TRANSFORMED ARROGYAM PVT. LTD.

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RETINA

STEREOTACTIC SURGERY NAVIGATION SYSTEM

Precision-led Planning | Real-time Guidance | Confident Clinical Navigation



MINIMALLY INVASIVE SUPPORT

REAL-TIME OPTICAL TRACKING

CT/MRI FUSION

BROAD INSTRUMENT COMPATIBILITY

Coming to India through TransforMed Arrogyam Pvt. Ltd. Pre-launch enquiries are now open.

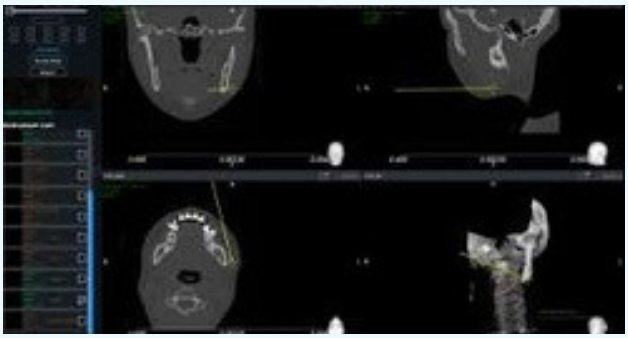
Product Catalogue | India Edition

NAVIGATE WITH CONFIDENCE

A unified platform for image-guided surgery

The RETINA brings intelligent navigation and digital imaging together to provide surgeons with precise, real-time guidance during procedures. Compatible with a wide range of instruments already used in the operating theatre, it integrates seamlessly into existing surgical workflows.

By supporting minimally invasive procedures and real-time navigation, RETINA gives surgical teams a clear visual reference to the planned target and surrounding anatomy.



Integrated digital imaging for precise surgical planning and real-time navigation.

1 Real-time optical tracking

Monitor instrument position, trajectory, depth and distance to the planned target during the procedure.

2 CT and MRI fusion

Fuse CT and MRI datasets to visualise soft and hard tissue together for pre-operative planning.

3 Instrument compatibility

Register and calibrate a broad range of existing surgical instruments for use within the navigation workflow.

4 Intuitive clinical workflow

A clear step-by-step process supports patient registration, instrument registration and real-time navigation

DESIGNED TO SUPPORT

Stereotactic workflows **Plastic Surgery** **Pre-operative planning**

Minimally invasive approaches **Real-time execution support** **ENT**

Neurosurgery **Image-guided procedures** **Oral and maxillofacial surgery**

A CLEAR THREE-STEP WORKFLOW

From preoperative imaging to real-time navigation

RETINA connects every stage of the surgical workflow—from pre-operative planning and patient registration to real-time instrument navigation—helping the clinical team maintain accuracy, continuity and control throughout the procedure.

Core System Configuration



STEP 1

Load CT and MRI datasets

Import the relevant preoperative CT and MRI datasets into the planning environment. Where applicable, the datasets can be fused.

STEP 2

Register instruments and patient

Register the required instruments, then complete patient registration using a point-based or scan-assisted method.

STEP 3

Navigate in real time

Track instrument position, trajectory, depth and distance relative to the planned target and critical anatomy.

SYSTEM ELEMENTS

Tracking unit

3D optical tracking system with infrared illumination and dual lasers for spatial target localisation.

PC cart and display

Integrated computer, high-resolution display and touch-enabled interface.

