PASONICA

Blood Test Results In 60 Seconds

Re-inventing Pathology

DESKTOP

PATENT PENDING

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Real-time On-time Results

Desktop Pathology Device

Ultrasound / Hyperspectral Blood Analysing Technology

Pasonica specializes in performing blood characterization without using the traditional method of centrifuge filtration and separation agents to isolate different elements of the patient's blood to achieve an analysis of their plasma. Pasonica uses a combination of technologies such as ultrasound and hyperspectral imaging to perform a remote sensing blood analysis of the patient's blood which eliminates the need to tamper with the donor's blood physically.

This new method developed by Dean Viglione achieves higher analytical accuracy of the donor's blood because of its ability to examine the plasma in its natural state without using centrifuge filtration. By exploiting ultrasound technology to produce pressure waves via a transducer, we can bounce these waves off all targets which in this application is the blood plasma of a human body. Every element in the blood has a unique frequency signature which can be exploited to analyze many different targets of the blood plasma and cells.

Ultrasound pressure waves can also detect numerous abnormalities of the blood and blood cell structures. All this critical blood information collected by using ultrasound technology; the application of this technology is limited only by its ability to assign a frequency signature to every single possible element in the blood. Once this is achieved performing an ultrasound blood test will only take 60 seconds to complete.

Furthermore, using a combination of hyperspectral imaging and ultrasound gives this technology application analytical capabilities that are unmatched by the current traditional centrifuge filtration blood testing methods. Hyperspectral imaging, like other spectral imaging, collects and processes information from across the electromagnetic spectrum. The goal of hyperspectral imaging is to obtain the spectrum for each pixel in the image of a scene, with the purpose of finding objects, identifying materials, or detecting processes.

Using ultrasound / hyperspectral technology to conduct blood testing in the medical industry is extremely disruptive and will save many lives. The possibilities are virtuously endless as the application of this technology can be exploited to a global healthcare market.

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Desktop Pathology

Ultrasound / Hyperspectral
Blood Analysing Technology

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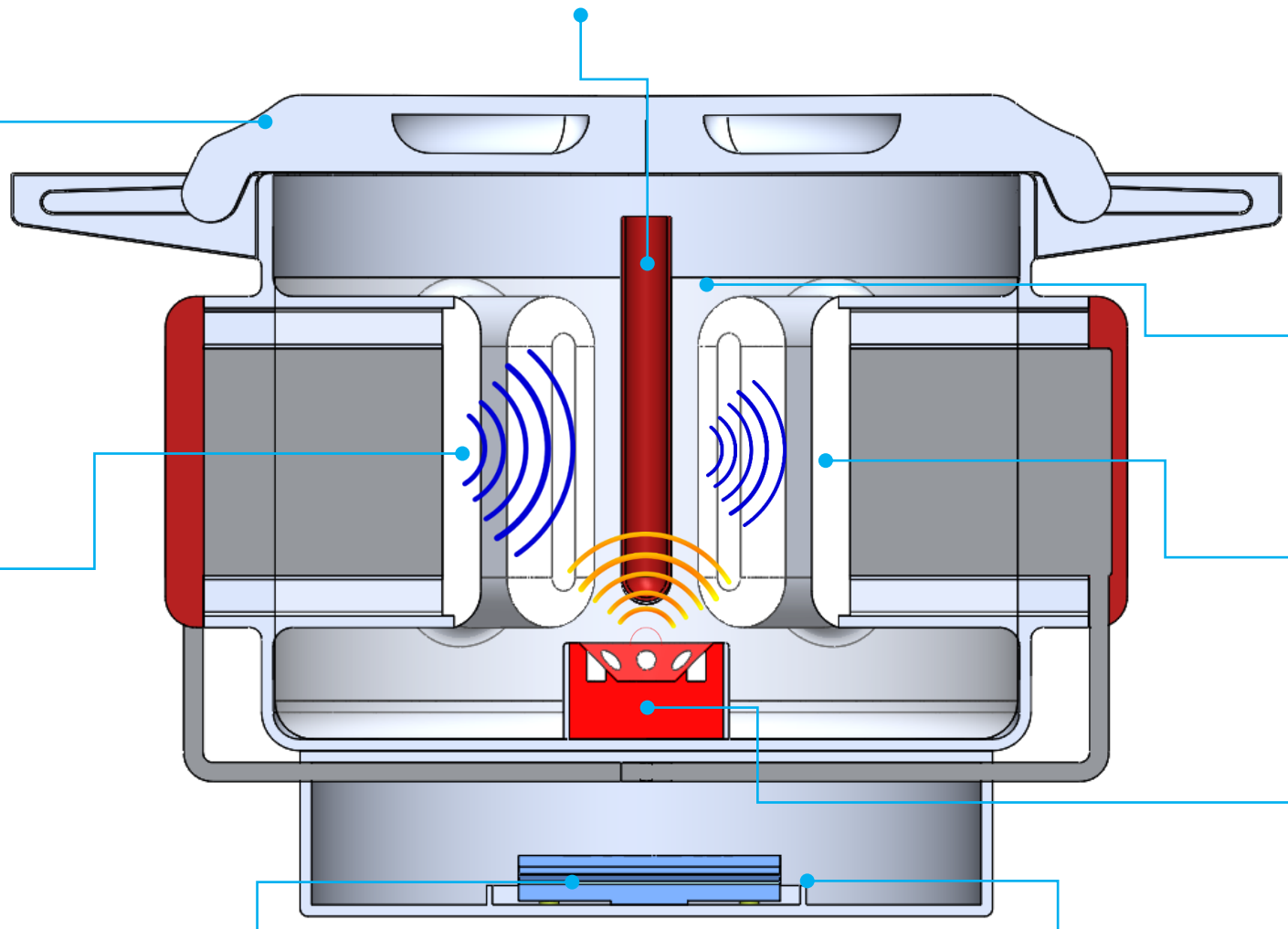
Desktop Pathology Device Features:

