|  |  |
| --- | --- |
|  | **EDDY CURRENT FLAW DETECTOR**  **Name of the equipment:**  Eddy Current Flaw Detector  **Make & Model:**  Olympus Corporation, Tokyo- Japan  NORTEC600  **I-Stem Registration ID-**  **3224878**  **Category of Instrument**  Non-destructive Testing (NDT) Instrument  **Types of Analysis / Testing**  Electromagnetic/Eddy Current Testing  **Application:**  Used to detect surface and near-surface flaws in conductive materials  **Description of Instrument**  An eddy current flaw detector uses electromagnetic induction to identify cracks, corrosion, and other defects in conductive materials without damaging the test object. |

**Booking Details**

|  |  |
| --- | --- |
| **Book through I-STEM:**  <https://www.istem.gov.in/>  **Slot Booking Link**  [I-STEM Slot Booking link for External User](https://www.istem.gov.in/equipment-info/24878/Eddy-Current-Flaw-Detector--ECFD-) | **Booking available for**  Internal and External Both  **Requisition form for**  Internal  External |

**Contact Details**

|  |  |  |
| --- | --- | --- |
| **Faculty In-charge:**  Dr. Murali KP  **Email ID:**  [kpmurali@nitc.ac.in](mailto:kpmurali@nitc.ac.in)  **Phone number:**  0495-2286414 | **Technical Staff:**  Sanal PR (TA SG I)  [sanal@nitc.ac.in](mailto:sanal@nitc.ac.in)  Jithin Krishna M (TA)  [jithinkrishnam@nitc.ac.in](mailto:jithinkrishnam@nitc.ac.in)  Jijeesh k (ST)  [jijeeshk@nitc.ac.in](mailto:jijeeshk@nitc.ac.in) | **Department**  MED  **Office Email ID**  [medoffice@nitc.ac.in](mailto:medoffice@nitc.ac.in)  **Location**  Material Science Lab  Production Block  **Lab Phone No**  0495-2286450 |

**Features, Working Principle and Specifications**

|  |  |
| --- | --- |
| **Eddy Current Flaw Detector** | |
| **Display** | |
| **Display size (W × H, diagonal)** | 117.4 mm × 88.7 mm, 146.3 mm |
| **Display type** | Full VGA (640 × 480 pixels) color, transflective LCD (liquid crystal display). |
| **Screen modes** | Normal or Full screen, 8 color schemes. |
| **Grids and display tools** | Choice of 5 grids; crosshairs (single trace displays only). |
| **Connectivity and memory** | |
| **PC software** | NORTEC PC software, included in base NORTEC 600 kit. NORTEC PC allows viewing saved files and printing reports. |
| **Data storage** | 500 traces of 120 s max featuring user-selectable on-board preview. |
| **Interface** | |
| **Languages** | English, Spanish, French, German, Italian, Japanese, Chinese, Russian, Portuguese, Polish, Dutch, Czech, Hungarian, Swedish, and Norwegian. |
| **Applications** | Application Selection menu for easy and rapid configuration. Automatic lift-off key. |
| **Real-Time Readings** | Choice of up to 2 real-time readings measuring signal characteristics (selection of 5 amplitude measurements and 1 angle measurement). |

|  |
| --- |
|  |

|  |  |
| --- | --- |
| **Probe types** | Absolute and differential in either bridge or reflection configuration. The instrument is fully compatible with NORTEC Powerlink probes, as well as other main probe and accessory suppliers. |
| **Probe connectors** | 16-pin LEMO and BNC featuring internal automatic balancing for BNC connector (absolute probes). |
| **Frequency range** | 10 Hz to 12 MHz |
| **Gain** | 0 dB to 100 dB in 0.1 or 1 dB increments. |
| **Rotation** | 0° to 359.9° in 0.1° or 1° increments. |
| **Sweep** | Variable from 0.005 s to 10 s per division (total of 13.3 divisions with FINE grid). |
| **Filters** | Low-pass: 10 Hz to 2000 Hz and wide band. High-pass: off or 5 Hz to 1000 Hz, user-selectable in constant “figure 6” or “figure 8” filter type. Continuous null (low-frequency HP filter): 0.2 Hz, 0.5 Hz, 1.0 Hz. |
| **Probe drive** | LOW, MEDIUM, and HIGH (2 V, 5 V, 8 V). |
| **Display erase, persistence** | Display erase (0.1 s to 60 s), persistence (0.1 s to 10 s) |
| **Available alarm types** | 3 simultaneous alarms. Choices include BOX (rectangle), POLAR (circle), SECTOR (pie), SWEEP (time-based), CONDUCTIVITY, and COATING THICKNESS. |
| **Conductivity (NORTEC 600C, NORTEC 600S, and NORTEC 600D)** | |
| **Frequency** | 60 kHz or 480 kHz |
| **Digital conductivity specification** | Digital conductivity display from 0.9% to 110% IACS or 0.5 to 64 MS/m. Accuracy within ±0.5% IACS from 0.9% to 65% IACS and within ±1.0% of values over 62%. Meets or exceeds BAC 5651 specifications. |
| **Non-conductive coating thickness** | Can measure non-conductive coating thickness from 0 mm to 0.648 mm. Accuracy of 0.025 mm (±0.001 in.) over a 0 mm to 0.64 mm range. |
| **Scanners (NORTEC 600S and NORTEC 600D)** | |
| **Scanner compatibility** | Operates Olympus scanners (MiniMite, SpitFire, RA-2000, and PS-5) and other major supplier scanners, from 120 RPM to 3000 RPM. |
| **Dual Frequency (NORTEC 600D)** | |
| **Frequency adjustment (dual frequency mode)** | Two fully independent frequencies, operating in simultaneous injection. |
| **MIX options** | F1 - F2, F1 + F2, and automatic true mixing. |

**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions**

|  |
| --- |
| * Type of Samples to be Analysed * Maximum No. of Samples Accepted at a Time- 1 * Minimum No of Days Required for Analysis – 2 Days |

**User Charges Rs. (GST Extra)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 200/- per hour | 400/- per hour + GST | 400/- per hour + GST | 400/- per hour + GST |