Navigation software

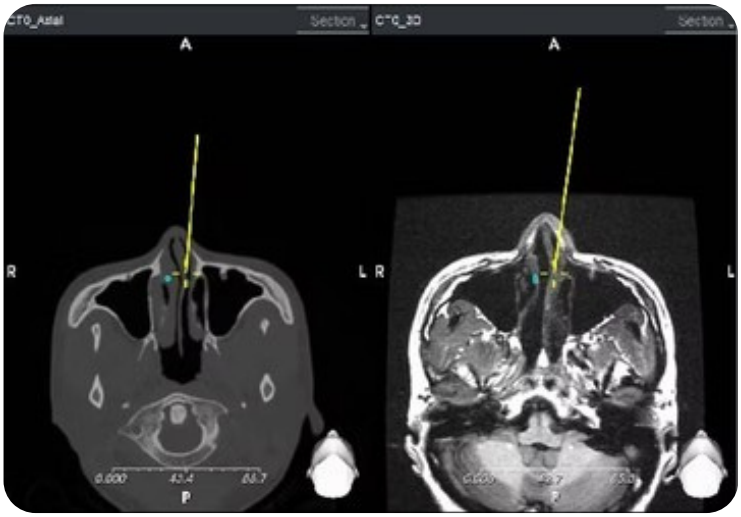
Planning, fusion, segmentation, guidance, mirroring and registration tools.

CLINICAL PLANNING TOOLS BUILT AROUND THE ANATOMY

Integrate imaging, define structures and navigate with precision

RETINA brings together image fusion, segmentation, nerve delimitation, mirroring and trajectory planning to help clinical teams visualise anatomy, define surgical targets and prepare for the procedure.

During surgery, real-time guidance displays the instrument's position, depth and angle in relation to the planned target and surrounding anatomy.



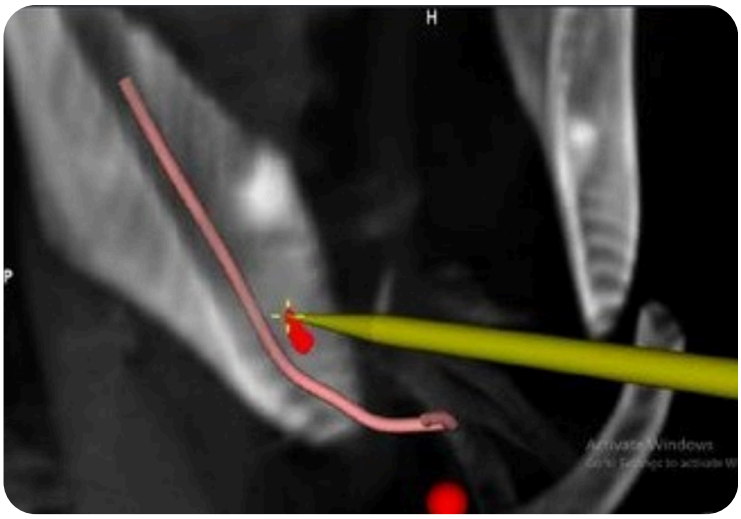
Fusion

Combine CT and MRI datasets to view soft and hard tissue in a unified planning environment.

Segmentation

Colour-code surgical targets and anatomical structures for clear visual planning.





Nerve and vessel delineation

Trace nerves and vessels, then monitor the distance between the instrument and the defined structures.

Guidance mode

View real-time position, depth and angle against the planned path and target during execution.