SECTION SIDE VIEW



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Desktop Pathology Device

The inner space of the Pasonica desktop pathology device Is filled with solid silicone gel to reduce pressure wave impedance.

Traditionally ultrasound is used to detect bone and soft tissue, however in this case; we are using ultrasound to detect blood and fluid using high-frequency pressure waves to accurately characterise blood plasma and other elements found in the blood.

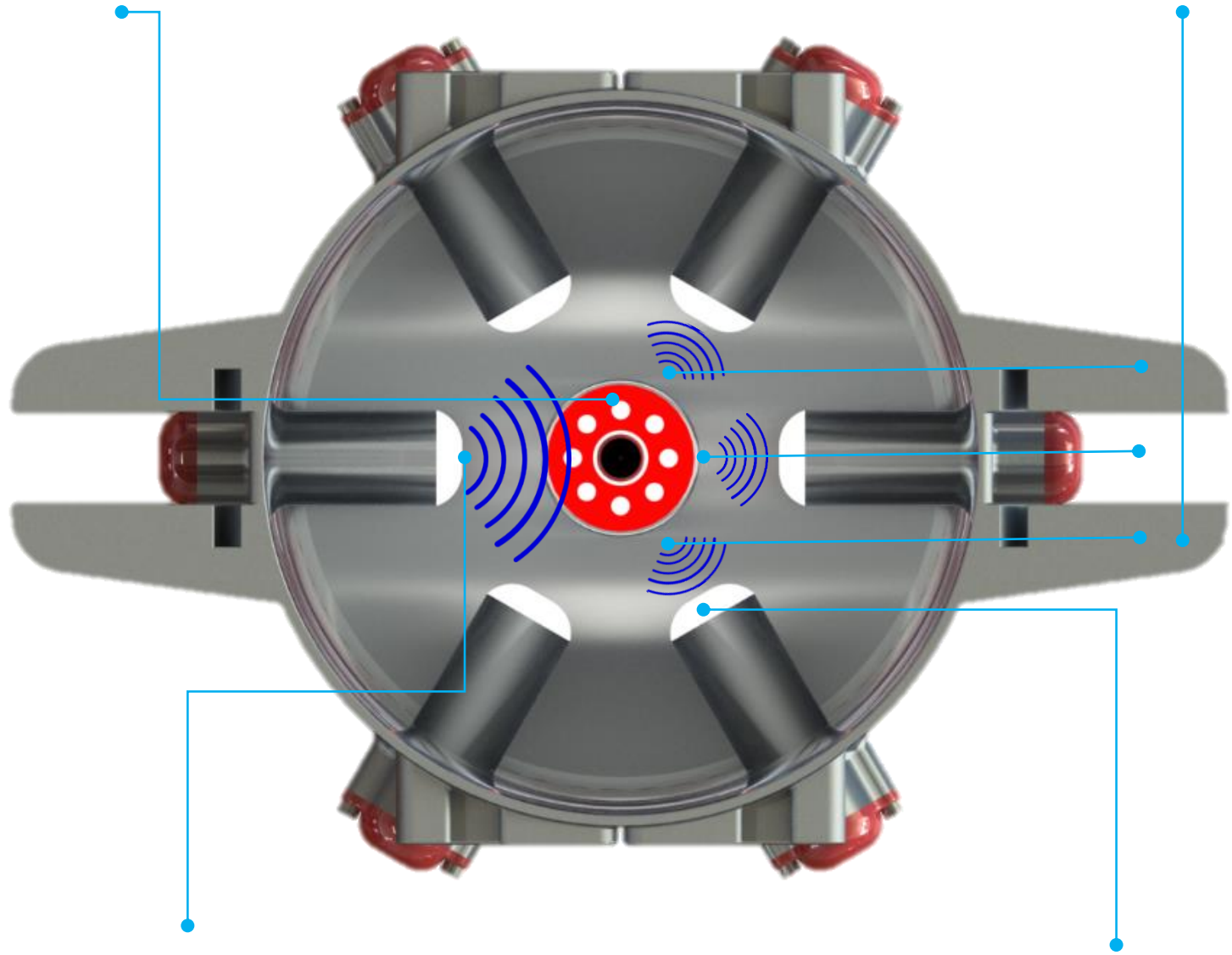
Usually, ultrasound characterises fluid and blood as anechoic however because we are only examining blood & fluid in a closed system with no bone and soft tissue in appearance the system is relative.

Furthermore, the implementation of hyperspectral imaging technology into this system gives Pasonica desktop unrivalled blood characterisation capabilities.

SECTION TOP VIEW

Hyperspectral Camera capturing spectral light waves, interpreted by a sophisticated intelligent processing system

Multiple transducers reading multiple pressure waves. In this system no pressure waves are lost.



Ultrasound Pressure Wave Produced by one transducer at any one time

Multiple led lights to assist Hyperspectral imaging

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360-degree Configuration

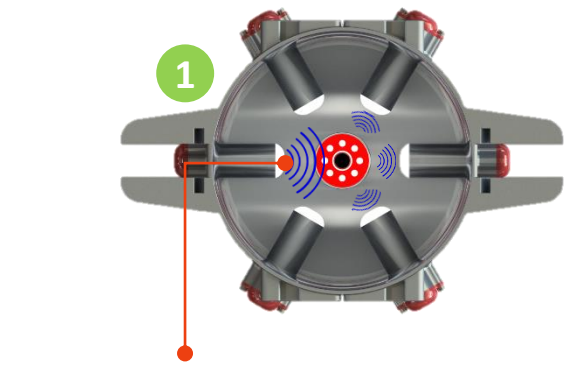
Each transducer takes its turn deploying a pressure. All transducers in this system listen for pressure waves while in operation. This gives the Pasconica Desktop a 360-degree comprehensive blood characterisation capability.

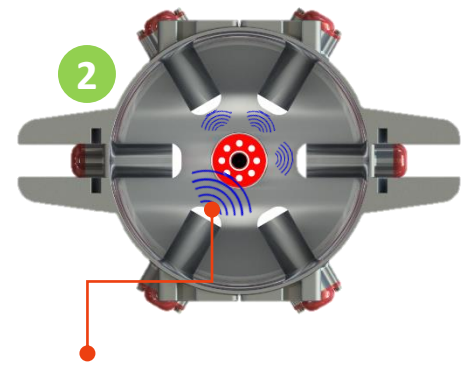
Surrounding transducers still read all pressure waves regardless if they are echogenic or anechoic, no pressure waves in this system are lost. When sound waves are transmitted into the blood, they interact with plasma and become attenuated (reduction of signal strength) by absorption, scattering, and beam divergence.

