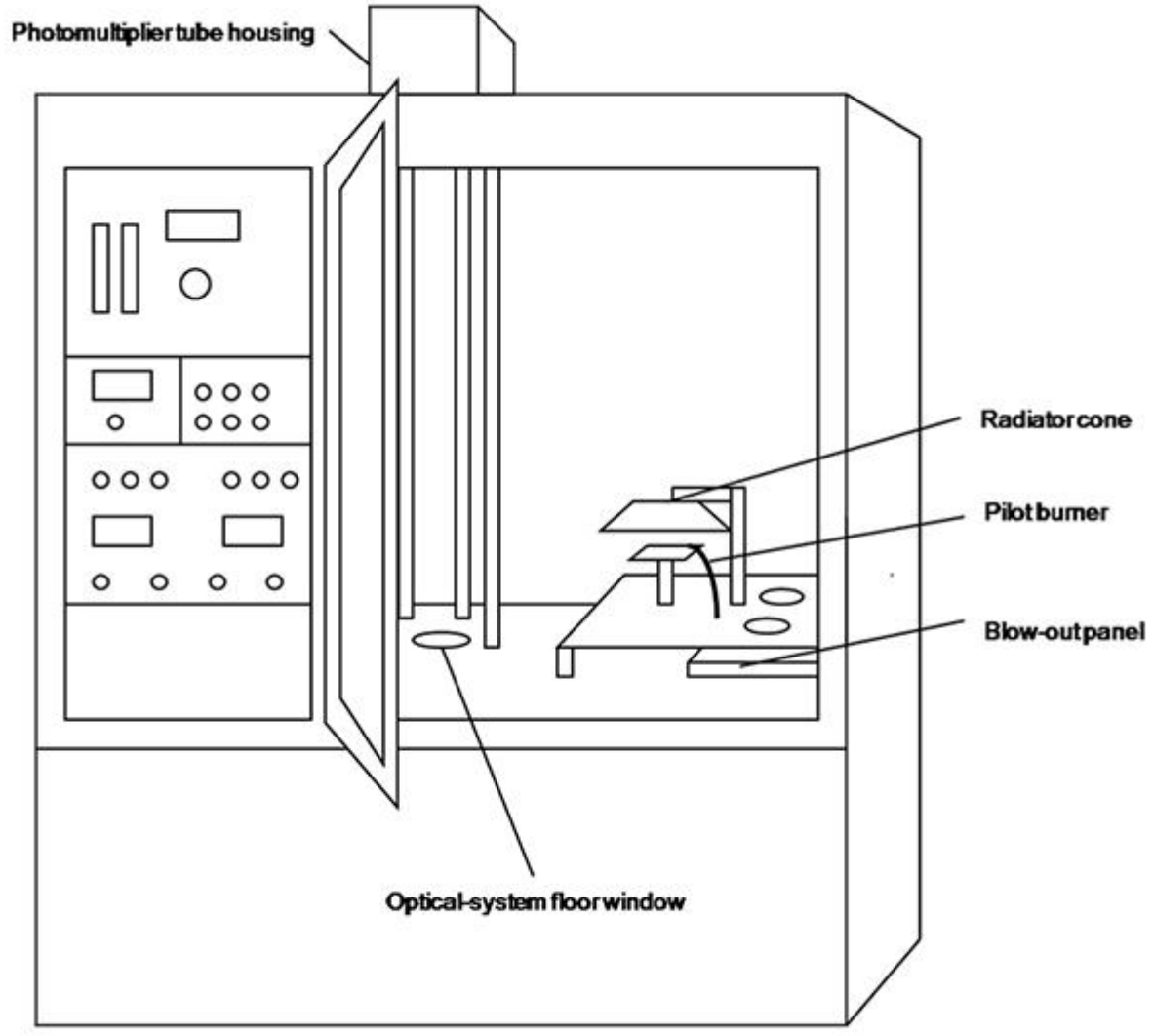
NBS SMOKE CHAMBER

A WIDELY RECOGNISED METHOD FOR MEASURING SMOKE, AND HENCE VISUAL OBSCURATION, ATTEMPTS HAVE BEEN MADE TO USE IT TO GENERATE TOXIC PRODUCT YIELDS BUT THIS HAS PROVED DIFFICULT.

The release of smoke generated by the combustion of plastic materials can be determined by several methods. The most common static test procedure is the National Bureau of Standards (NBS) smoke chamber method, standardized in the United States as ASTM E 662. This test was originally developed to determine the smoke generating characteristics of plastic materials used in aircraft construction. Additionally, the NBS test has also been used to specify smoke generation in materials for train/subway interiors and industrial flooring.



The NBS smoke chamber measures smoke density accumulated when an essentially flat specimen, up to 25 mm thick is exposed to a radiant heat source of 25 kW/m2 in a closed chamber, with or without the use of a pilot flame. Depending on the application, either the maximum smoke density or the smoke density at a set time (usually 4 minutes) can be specified. The test can be run with or without the application of a pilot flame (flaming and smouldering mode, respectively). In addition to smoke, the concentration of toxic gases can also be measured.

UCLan's smoke chamber also incorporates the conical gas burner for heat fluxes of up to 50 kW/m2 and a load cell, as specified in the ISO 5659 and the IMO test standards.

BS 6401 - ASTM E 662 - ASTM F 814 - NFPA 258

ISO 5659/IMO FTPC Part 2 - ATS 1000.001/ABD0031 - NES 711