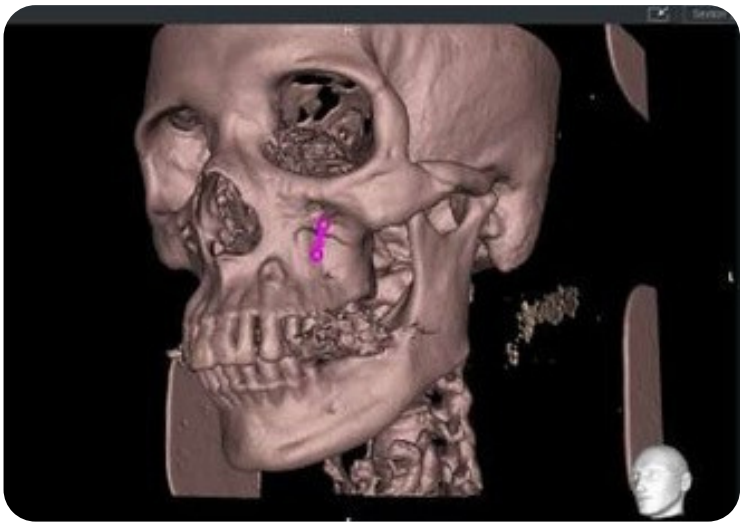
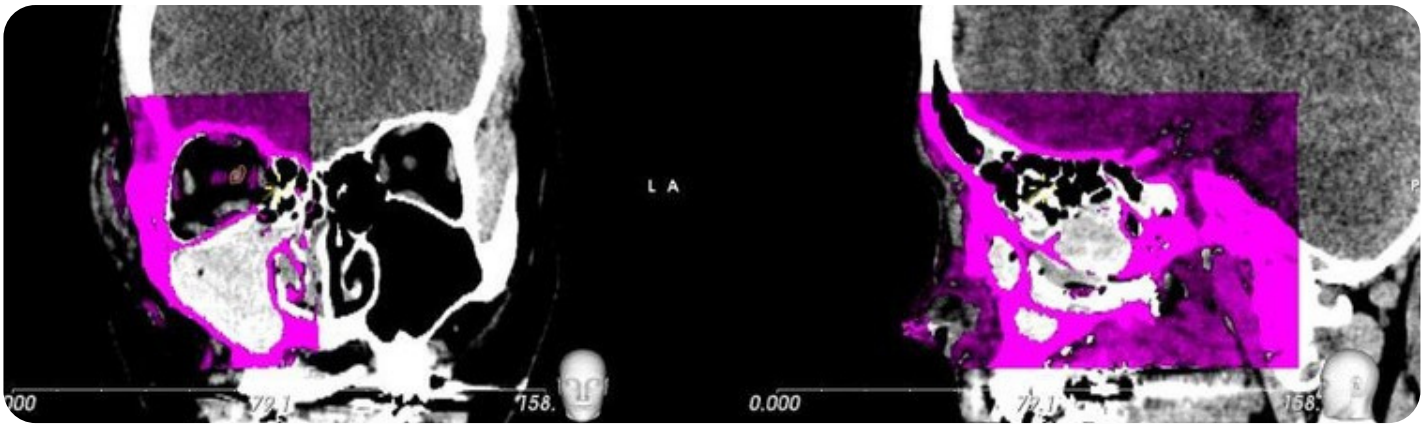


Plate positioning

Create a 3D model from preoperative imaging to virtually position or adjust plates before surgery.

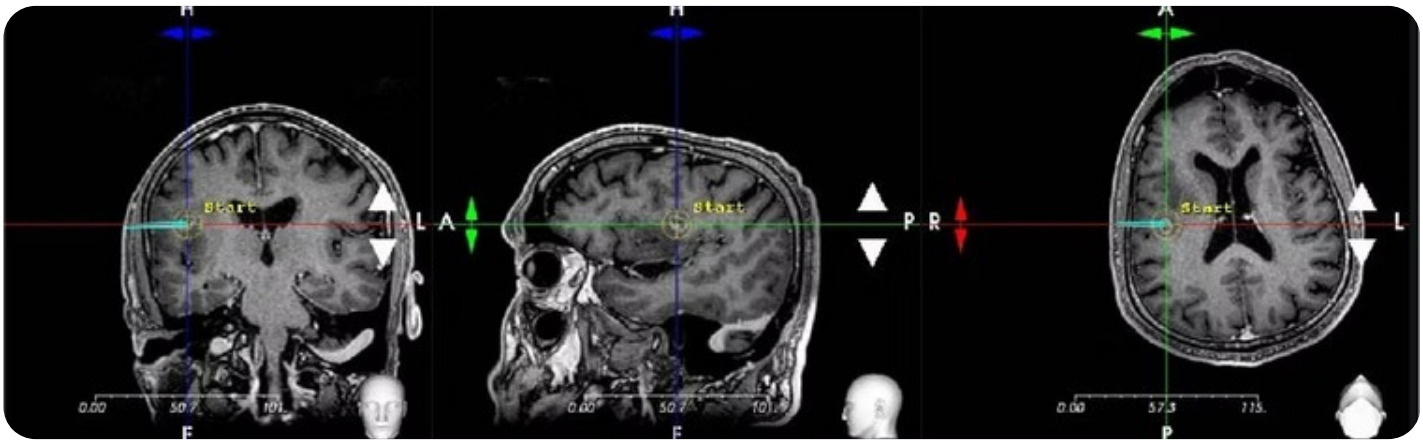
Mirroring

Mirror healthy anatomy into the affected region to support reconstruction planning in maxillofacial workflows.