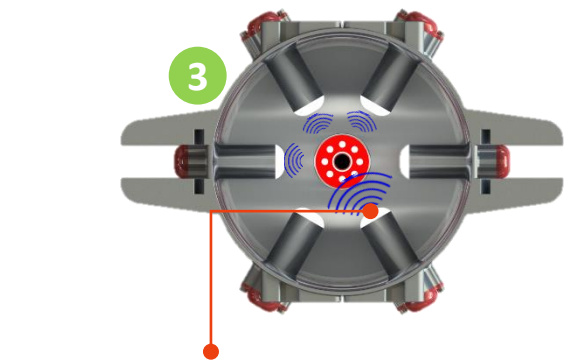
Reflected sound waves (echoes) are relative to their intensity and are dependent on the number of binary digits that can be stored in the digital memory of the equipment.

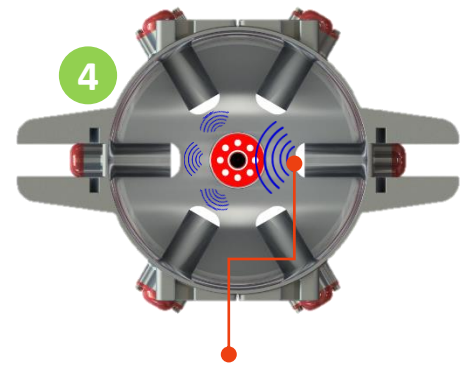
Echoes are created when released sound waves encounter structures with an acoustic mismatch. This causes some sound waves to continue traveling through the plasma and others to be reflected back to the admitting transducer. These reflected echoes are then converted into a frequency signature.

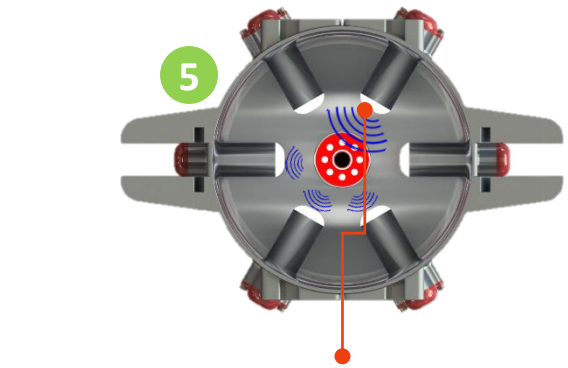
Six Separate Transducers Positioned In A 360-degree Configuration For Maximum Analytical Proficiency

