
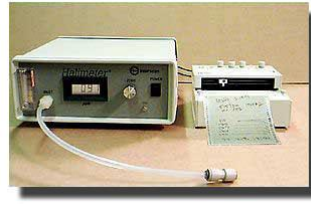


## Comparison Between OralChroma and Halimeter

PRODUCT	<i>OralChroma</i> 	<i>Halimeter</i> 
MANUFACTURER	FIS, Japan	Interscan, USA
DIMENSIONS (WxHxD mm)	280X130X400	254X114X266
WEIGHT	5.5 kg	3.6 kg
FEATURES	<ul style="list-style-type: none"> <li>*Halitosis measuring device (Portable and simple gas chromatograph)</li> <li>*Semiconductor gas sensor</li> <li>*Colum used</li> <li>*Separate into 3 component gas</li> <li>*Durable against temperature and humidity</li> <li>*Display unit of ppb and ng/10ml</li> <li>*2 year of sensor life</li> <li>*No carrier gas required</li> </ul>	<ul style="list-style-type: none"> <li>*Halitosis measuring device</li> <li>*Electrochemical sensor</li> <li>*Measure total VSC gas amount</li> <li>*Influenced by humidity</li> </ul>
TARGET GAS	<ul style="list-style-type: none"> <li>Following three VSC gases</li> <li>*H2S</li> <li>*CH3SH</li> <li>*(CH3)2S</li> </ul>	<ul style="list-style-type: none"> <li>Total VSC</li> <li>*High sensitivity to H2S, but almost no sensitivity to (CH3)2S</li> </ul>
MEASUREMENT RANGE	<ul style="list-style-type: none"> <li>Measurement for 3 component gas</li> <li>*H2S: 50 to 1.000 ppb</li> <li>*CH3SH: 50 to 1.000 ppb</li> <li>*(CH3)2S: 50 to 1.000 ppb</li> </ul>	<ul style="list-style-type: none"> <li>Total VSC</li> <li>0 to 1999 ppb</li> </ul>
SAMPLING METHOD	<ul style="list-style-type: none"> <li>Sampling gas in oral cavity using a syringe</li> <li>Sampling static oral cavity gas</li> <li>Inject the gas into the unity</li> <li>*Measuring time: 8 min</li> <li>*Waiting time for the following measurement: 1 min</li> </ul>	<ul style="list-style-type: none"> <li>*Direct breath sampling with the original tube.</li> <li>*One measurement takes more than 3 min and 30 sec.</li> <li>*Average of 3 measurements is displayed (Total measurement takes more than 10 min)</li> </ul>
DISPLAY	<ul style="list-style-type: none"> <li>*LCD on the unit</li> <li>*Measured data can be memorized in the unit</li> <li>*PC manages the data with attached software</li> </ul>	<ul style="list-style-type: none"> <li>*LCD on the unit</li> </ul>
OTHERS	<ul style="list-style-type: none"> <li>*Warm up-tme: 5 to 30 min (when the unit is unpowered for longtime, the warm-up time automatically increases with a step of 1 min)</li> <li>*Ambient air as a carrier gas is monitored. When it affects the measurement the unit automatically enters waiting mode</li> </ul>	<ul style="list-style-type: none"> <li>*Sensor should be replaced every year.</li> <li>*Warm-up time: 30 min fixed</li> </ul>
MERITS	<ul style="list-style-type: none"> <li>Can measure 3 VOC component concentrations independently.</li> <li>Effective to specific halitosis cause and treatment results</li> <li>Small load of patients.</li> <li>30 sec sampling time</li> <li>Maintenance free for 2 years.</li> </ul>	<ul style="list-style-type: none"> <li>*Easy operation and portable</li> <li>*Influenced by the surrounding alcohol vapors, etc.</li> <li>*Respond to other gases (alcohol, etc.) than VSC in oral cavity.</li> </ul>
DEMERITS	<ul style="list-style-type: none"> <li>*If high concentration of combustible gases always exists near the device, some consideration should be taken. This is because the device uses ambient air as carrier gas.</li> </ul>	<ul style="list-style-type: none"> <li>*Cannot identify and measure separately three component gases.</li> <li>Cannot be used to identify diseases cause and to confirm treatment effect index.</li> <li>*Easily influenced by temperature and humidity.</li> <li>Due to electrochemical sensor characteristics</li> <li>*Large patient burden</li> <li>Breath sampling must be kept for at least 10 min</li> <li>*Long warm-up time</li> <li>Fixed 30 min</li> <li>*Every year maintenance required</li> <li>High maintenance cost</li> </ul>