Surgical path planning

Define targets and trajectories during planning, then follow the selected path with real-time visual feedback during the procedure.



1 Real-time optical tracking

The RETINA Tracking Unit uses a 3D optical tracking system to detect reflective markers on instruments, allowing their position and movement to be displayed in real time.

2 Two registration methods

- **Track Scan Registration**
- **Feature Point Registration**

Supports flexible patient registration for different surgical approaches and available anatomical access.

3 360° marker visibility

The probe's cylindrical marker design provides 360° visibility to the 3D optical tracking system, helping surgeons map anatomical points accurately during registration.

DESIGNED AROUND THE NEEDS OF THE SURGICAL ECOSYSTEM

Value for surgeons, hospitals and patients.

Navigation technology delivers the greatest value when it fits the clinical workflow, supports informed decisions and integrates with the operating theatre.



Real-time visual feedback helps the clinical team align execution with the preoperative plan.

For surgeons

Real-time position, depth and trajectory feedback

Planning tools for targets, paths and critical anatomy

Compatibility with a broad range of instruments

Clear visual guidance throughout the workflow

Navigation support for informed surgical execution

For hospitals

Supports integration with established operating theatre workflows

May reduce the need to replace compatible instruments

Preoperative planning can support efficient use of theatre time and resources

Modular system configurations for different facility needs

For patients

Supports minimally invasive approaches

Designed to help avoid unnecessary tissue disruption

Risk-aware planning around defined critical anatomy

REAL TIME
Instrument tracking and guidance

2K DISPLAY
2560 x 1440 system monitor

FLEXIBLE
Point-based or scan-assisted registration

CONNECTED
CT/MRI fusion and planning environment

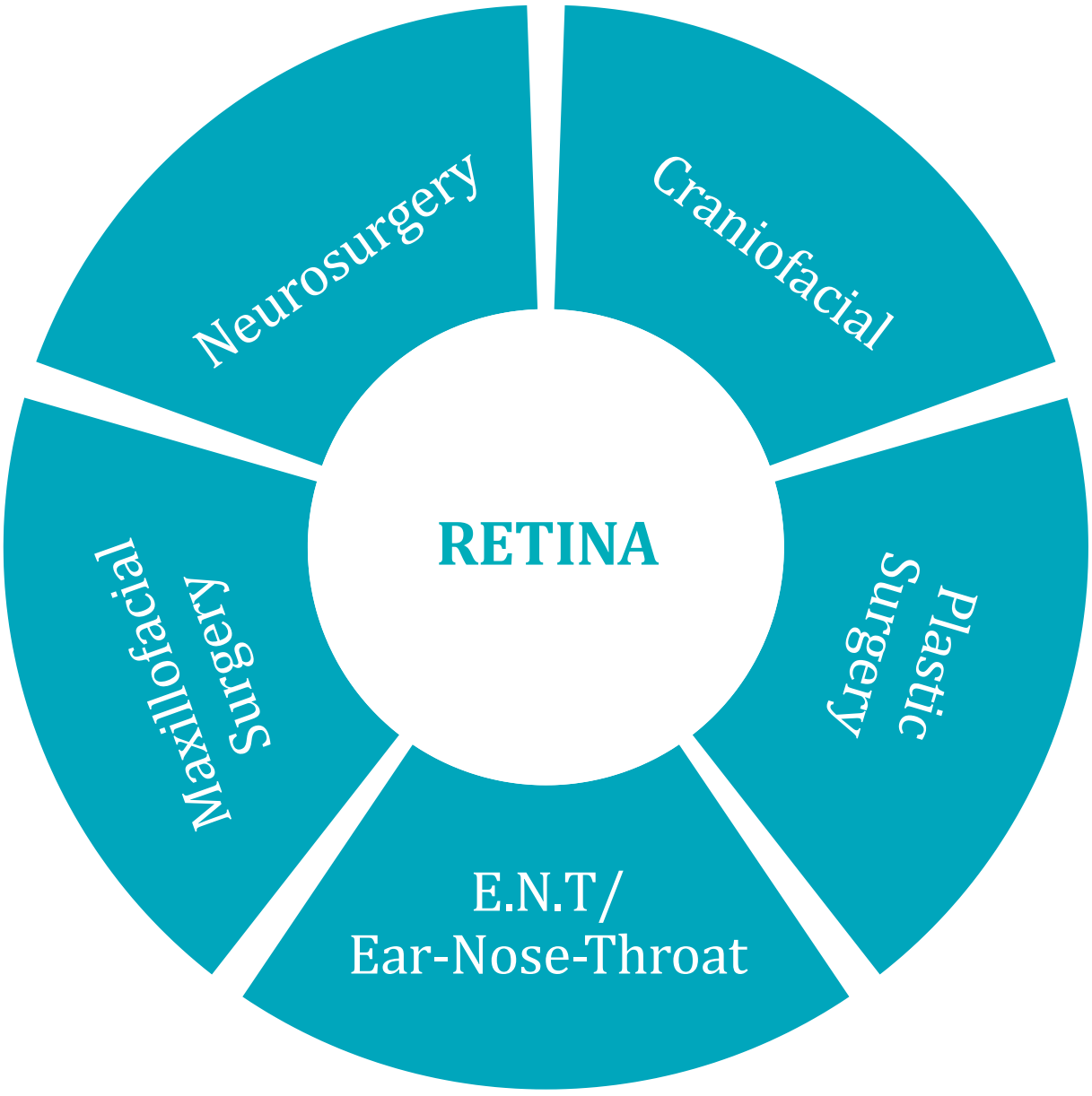
Clinical outcomes depend on the procedure, the patient, clinical judgement and correct use of the system.

