Radar

Nucleus 3 5000/6000 radar systems

Sophistication, versatility and unrivalled performance

Nucleus 3 is designed to meet the demands of today's maritime industry. Through the use of the very latest in radar technology, Nucleus 3 delivers radar performance in the most challenging operational situations.

Nucleus 3 offers a wide range of highly sophisticated and flexible operating modes, which provide extremely accurate navigational information when and where it's needed.

Nucleus 3 advanced technology ensures greater bridge performance and improved navigational accuracy, increasing both operating efficiency and safety levels – under the harshest operating conditions.

Nucleus 3 5000

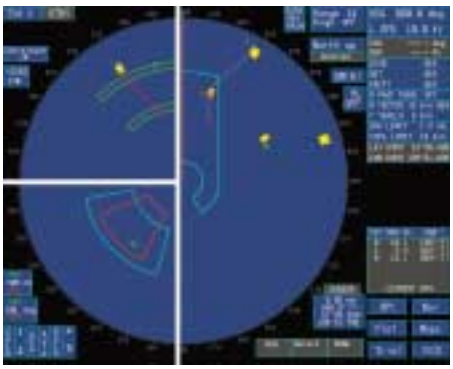
Nucleus 3 6000

Features and Benefits

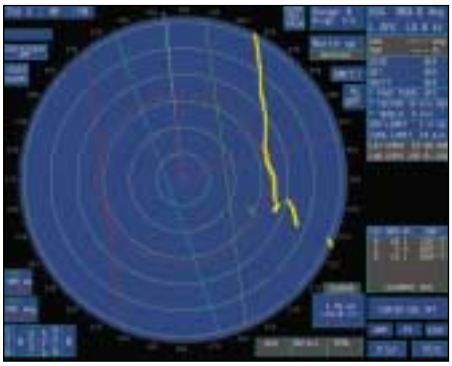
- 6 x 6 Interswitch: More flexible interswitching
- Complies with all ITU Emissions Regulations
- Internal map storage: No need for Navcard
- Map backup to PC: Maps may be stored ashore
- Reduced installation cabling: Reduced installation costs
- CAN Bus transmitter control: Increased system functionality
- 1/8 nm (0.125nm) range scale: Increased short range performance
- Azimuth Stretch facility: Small targets seen more easily
- AIS compatible: Meets future regulations
- VDR Interface: Ready to connect to VDR
- Curved Heading Line: Visual turn monitoring aid
- 50 Target ARPA Tracking
- Footprint Acquisition Zone: Enhanced target acquisition
- Inclusive/Exclusive Acquisition Zones: More flexible, tailored target acquisition
- Tape Measure: Point to point on screen measurement
- Target Tote facility: Indicates the 6 most important targets
- Full 11 Colour Display: Information distinguished more easily
- 2 x EBL: Two bearings measured simultaneously
- 2 x VRM: Two ranges measured simultaneously
- Maps with 16 Coloured Symbols: Permits more sophisticated maps
- 4 x Colour Coded Parallel Index Lines: Easier parallel indexing
- Ergopod Remote Control: Increased operational flexibility

Nucleus 3 radar systems

Plotting



Acquisition modes



Measurements

AIS

Innovative technology

The Nucleus 3 radar is driven by Kelvin Hughes' latest generation computer system. This advanced computer supersedes all other systems in its power, accuracy, versatility and flexibility. Nucleus 3's powerful computer is capable of automatic tracking of up to 50 targets at any one time, an essential feature in busy shipping lanes.

The Nucleus 3 system is ready to connect to VDR and is AIS compatible to meet future regulations. It offers a complete range of features including an Integral Training Simulator, designed to allow navigators joining the vessel an opportunity to familiarise themselves with this highly sophisticated, easy-to-operate system.

The displays are available in a number of configurations that include ARPA, ATA and EPA. These can be connected to various X and S band, up and down mast transceivers, and 24/45rpm antennas.

Nucleus 3 5000 radar is ideally suited for use in high speed craft and commercial shipping up to 10,000 tons. Nucleus 3 6000 is suitable for all vessels.

Easy Viewing Displays

Nucleus 3 features a high-visibility colour screen.

