



TECHNOLOGY COMPARISON

*Our medical devices build upon state-of-the-art optical molecular technologies to **speed diagnosis, reduce complications, and lower costs.***

COMPANY	SPECTROS	SOMANETICS	CAS MEDICAL	HUTCHINSON
DEVICE	T-Stat	INVOS	FORE-SIGHT	InSpectra
Range of Normal	+/- 3	+/- 9	+/- 9	+/- 9
Correlated to SvO2?	Yes	Yes	No	No
Changes Outcome?	Yes	Yes	No	No
Range of Probes?	Yes	No	No	No
Probe Life Span	30 days	24 hrs	24 hrs	3 days
Probe Placement Sensitive?	No	Yes	Yes	Yes
Site Measured	Mucosal	Cortical	Cortical	Muscle
Wavelengths Measured	260	2	4	4
Data Collection Rate	1 second	3 seconds	2 seconds	2 seconds
Date Storage	30 days	28 days	21 days	96 hours
Reading Depth	2-3 mm	2-3 cm	8 - 15.7 mm	0-14 mm

- When it comes to probe readings the T-Stat has a variety of probes for individual applications. The specificity of each probe allows for the most accurate and true read at a calculated microvascular level. Unlike other devices, the T-Stat probes are not placement sensitive. Each probe is customized for its specific function and placement and therefore does not require that the patient be still.

- The T-Stat has the advantage of using over 250 more wavelengths, measuring hemoglobin in tissue 100 times more stronger than infrared, substantially reducing noise and measurement error.

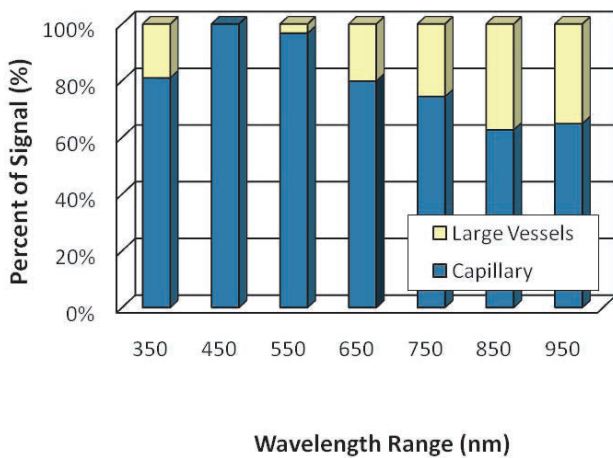
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Spectros markets advanced molecular sensing and imaging devices that shed light on ischemia and cancer. The company's lead product, the T-Stat Tissue Oximeter, was the first medical device FDA-approved as sensitive to ischemia, an insufficient blood flow to tissue. T-Stat is the only commercially-available tissue oximeter that utilizes state-of-the-art visible light spectroscopy (VLS) technology. In clinical use, T-Stat is a real-time, absolute, non-invasive, and continuous tissue monitor that analyzes 260 wavelengths of light.

Contribution of capillary, venous and arterial blood in oxygen saturation using VLS with the T-Stat



*more accurate readings.....
more accurate treatment.....*

When comparing Near Infrared to VLS (Visible Light Spectroscopy) there are many significant reasons why VLS is a superior means for monitoring.

In the 475 to 600 nm range (VLS), the absorbance of hemoglobin is so strong, that light that is scattered into the larger hemoglobin carrying structures (e.g. arteries, veins, arterioles and venules), is nearly fully absorbed within those structures and is not scattered back into the receiving fiber of the sensor. Only the light that passes through the smallest structures (capillaries) makes it back to the receiver for analysis.

Within the visible light (VLS) range, 88% of the return light has passed through capillaries and only 12% of the light returned has passed through the larger structures. Due to the spectral tuning of the T-Stat the return light for the T-Stat® is more than 95% capillary-weighted, with only 5% of the signal coming from the larger structures.

Systems that use NIRS (Near Infrared Spectroscopy) operate in the 750 to 950 nm range. In this range, the return light is only 60% capillary-weighted, and consists of 40% light that has passed through the larger structures such as arteries and veins.

This explains the difference we see in the range of normals between VLS and NIR. Because the range of normals is much narrower with VLS than with NIR, patient management is more effective and changes in a patient's baseline are detected earlier, improving patient outcome.