AN INSTRUMENT SET CONFIGURED FOR THE PROCEDURE

Sterilisable components and registration accessories

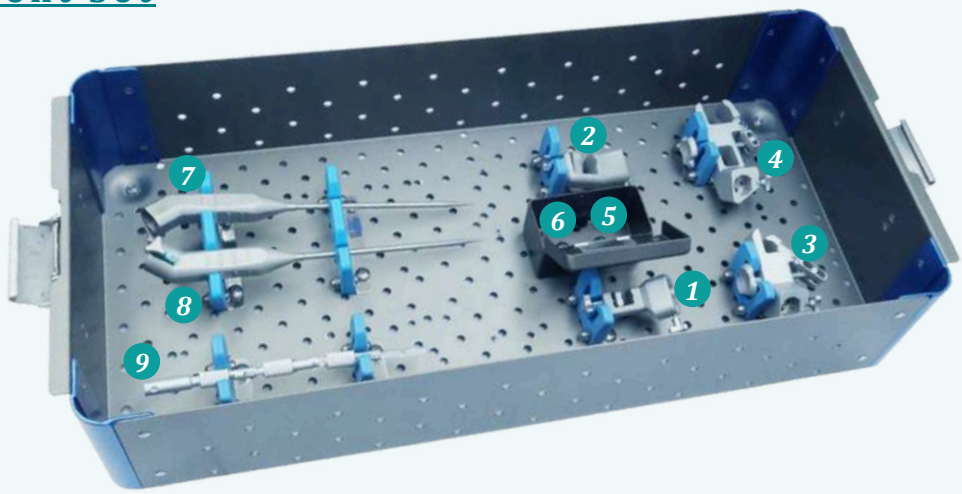
RETINA supports image-guided procedures across neurosurgery, ENT and maxillofacial surgery. Procedure-specific instrument sets are available in sterilisable stainless-steel containers for safe handling, preparation and storage.

The standard configuration includes the standard instrument set. Dedicated Neurosurgery, ENT and Maxillofacial sets are available for separate purchase.