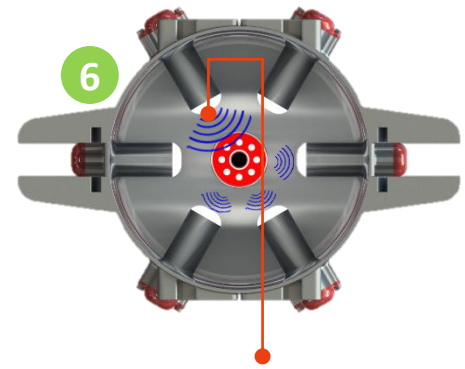












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Hyperspectral Imaging

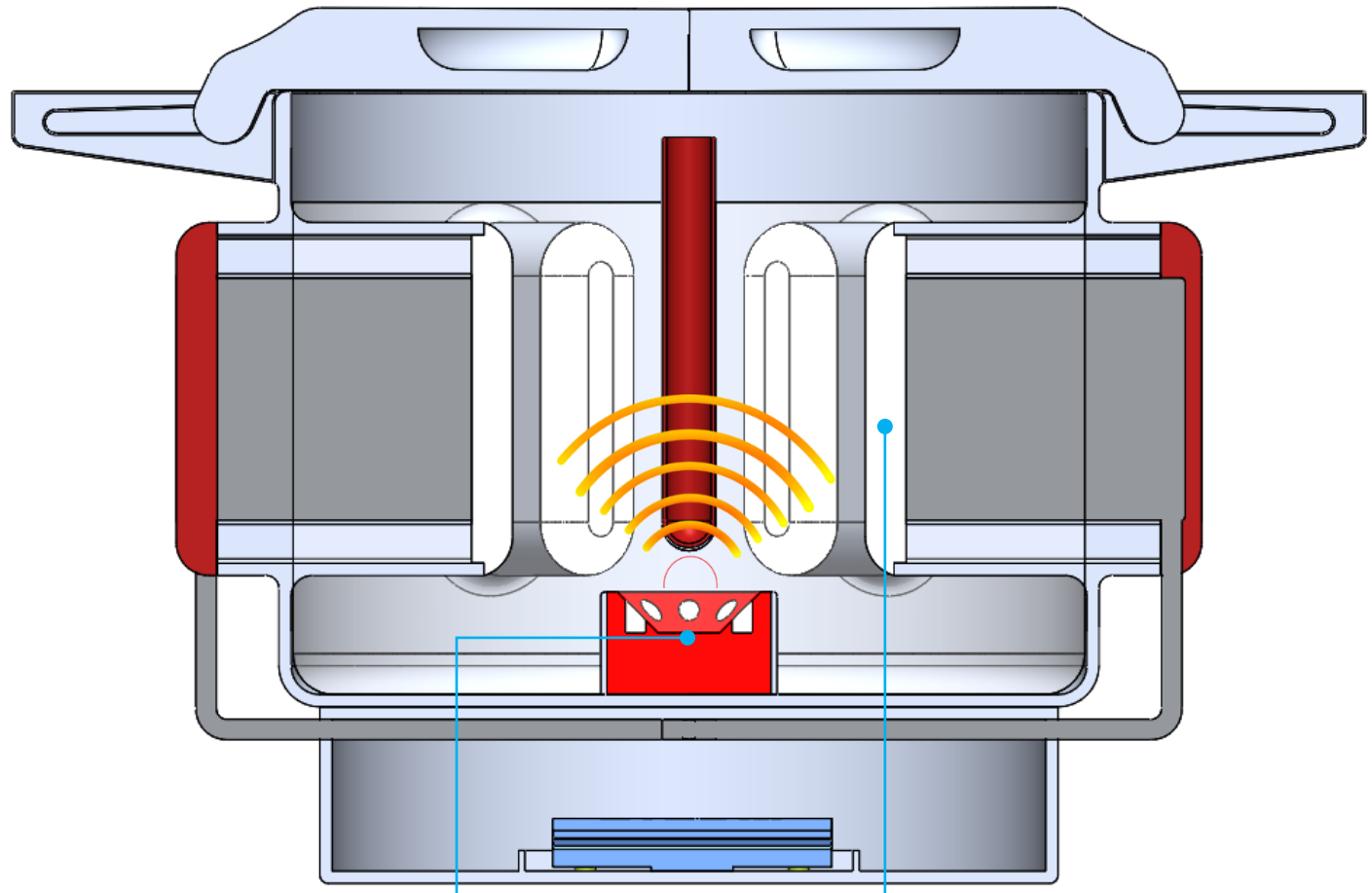
Hyperspectral imaging uses electromagnetic radiation, which is unobtrusive in most cases; however, when using led light in conjunction with this technology on blood plasma, we can receive more than just outer surface information.

Optical remote sensing analyses varying electromagnetic radiation (spectral properties) in the visible-near infrared, shortwave infrared and thermal infrared spectral region (from 0.4 to 14 microns), reflected from different targets in the blood.

Hyperspectral remote sensing, also known as imaging spectroscopy, is based on the analysis and evaluation of the reflected and emitted radiation detected by a high number of narrow, contiguous and continuous spectral bands.

The detailed spectral characterisation of surface absorption features provided by imaging spectrometers enables the use of robust inversion algorithms for the retrieval of bio and chemical information over the imaged area.

