

# A Dynamic Change

in Lung Function Assessment



Structured Light  
Plethysmography (SLP)



Zero contact, non-aerosol  
generating assessment solution



Revolutionary respiratory  
imaging system

# About PneumaCare

PneumaCare Ltd is a Cambridge based company, pioneers of the technology – Structured Light Plethysmography (SLP). Our revolutionary, respiratory imaging system provides assessment solutions, that are non-contact, non-invasive and non-aerosol generating. Breaking new ground, PneumaCare Ltd are at the forefront in changing the face of assessment in the respiratory field.

Founded in 2009, the company's initial focus was centred on the clinical need for better lung function assessment in children.

Advancement in Motion Capture and CGI for animation provide the initial ideas for PneumaCare's SLP technologies. Using the concept of marker motion tracking, PneumaCare's engineering team developed the novel ability to track movement in patients without physical markers.

Since that time, PneumaCare has expanded this focus to include adults in the lung function, ICU and thoracic surgery segments. PneumaCare markets Thora-3Di®, an imaging and assessment device utilising novel non-contact 3D-imaging technology. This breakthrough in patient care is presently operating in a range of hospital environments from paediatrics through to surgical assessment and adult intensive care.

PneumaCare has received product approvals including CE marking and FDA 510(k) for its Thora-3Di® product, and has all relevant quality approval certificates.

# Our mission

To provide zero-contact, non-aerosol generating technology to actively assess lung function, and to create reliable diagnostic pathways in order to establish an enhanced standard of care.



Our products address the need for economic and accessible diagnostic information, post-operative assessments and intensive care imaging.

Using Thora-3Di® patients can be assessed while breathing naturally or performing spirometric manoeuvres without the need to breathe into, interact with, or contact the apparatus. Non-contact assessments also reduce risk of infection and instrument running costs.

A revolutionary advance in respiratory assessment, PneumaCare's proprietary SLP measurement technologies capture real-time functional images of chest wall movement, allowing for a better understanding of patient respiration. This detailed information is translated into quantifiable pulmonary function outputs for use in a range of hospital environments.

This breakthrough technology allows measurements to be carried out without physical contact with the patient or subjecting them to unnecessary radiological exposure; opening assessment to a wide range of patients from paediatrics to adults, both conscious and unconscious.



# Introducing Thora-3Di®

PneumaCare's vision is to provide revolutionary imaging technologies that increase efficient and effective patient care.

Through the development of our breakthrough SLP (Structured Light Plethysmography) imaging technology, we are meeting that vision today.



## Real Time Respiratory Assessment

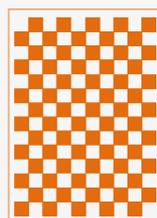
By measuring the chest wall, the Thora-3Di® can show the clinician the dynamics of lung function in real time, reflecting respiratory function, and divide that performance data into various regional assessments for comparison. This provides a deeper understanding of the patient's lung function.

Using Thora-3Di®, the clinician can understand objectively – qualitatively and quantitatively – not only the patient's lung performance symmetries but also the change of that performance over time. This can be done without the need of forced manoeuver testing or movement of the patient to a measurement site.

Moreover, the patient can be sitting or lying, conscious or unconscious because Thora-3Di® is non-contact and does not require any direct interaction with the patient.

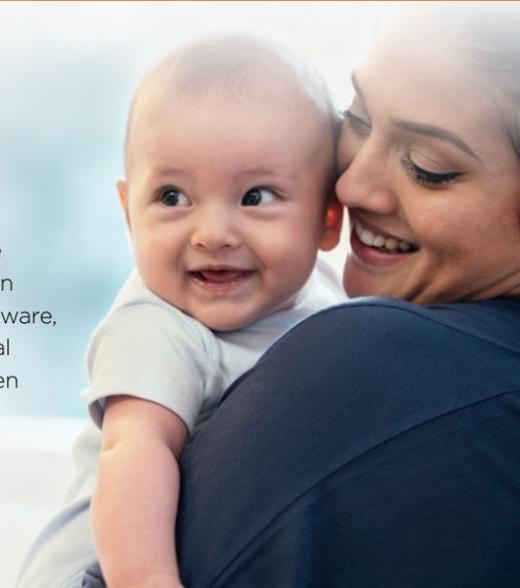
## Product Specifications

The Thora-3Di® is part of the PneumaCare range of lung function imaging and assessment devices that utilise PneumaCare's proprietary SLP (Structured Light Plethysmography) technology to measure and assess patient pulmonary functions. The Thora-3Di® is comprised of the Thora-3Di® scanning head, portable rolling stand and the PneumaView 3D™ software operating system.



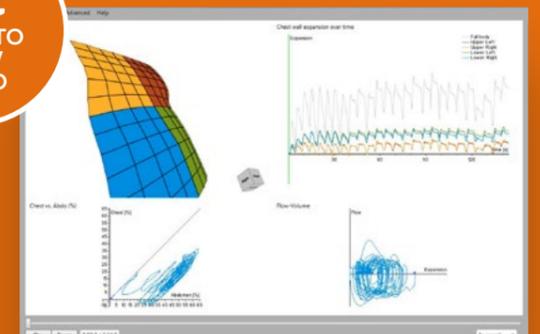
## Structured Light Plethysmography (SLP)

PneumaCare projects a structured image covering the patient's chest and abdomen and records movement in four dimensions. Using PneumaCare's unique SLP software, a 3-dimensional image is constructed showing regional breathing correlations between the chest and abdomen and between the left and right thoracic hemispheres. This recorded image can be replayed for the doctor, in real-time, while allowing the clinician to manipulate the view in the PneumaView 3D™ output software.



## PneumaView 3D™

PneumaCare's PneumaView 3D™ software provides the operator with the ability to divide the image into defined regions for comparison of the patient's symmetry of breathing. These regional contributions can be analysed by comparing the upper chest and abdomen or the left and right sides of the chest; detailing potential asymmetries that are indicative of respiratory-related issues.



# Non-contact Respiratory Assessment

PneumaCare provides clinicians with unique non-contact ways of observing active, real-time respiratory rate and regional respiratory function via movement of the chest wall; delivered from a portable, non-contact measurement platform.

Our range includes:

Thora-3Di®  
Thora-3Di® Compact  
Thora-3Di® Infant  
PneumaView 3D™



## Applications

Respiratory Function in  
Infants and Children

Asthma

Respiratory Diseases  
in Adults

Asthma

COPD

Pipeline -  
future applications

Dysfunctional Breathing

Pre and Post-thoracic  
Surgery Assessment

COVID-19

**PNEUMACARE®**

**PneumaCare Limited**  
Windsor House, Station Court,  
Great Shelford, Cambridgeshire,  
CB22 5NE, United Kingdom

Email: [customerservice@pneumacare.com](mailto:customerservice@pneumacare.com)

[www.pneumacare.com](http://www.pneumacare.com)

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