The displays deliver easy-to-view radar pictures and a comprehensive range of selectable functions, warnings and target information.

The monitor, electronics and interfacing are all contained in a single display which can be desk or pedestal mounted.

Plotting

The ARPA allows up to 50 targets (20 in the ATA display) to be plotted on-screen. Target information including bearing, range, course, speed, BCR, BCT, TCPA, CPA and latitude and longitude is displayed. Selected data on up to six targets may be displayed in a Tote window.

Acquisition Modes

Targets can be automatically acquired by three means:

1 Guard zones: Two zones are available, one pre-set in range, the other variable – both are variable in bearing. Targets are acquired as they transit the zone.

2 Footprint Acquisition Zone (FAZ): A fully variable, self-designated area around the vessel that will acquire all targets within the area.

3 Zone Acquisition: Fourteen inclusion or exclusion sectors are available.

AIS Compatible

Up to 50 relevant AIS targets can be selected in menu.

Advanced control

The patented tracker ball and push button control, common to all Kelvin Hughes displays, is utilised on Nucleus 3.

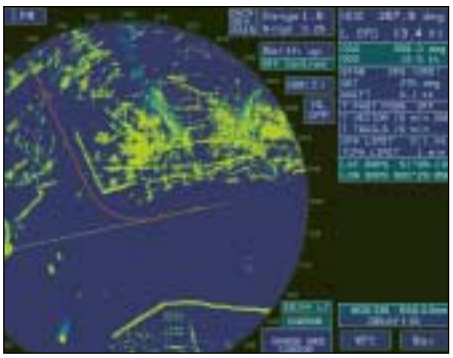
This easy to use control unit makes for fast, accurate and flexible operation, negating the use of complicated keyboard-based systems.

Tracker ball and push button control

Interchangeable Keyboards

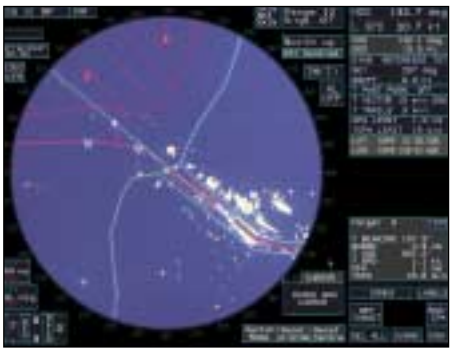
Various front panels can be fitted to the Nucleus 3 5000 display depending upon the bridge layout and operators' requirements.

Nucleus 3 advanced technology – the key to greater bridge performance and improved navigational accuracy, increasing both operating efficiency and safety levels, under the harshest operating conditions



Curved Heading Line

Standby and Installation Screens



Mapping

Split Processor

Measurements

On-screen measurements can be done with 2 EBLs (EBLs and VRMs may be operated independently or together), tape measure (point to point) and cursor.

Curved Heading Line

The Curved Heading Line is designed to predict the ship's future track and is featured as standard on Nucleus 3 displays.

Standby and Installation Screens

Full on-screen installation, setting to work and test procedures reduce the need for internal access.

6 x 6 Interswitching

Allows up to 6 transceivers to be interswitched with up to 6 displays or ECDIS.

Mapping Facilities

The displays are capable of producing on-screen maps. The maps may be constructed from 4 line types and 16 IMO symbols in a wide range of colour variations.

Interfaces

Bi-directional, individually assigned serial interfaces are standard. Nucleus 3 is ready to connect to VDR and is AIS compatible to meet future regulations.

Transmitters and Receivers

A comprehensive range of up and down mast Transmitters and Receivers with CAN Bus transmitter control is available with S and X band antennas.

ERGO Pod

Where applicable left and/or right ERGO pods can be fitted to the arms of the operator's chair. This can take the place of or be used in conjunction with the trackerball fitted to the display. The ERGO pod has additional buttons for direct control of Range and Sea Clutter.

Display Variants

Nucleus 3 comes in 3 display variants – one 5000 desktop, one 6000 desktop c/w Split Processor and one 6000 pedestal mounted, plus 3 RX/TX versions.