SECTION
SIDE VIEW



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Three Easy Steps To Get Your Blood-Test Results

Test Tube of blood

1

Manually insert
Test Tube of Blood
into Ultrasound
Solid silicone Gel

2

Test Tube Inserted

3

Close sliding cover
start scanning plasma.
All data sent to
Pasonica's CPU and
processed Within 60 secs

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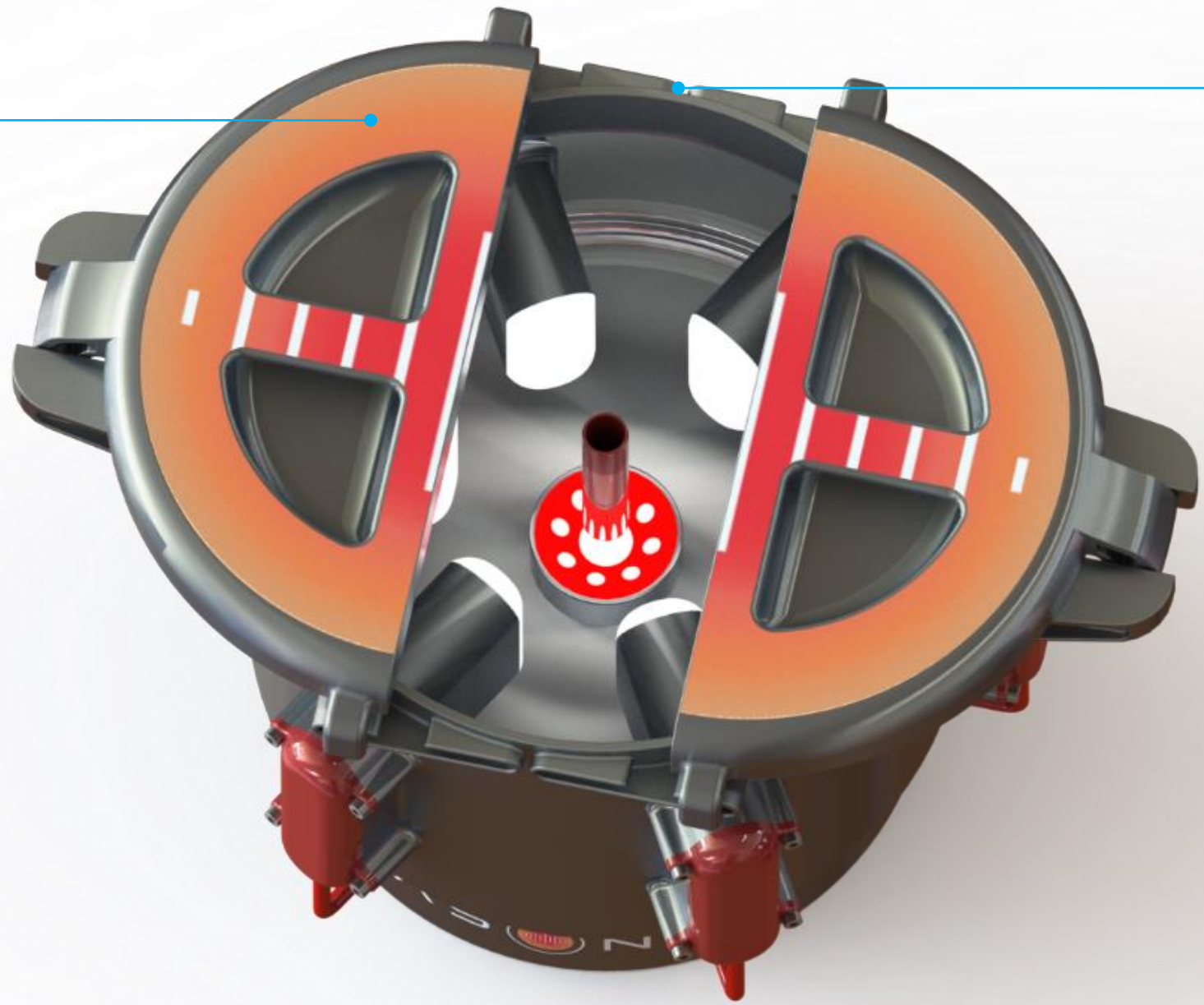
ABS Medical Plastic Frame
And Sliding Lid Cover

Easy To Use Sliding Cover



- PORTABLE DESIGN
- LIGHT WEIGHT
- IMPACT RESISTANCE
- BATTERY POWERED

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Desktop Pathology Device Size:

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Your Patient's Pathology Results
Available in Minutes

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Desktop Ultrasound / Hyperspectral Pathology Device

This blood testing device uses pressure waves to identify all elements in the patient's plasma. Each ultrasound transducer on the device in sequence producers and sends pressure waves.

