IS 3118: 1978 Electric Bacteriological Incubators

Bacteriological incubators are laboratory devices used to grow and maintain bacterial cultures under controlled environmental conditions. They are designed to provide a stable and controlled environment for the optimal growth of bacteria for research, diagnostic, and industrial applications.

Depending upon the requirements of user, a particular type of incubator may be selected, considering the conditions to be applied to the bacterial cultures which are under observation or under test.

IS 3118 provides specifications for **electrically-heated incubator** used in laboratories, which is essentially a closed chamber designed and constructed for **cultivation of bacteria** or for **facilitating biological tests**, with or without arrangements for **humidifying the air** or **supply of oxygen**. The scope of the standard covers all incubators designed for thermostatic control at one or more temperatures **above ambient and upto 80°C**. Types of incubators covered in the standard include gravity convection incubator, forced convection incubator, water-jacketed incubator, fixed temperature incubator and wide-range incubator.

In IS 3118, applicable clauses of IS 302 (Part 1) *Household and Similar Electrical Appliances — Safety Part 1 General Requirements* have been referred for construction, **general electrical safety**, testing methodology and marking.

In addition to the general construction as per IS 302 (Part 1), the particular requirements like design of **water-jacket** (if applicable), cabinet ventilation, design and positioning of **heating element** and thermostat contacts have also been included. The routine tests include protection against electrical shock, high voltage test, insulation resistance test, leakage current test and test for earthing connection (as per IS 302). Type tests include test for mechanical strength (as per IS 302), performance test for thermostats, temperature variation test, temperature differential test, temperature drift test, test for reproducibility of temperature setting and temperature overshoot test. The test conditions and schedule of tests have also been specified.

IS 3118 thus ensures conformity for major aspect of incubators, i.e **electrical safety** of the user and **temperature stability** as it directly impacts the accuracy of experimental results, and the efficiency of incubator operation.