

## Oil Spectrophotometer

Fats and oils obtain metal contents from soils where the plants are grown and after that from contact equipment during crushing, processing and storage. Many of the metal ions promote auto-oxidation that results in off-flavour and odour accompanied by color development. Studies have identified copper as the most harmful metal followed by Fe, Cu, P and Ni. Concentration of these ions varies from 0.1 to 2.0 ppm.

Uniphos Oil Spectrophotometer which UEPL has developed in collaboration with CSIO, Chandigarh is a microprocessor based non dispersive spectrophotometer tailor made for the analysis of the above mentioned metal elements in the oil. The instrument is light weighted and moderately priced.

The sample oil is treated with other reagents to form colored dye. The absorbance on this colored dye is measured on the instrument. The instrument measures the absorbance of the sample and compares it to the stored calibration data and calculates the metal concentration in ppm and displays it on the digital display of the instrument.

This light weighted, portable and low cost spectrophotometer should prove to be a boon to all small and medium scale industries to monitor their edible oil products to meet the statutory requirement. The analysis is made simple and can be done by an ordinary technician, as all the calculations are done by the microprocessor and results displayed on the instrument. The results can also be transferred to a computer or a laptop with date, time and other identification using RS 232 Serial communication.

## Specification

Measuring Range	
Iron	:0.2-2 ppm +/- 0.05ppm
Nickel	:0.2-2 ppm +/- 0.05 ppm
Copper	:0.2- 2 ppm +/- 0.05ppm
Inorganic Phosphorus	: 0.05-0.7 ppm +/- 0.01 ppm
Response Time	: 20 seconds
Warm-up Time	: 5 minutes
Power Requirements	: 0.864 Watt (Battery, 4.8 V 2000 mAH)
Zeroing	: Auto zero
Physical Dimensions	: 20.0 x 12.5 x 10.0 (cm)