The other transducers in sequence listen to pressure waves that have entered and existed or bounced off the different elements in the patient's plasma. By operating in this manner, the device produces an extremely accurate 3D analytical data representation of the patient's blood.

All information collected by this device is processed by the Pasonica CPU application that is designed to assign and identify frequency codes produced by every element in the human blood.

Using Ultrasound / Hyperspectral technology, we can identify:

- HDL - High Density Lipoprotein Level;
- LDL - Low Density Lipoprotein Level;
- Ratio of HDL and LDL;
- CRP - C-Reactive Protein Level of inflammation with the body;
- CBC - Complete Blood Count;
- TSH - Thyroid-stimulating hormone level;
- INR - International Normalized Ratio;
- LFT - Liver Function Test;
- U+E - Urea and Electrolytes;
- CMP - Comprehensive Metabolic Panel;
- WBC - White Blood Cell Count;
- RBC - Red Blood Cell Count;
- HBC – Hemoglobin Level of hemoglobin molecules;
- HCT – Hematocrit Level;
- PLT – Platelets level;
- Etc. Etc. Etc.

As a secondary technology, we also use hyperspectral imaging technology to cross-reference different elements in human blood further. Hyperspectral imaging has traditionally been applied in satellite and military applications, as this technology has reduced in size and matured over the years we now are applying this technology to medical blood analyzing.

