

**Specification for Portable Metals Analyzer**

**1. Pre-Qualifying Requirement**

- a. The vendor should have supplied at least 25 steeloscopes in the last 10 yrs. List of parties to whom these steeloscopes were supplied to be given.
- b. The offered equipment should be capable of working continuously for one hour in the 120 seconds ON ,and, 120 seconds OFF mode without any problems.. Supplier to confirm.

**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**

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 ( <sup>0</sup> 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.

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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