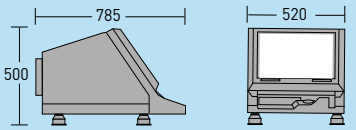
Type Approval

Nucleus 3 features the very latest high-visibility, 11 colour screens, which meet IMO recommendations and MED type approvals. They also comply with all ITU Emissions Regulations.

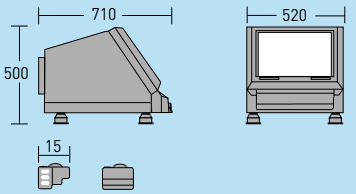
X and S Band Transmitters and Receivers

ERGOPod

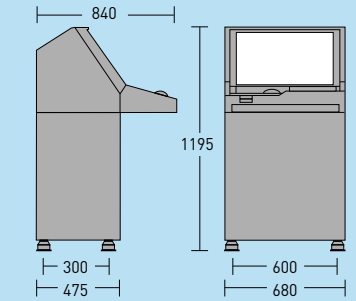
Nucleus 3 radar systems



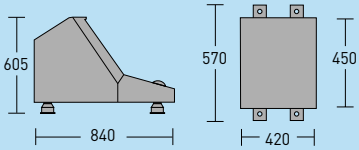
Nucleus 3 5000
Table-mounted with keyboard
38kg



Nucleus 3 5000
Table-mounted with remote control Ergo Pod (not to scale)
Remote control Ergo Pod also optional for Nucleus 3 6000
40kg



Nucleus 3 6000
Pedestal-mounted
107kg



Nucleus 3 6000
Split Configuration
80kg

Antennas
(Dimensions shown are turning circles.)

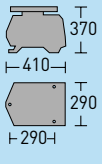
2.0m X Band
14kg

3.1m S Band (High Speed Only)
50kg

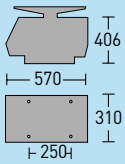
2.5m X Band
20kg

4.0m S Band
65kg

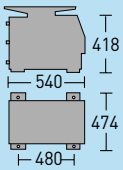
Turning Mechanisms



Mk V X Band
23kg



Mk IV X Band
40kg



Mk VI S Band
100kg

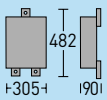
Upmast Transceivers
(Built in)

Mk V X Band
10kW

Mk IV X Band
25kW

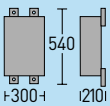
Mk VI S Band
30kW

Power Supply Unit (PSU)



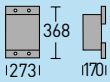
High Speed X Band
7kg

Transmitter Interface Unit (TIU)

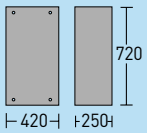


X Band Mk V Turning Mechanism to RIU
7kg

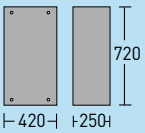
Soft Start Unit
(Standard)



Downmast Transceivers

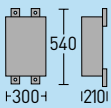


Mk VII X Band 25kW
30kg



Mk VII S Band 30kW
35kg

Radar Interswitch Unit (RIU)



6 Way Unit
5.5kg

KELVIN HUGHES

total marine navigation solutions

UK (Head Office): Kelvin Hughes Limited
New North Road, Hainault, Ilford, Essex IG6 2UR
T: +44 20 8500 1020 F: +44 20 8500 0837

Benelux: Kelvin Hughes (Nederland) bv
Klompenmakerstraat 64, 3194 DE Hoogvliet, Rotterdam, The Netherlands
T: +31 10 416 76 22 F: +31 10 416 72 18

China: Kelvin Hughes Shanghai Representative Office
Unit H, 15/F, Majesty Building, 138 Pu Dong Avenue, Shanghai 200120, PR China
T: +86 21 58772105 F: +86 21 58785944

Far East: Kelvin Hughes (Singapore) Pte Ltd
8 Pandan Avenue, 2nd Floor, Singapore 609384
T: +65 6545 9880 F: +65 6545 8892

Scandinavia: A/S Kelvin Hughes
Marselis Boulevard 175, DK-8000 Århus C, Denmark
T: +45 86 11 28 88 F: +45 86 11 27 26
Midtunheia 22, N-5050 Nesttun, Bergen, Norway
T: +47 55 10 53 05 F: +47 55 10 48 78

www.kelvinhughes.com

smiths
A part of Smiths Marine Systems

Local Agents

KH8001 ISSUE 1