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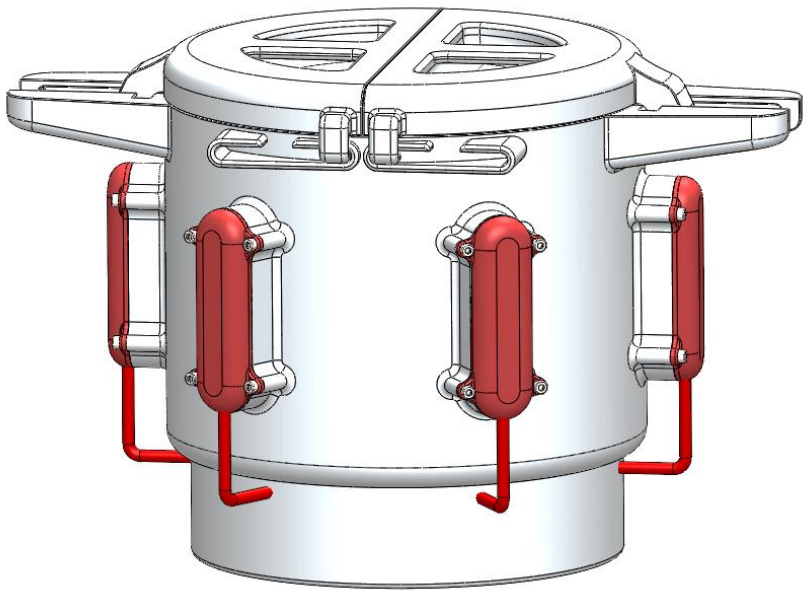
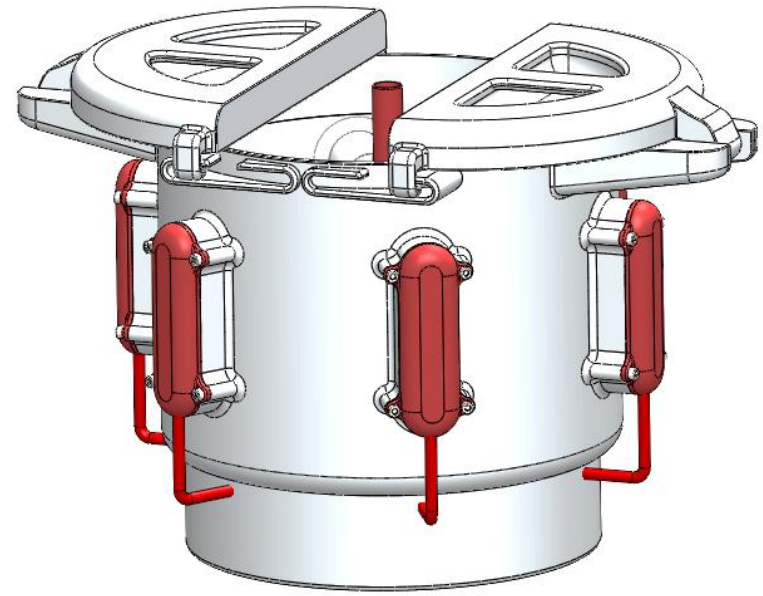
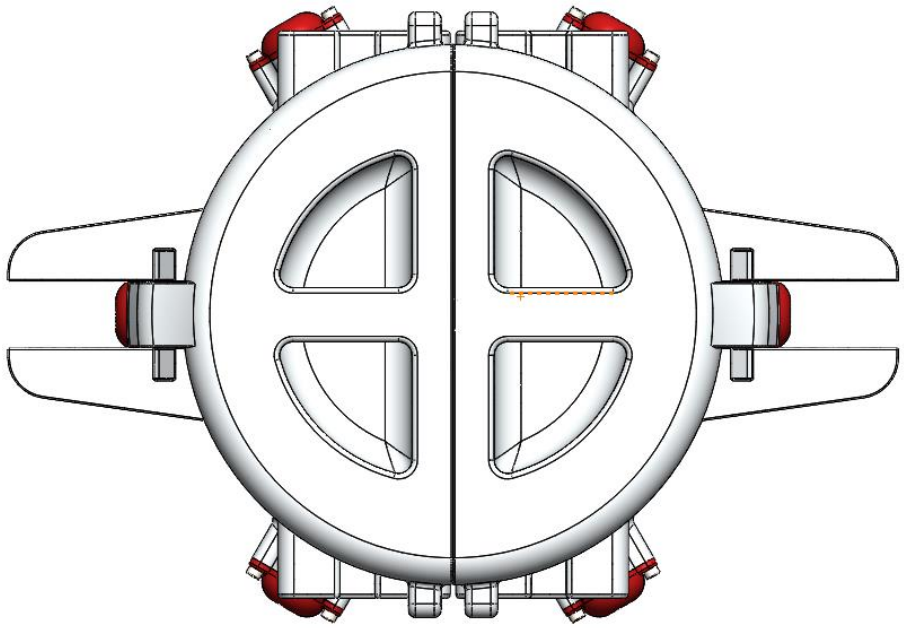