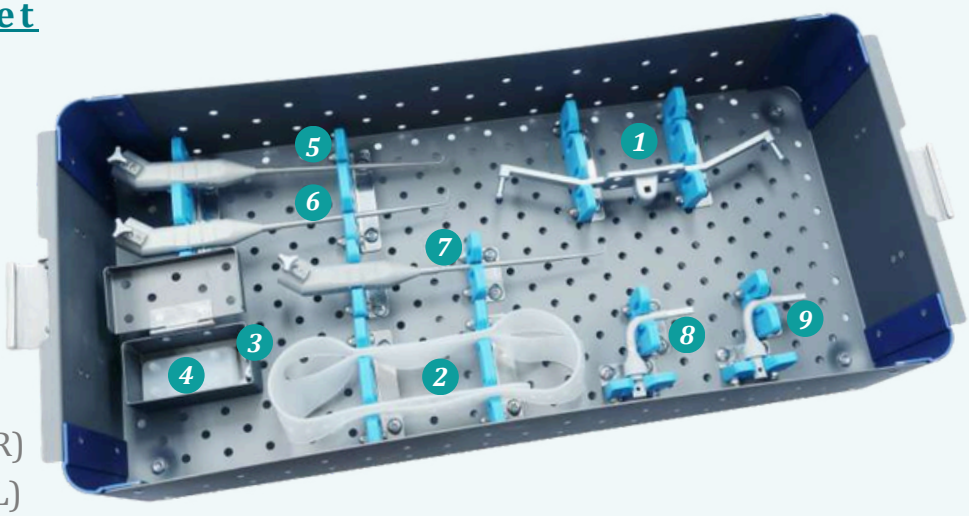
Standard Instrument Set

1. Adapter 0106
2. Adapter 0312
3. Adapter 0616
4. Adapter 1625
5. Screw
6. O-Ring
7. Pre-operative Probe
8. Intra-operative Probe
9. Multi-angle Holder



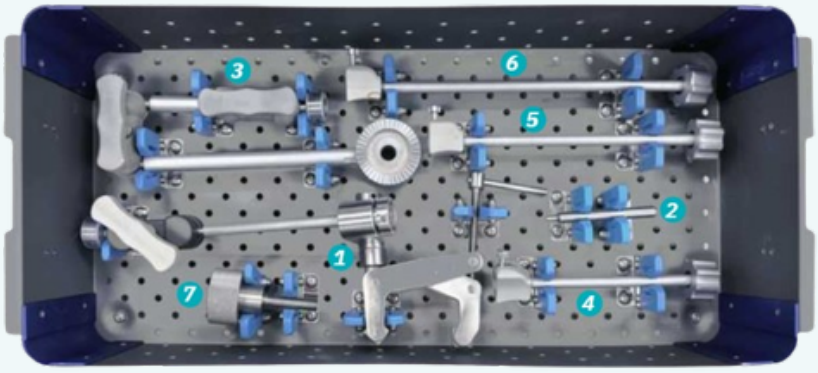
ENT Instrument Set

1. Marker Holder
2. Elastic Belt
3. Screw
4. Soft Pad
5. Sphenoid Sinus Probe
6. Frontal Sinus Probe
7. Maxillary Sinus Probe
8. Headband Attachment (R)
9. Headband Attachment (L)



SKULL CLAMP ACCESSORY SET

1. Machine C-Clamp Assembly
2. C-Clamp tool
3. Skull Clamp Positioner Arm Holder
4. 118 Positioner Arm Holder
5. 168 Positioner Arm Holder
6. 218 Positioner Arm Holder
7. Frame Screw



Instrument trays shown are illustrative. The standard instrument set is included with the system; any additional procedure-specific sets must be purchased separately.

A COMPLETE ACCESSORY ECOSYSTEM

Components, attachments and single-use items

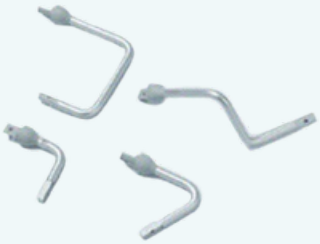
Supporting accessories help adapt the system to different workflows, while designated consumables are supplied for single use, where applicable.

