkins 8 key entry with cursor routing keys | Voiceover, COBRA, WindowEyes, JAWS, SuperNova, NVDA | yes |
| Vario 340 | - | 40 cells | n/a | USB-C | Perkins 6 key entry with cursor routing keys | Voiceover for MacOS, COBRA, WindowEyes, JAWS, SuperNova, NVDA | no |
| Vario 440 | - | 40 cells | n/a | USB-C | Perkins 6 key entry with cursor routing keys | Voiceover for MacOS, COBRA, WindowEyes, JAWS, SuperNova, NVDA | no |
| VarioPro 80 | - | 80 cells | n/a | USB, Serial | Perkins 6 key entry with cursor routing keys | Voiceover for MacOS, COBRA, WindowEyes, JAWS, SuperNova, NVDA | no |
| VarioPro2 80 | - | 80 cells | n/a | USB-A | Perkins 6 key entry with cursor routing keys | Voiceover for MacOS, COBRA, WindowEyes, JAWS, SuperNova, NVDA | no |

### [Help Tech](https://www.helptech.eu/)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Activator | - | 40 cells | txt, brf, all supported filetypes on the iPhone | USB-C, Bluetooth (on display), USB-A, Lightning (on SmartDock included with unit), spaker/vibration motor | Perkins 8 key entry and QWERTY keyboard, additional buttons for navigation | JAWS, NVDA, Voiceover, BrailleBack | yes |
| Active Braille\* | $6,495 USD | 40 cells | txt, brf | USB-A, USB-C, Bluetooth, Micro SD card, 3.5 mm audio jack, speaekers, vibration motors | Perkins 8 key entry | JAWS, NVDA, Voiceover, SuperNova, BrailleBack | no |
| Active\* | $6,795 USD | 40 cells | txt, brf | USB-B, USB-C, Bluetooth, Micro SD card, 3.5 mm audio jack, speaekers, vibration feedback | QWERTY and Perkins keyboard | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack | no |
| Connect Braille 2nd Gen | - | 40 cells | - | USB-A, USB-C, Bluetooth, Micro SD card, 3.5 mm audio jack, vibration motors | Perkins 8 key entry | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack | no |
| Basic Braille Plus | $3,590 USD | 40 cells | n/a | Micro USB, Bluetooth | Perkins 8 key entry | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack | no |
| Modular Evolution | 1,455−1,455-1,455−13,595 USD | 64 or 88 cells | - | Micro SD card, USB-A | Perkins 8 key entry with additional navigational keys | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack | no |
| Actilino\* | $2,795 USD | 16 cells | txt, brf | (micro SD card, USB-A, USB-C, Bluetooth, speaker, 3.5 mm audio jack | Perkins 8 key entry with cursor routing keys | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack, ChromeVox | no |
| Basic Braille | 2,995−2,995-2,995−7,995 USD | 20, 32, 40, 48, 64, 80 or 84 | - | Micro USB, optionally bluetooth | cursor routing with 6 navigational keys | JAWS, NVDA, Voiceover, SuperNova, Window-Eyes, BrailleBack, ChromeVox | no |

### [Papenmeier](https://www.papenmeier-rehatechnik.de/)

| Product Name | Price | Cells | Document Types | Input/Output (hardware) | Key Entry | Software Compatibility | Onboard Braille Translation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Live | - | 40 cells | - | USB, Bluetooth | Perkins braille keyboard | JAWS, SuperNova, WindowEyes, NVDA, VoiceOver, Talkback | - |
| Live+ | - | 40 cells | - | USB, Bluetooth | QWERTY keyboard | JAWS, SuperNova, WindowEyes, NVDA, VoiceOver, Talkback | - |
| Live20 | - | 20 cells | - | USB, Bluetooth | Perkins braille keyboard | JAWS, SuperNova, WindowEyes, NVDA, VoiceOver, Talkback | - |
| BRAILLEX EL 40c | - | 40 cells | - | USB | double routing keys and additional navigational buttons | popular screen readers for all common operating systems | no |
| BRAILLEX EL 80c | - | 80 cells | - | USB | double routing keys and additional navigational buttons | popular screen readers for all common operating systems | no |

## Recommendations for Purchase (for Public Libraries)

All modern braille devices can connect to a mainstream computer, phone, or tablet. The screen-reading software on that mainstream device will translate text into braille for the user, and the keyboard on the braille display serves as a secondary method for typing and navigating. Additionally, many braille displays can perform simple file management and word processing without being connected to anything, allowing such a device to become a standalone e-book reader. Books can be translated into braille using free software, loaded onto an SD card, and viewed on the Braille display. While the “note takers” in the above table are capable of more complex functions on their own, only the most expensive devices are running a modern operating system. Even those may not receive security updates in the same way as a mainstream device. A braille display with simple note-taking functionality should suffice if the objective is simply to read books. Apple’s mobile hardware currently has better braille support than Android, so an iPad or iPod touch would make a good optional portable companion for a braille display. Windows and Mac OS both provide great braille support. NVDA is a free and open-source screen reader for Windows that will be familiar to many and can be part of a low-cost solution to braille access.

## Braille Display Short List

* The Humanware Brailliant displays are known for their great design and ease of use. Multiple sizes are available, and newer models include basic note-taking functions. These displays are well-rounded, are distributed in Canada, and have an excellent support team.
* The Focus displays are lightweight and durable. They lack note-taking features but can connect with up to five computers or mobile devices over Bluetooth.
* The Orbit Reader 20 Plus and 40 are low-cost devices designed for easy book reading. It can act as an external computer or mobile device display and read books and other documents from an SD card.
* Most displays have flat cells except for companies like Help Tech, which offers concave cells designed to make the reading experience more ergonomic. In addition, Help Tech displays have Active Touch Controls, which will automatically scroll to the next line when it senses the reader’s fingers reach the end of the current line.
* There is great interest in devices that can display multiple lines of braille and even tactile images, opening up access to more spatial information. The Canute 360, Canute Console, Orbit slates, and Graphiti Plus are some of the latest displays with these capabilities available for purchase.