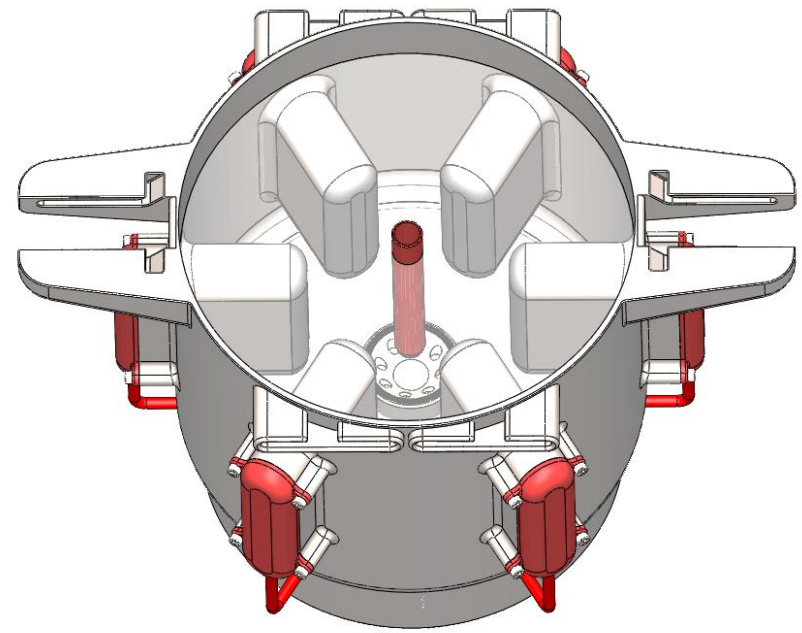




ISOMETRIC VIEWS





COVER REMOVED

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Patent Pending

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