

Specification for Portable Metals Analyzer**1. Pre- Qualifying Requirement**

The vendor should have supplied at least 5 steeloscopes in the last 10 yrs. List of parties to whom these steeloscopes were supplied to be given.

2. Purpose

- a. The Portable Metals Analyser (Steeloscope) shall be used for quick qualitative & semi-quantitative analyses of steels to determine the approximate content of major alloying elements e.g. Chromium, Nickel, Tungsten, Niobioum, Vanadium, Titanium, Molybdenum etc. to determine grade of the steel being examined.
- b. The equipment shall consist of a gun and a power supply unit. The equipment shall be portable in nature so that it can be taken to the component to be analyzed. The total weight of the power supply unit & the gun should not be more than 20 Kgs. *Supplier to indicate the actual weight of the gun & power supply (separately)*

3. Specification

- a. In the equipment on pressing of a button, an arc shall be produced between the material to be analyzed and a counter electrode on the equipment which shall normally be a copper disk. The light of the spark shall enter the analysis system of the gun consisting of prisms and lenses/ diffraction grating and be seen as a series of spectral lines in the eyepiece . By rotating a calibrated drum (calibration in wavelength or element) on the eyepiece it shall be possible to determine the presence of a particular element and by comparing the spectral lines with that from a standard sample, determine the approximate amount of a particular element present.

4. Machine Configuration

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| a. Material of Body of gun and Supply Unit: | Aluminium (light weight for easy handling) |
| b. Operating range (Nanometers): | 390-650 |
| c. Focal distance of objective (mm): | 300 min |
| d. Arc Current (Amps): | 6 – 8 |
| e. Spark Current (Amps): | 3 – 4 |
| f. Resolution (Nanometers) | 0.089 min. |
| g. Entrance Slit Width (mm) | 0.01 max |
| h. Magnification of eyepiece: | 10X |
| i. A C Supply for equipment : | 220 V, 50 Hz. |
| j. Consumed Power (VA) | 800 |
| k. Hard carrying case | 1 no. |
| l. Ambient Operating Temperature (^o C) | 45 max. |

Against each of the above requirements the vendor shall give the actual values of the item being offered.

Additionally, the vendor shall also provide the actual dimensions and weight of the gun and the supply unit of the equipment being offered.

5. Accessories

- a. The supplier to list in detail the standard spares being supplied with the equipment
- b. In addition to the Standard Spares the vendor shall also quote for the following:
 - i. Copper disc electrodes: 10 nos.
 - ii. Heat Insulation Glass 10 nos.
 - iii. On/Off Switch 10 nos.
 - iv. On/Off Relay 5 nos.
 - v. Eye piece with calibrated drum 2 nos.
 - vi. Glass fuses for total equipment 20 nos.

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- 6. **Guarantee**
 - a. The equipment shall be guaranteed for satisfactory working for 24 months from the date of commissioning
- 7. **Documentation**
 - a. Along with the instrument the supplier shall give 3 copies of complete operation and maintenance manuals with total circuit diagram.
 - b. Along with the offer the supplier shall provide:
 - i. The total technical details of the item being offered along with photographs of the main equipment and all its accessories.
 - ii. Details of his representatives in India, and, service centers.
 - iii. List of users in India with their detailed addresses where such equipment have been supplied.
- 8. **Pre-Dispatch Inspection**
 - a. Not required
- 9. **Training**
 - a. Not required

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