COMPONENTS



Laser Scanner

Supports scan-assisted registration of the head.



Jaw Attachment Set

Diverse attachment options support different maxillofacial and registration needs.

SINGLE-USE CONSUMABLES



Instrument Register



Reflective Positioner



Reflective Attachment



Occlusal Guide Holder



Pattern Resin

Single-use items must not be reprocessed or reused. Follow the current Instructions for Use and the hospital's infection-control protocols.

BUILT FOR OPERATING THEATRE INTEGRATION

System features and manufacturer-reported specifications

RETINA combines optical tracking hardware, planning software, a mobile system configuration and connectivity for the clinical environment.

KEY SYSTEM FEATURES

- Self-developed optical navigation system and software
- 3D optical tracking system with infrared illumination and dual lasers for spatial target localisation
- Touch-enabled interface for system interaction
- Four USB ports for data transfer and peripheral connectivity
- Connectivity for additional displays when required
- Single- or double-body configuration, depending on the selected model
- Windows-based computer supplied with the system
- Instrument registration and patient registration workflow

TECHNICAL SPECIFICATIONS

PC cart size	70 cm (L) x 65 cm (W) x 180 cm (H)
Tracking unit cart size	58 cm (L) x 50 cm (W) x 190 cm (H)
Tracking unit size	73 cm (L) x 22 cm (W) x 10 cm (H)
Monitor	Display resolution 2560 x 1440 (2K)
Power supply	100-240 VAC, 50/60 Hz
Operating temperature	5°C to 40°C
Environmental storage	-10°C to 50°C

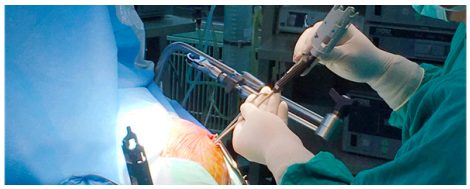
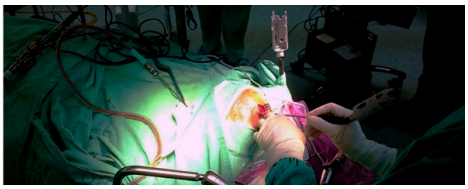
Configuration, accessories, functions and performance should be verified against the current manufacturer documentation and intended clinical use. Specifications are subject to change without notice. Confirm the current configuration and specification sheet before procurement.

THE RETINA TRACKING UNIT

Advanced optical tracking for precise, real-time surgical navigation

Built on years of navigation expertise, the RETINA Tracking Unit features EPED's proprietary 3D optical tracking system for precise, real-time surgical navigation.

Through its strategic partnership with EPED, TransforMed Arrogyam Pvt. Ltd. is authorised to market and sell RETINA in India, with a commitment to making advanced surgical technology more affordable and accessible across the country.

KEY FEATURES

- Segmentation: Colour-code surgical targets and anatomical structures for clear visual planning.
- Guidance Mode: View real-time position, depth and angle against the planned path and target.
- Nerve and vessel delineation: Highlight critical anatomy and monitor its distance from the tracked instrument.
- User-friendly workflow: Register instruments and the patient through a clear, step-by-step process.
- Self-developed optical navigation system: EPED-developed navigation hardware and software, supplied with a Windows-based computer.
- Dual-camera optical tracking: Infrared illumination and dual lasers support precise spatial localisation.
- USB connectivity: Four USB ports support file transfer and peripheral connectivity.
- Touch-enabled interface: Supports direct and intuitive system interaction.
- Flexible configuration: Available in single- or double-body configurations, depending on the selected model.
- Additional display connectivity: Supports connection to additional screens when required.

LET'S DISCUSS YOUR CLINICAL WORKFLOW

Bring precision-led surgical navigation into your operating theatre.

Connect with the TransforMed Arrogyam MedTech team for a product presentation, clinical workflow discussion and commercial information.

TransforMed Arrogyam Pvt. Ltd.
MedTech innovation and clinical adoption partner

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