Wearable Optical Topography
WOT-100
[for research purpose]

WOT-100 provides real time measurement up to 4 persons simultaneously*, in the daily-life-like environment.

- **Measurable in the daily-life-like environment**
  - Measures cerebral cortex activities of forehead portion with Near Infrared Spectroscopy (NIRS) method.
  - It enables the measurement in the daily-life-like environment due to the newly developed compact design and wireless data connectivity.

- **Light weight and Wearable**
  - No optical fiber cables between headset and signal processing unit.
  - Custom-made Irradiation capsule packaging 2 wavelength laser diodes.
  - Wearable measurement is allowed by wireless data connection and built-in rechargeable battery.

- **Simultaneous real time measurement up to 4 persons**
  - Displayable measured data real time up to 4 persons on 1 computer display.
  - Useful for the measurement in group works, communications, etc.
  - Possible to collect data in of multiple persons at once in the same experimental conditions.

- **Analysis platform**
  - Analysis platform “POTATo(Platform for Optical Topography Analysis Tools)” is provided, and downloadable from HITACHI web site. “POTATo” is developed by central laboratory of Hitachi, Ltd.

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**System configurations and appearances**

**Measurement principle**

**Example of Screen Images**

- **Topography Mode**
- **Timecourse Mode**

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**WOT-100 is not designed for medical use.**
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
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<tbody>
<tr>
<td><strong>Model name</strong></td>
<td>WOT-100</td>
</tr>
<tr>
<td><strong>Channels</strong></td>
<td>16 channels</td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td>Relative changes of hemoglobin (Oxy, Deoxy, Total)</td>
</tr>
<tr>
<td><strong>Optics</strong></td>
<td>Laser Diode 705[nm] and 830[nm]</td>
</tr>
<tr>
<td><strong>Sampling Rate</strong></td>
<td>200[ms]</td>
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<tr>
<td><strong>Simultaneous measurement</strong></td>
<td>Up to 4 units</td>
</tr>
<tr>
<td><strong>Measurement Mode</strong></td>
<td>Wireless Mode / Standalone Mode (Non-Wireless Mode)</td>
</tr>
<tr>
<td><strong>Measurement time</strong></td>
<td>Wireless Mode(IEEE802.11b): approx. 2[hrs], Standalone Mode: approx. 2.5[hrs]</td>
</tr>
<tr>
<td><strong>External input/output</strong></td>
<td>Input: 2ch(analog) Output: 2ch(TTL level)</td>
</tr>
<tr>
<td><strong>Data Output</strong></td>
<td>CSV (Relative change of hemoglobin Oxy, Deoxy, Total)</td>
</tr>
<tr>
<td><strong>Weight / Size</strong></td>
<td>Headset: approx. 650[g], W:260/D:280/H:92[mm]</td>
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<tr>
<td></td>
<td>Signal Processing Unit: approx 650[g], W:150/D:115/H:62[mm]</td>
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**"POTATo" ANALYSIS PLATFORM**

- "POTATo" is a platform developed for analysis of Optical Topography by central laboratory of Hitachi, Ltd.
- "POTATo" is free download from HITACHI web site. URL: [http://www.hitachi.co.jp/products/ot/analyze/kaiseki_en.html](http://www.hitachi.co.jp/products/ot/analyze/kaiseki_en.html)
- "POTATo" is equipped with functions such as moving average, addition average, baseline revision, necessary for analysis.

- MATLAB of Mathworks, Inc. is necessary separately to use the "POTATo". Please confirm the usable version of MATLAB in the above HITACHI web site.

**Notice**

- WOT-100 is designed to measure the forehead portion only. It may not be measurable depending on the forehead shape.
- The Laser is complied to Class 1M (Japanese Industrial Standards) laser products. When using, please do not stare the laser source.
- WOT-100 is designed for the use in Japanese market and European market.
- WOT-100 uses wireless LAN(IEEE802.11b). If many wireless LAN equipments are used, it may block the use of WOT-100 wireless LAN.
- The specifications are subject to change without notice.

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