STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Procedure for Operation & Cleaning of Lux Meter	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

1.0 OBJECTIVE:

To lay down a Procedure for Operation and Cleaning of Lux meter.

2.0 SCOPE:

This SOP is applicable for Operation and Cleaning of Lux meter at ……..

3.0 RESPONSIBILITY:

Officer/Executive QA: shall be responsible measure the Lux level at all locations of the plant using Lux Meter.

4.0 ACCOUNTABILITY:

Head QA: To ensure compliance and implementation of this SOP.

5.0 DEFINITION:

A lux meter is also called a light meter, it is a device which is used to measure the brightness. The lux meter measures the brightness specifically with the intensity by which the brightness appears to the human eye. This measurement method is different from the measurement of actual light energy produced by or reflected from an object or light source. Lux is a unit of measurement of brightness or illuminance. It derived from the candela, the standard unit for the measurement for the power of the light. This meter measures the illumination intensity as it appears to the human eye, and it does not correlate to an objective value of energy radiated or reflected. The visible spectrum has different wavelength and they appear to the human eye with varying sensitivity and the lux meter will measure the light intensity by considering this.

What is the difference between lumens and lux

The lux is the unit of illuminance in the international system of units and it is defined in terms of lumen per meter square. Candela is the standard unit of measurement for the power of light while the candela is the unit of energy, it has an equivalent unit known as the lumen, which measures the light the same as the perception of the human eye. One lumen is equal to the light produced in one direction from a light source rated at one candela. The lux takes it to account the surface area over which the light is spread, which affects how bright it appears.

What is a lux meter used for

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A lux meter is a device that is used to measure brightness, and they measure it according to how a human eye will perceive it or how it appears to a human eye. It is used to measure light levels in the workplace. Low lux levels are a common cause of fatigue and muscle strain.

How does lux meter works

Lux meter register brightness with an integrated photodetector. The photodetector is placed perpendicular to the light source for optimal exposure. Readouts are shown either by an analog instrument or digital LCD. Digital types include basic operator inputs. Digital types of meter can save measurements and they have an adjustable detection range. Photodetectors will be composed of selenium or silicon and it determines the brightness photovoltaically. Then the captured light is converted to electrical current and the lux value is calculated by measuring this current.

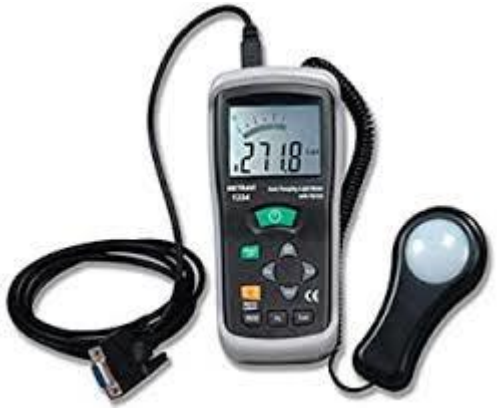
6.0 PROCEDURE:

6.1 Operation:

6.1.1 Before use ensure that Lux Meter is calibrated and calibration tag is affixed on it.

6.1.2 Remove the Protection cap of Lux Meter to see the digital display as shown below:

6.1.3 Basic settings of Lux Meter are:



The displayed parts from 1 to 5 are the following:

1. Protection cap: Park position
2. Light sensor
3. Display
4. Control keys

5. Battery compartment (on rear)

6.1.3.1 To switch off the Instrument press and hold ⏻ until the display goes off.

6.1.3.2 To switch on the instrument press ⏻ measuring mode is opened.

6.1.3.3 Switching the display light on press ⏻ , the display light goes out automatically if no key is pressed for 10 seconds.

6.1.3.4 For Changing the parameter unit press ▲ until the desired unit (lux or ftc) appears.

6.1.3.5 Select display mode with Mode then Readings are Hold, again press Mode to see the Maximum reading, finally press Mode then Minimum reading appear on display

6.1.4 Switch ON the Lux meter by pressing ⏻.

6.1.5 Ensure no low battery indication on display, if found replace the battery refer point no.6.4

6.1.6 Ensure initial reading of Lux Meter shall be “Zero”.

6.1.7 The operating range of Lux Meter to measure Lux level is 0 to 99999 lux.

6.1.8 Hold the light sensor facing towards light source in a horizontal position.

6.1.9 Place the Lux meter sensor on working plane i.e. at the height one meter approximately from the floor level.

6.1.10 The display will show Lux value.

6.1.11 Hold the Lux meter at minimum five locations (Take 5 readings in an area at different location).

6.1.12 The average Lux of all readings will be the Lux level in area.

6.1.13 Switch OFF the Lux meter by pressing ⏻ until the display goes off.

6.1.14 Conduct the Lux monitoring activity in all areas at yearly basis.

6.1.15 During Lux level monitoring, if any reading found less than required reading then do the required maintenance work in respective area for improvement of Lux level.

6.2 Cleaning:

6.2.1 Instrument should be Switch “**OFF**” before cleaning

6.2.2 Clean the all the surface of Instrument with dry lint free cloth. Do not use aggressive cleaning agents or solvents.

6.3 Handling:

6.3.1 Handle the instrument carefully.

6.3.2 Hard blow to the exterior of the instrument may cause damage.

6.3.3 Display which may result in cracking the thin touch screen glass.

6.3.4 Never store the instrument together with solvents, acids or other aggressive substances.

6.4 Maintenance:

6.4.1 For changing the batteries open the battery compartment, push the battery cover down.

6.4.2 Remove used batteries and insert new batteries. Observe the polarity.

6.4.3 To close the battery compartment, push the battery cover back on.

6.5 Acceptance criteria:

6.5.1 Light intensity at the normal working and height should not be less than 300 Lux.

6.6 Calibration:

6.6.1 Lux meter shall be calibrated on yearly basis from outside agency.

7.0 ABBREVIATIONS:

SOP : Standard Operating Procedure
QA : Quality Assurance
Pvt. : Private
Ltd. : Limited

8.0 ANNEXURES:

NA

9.0 DISTRIBUTION:

- Master Copy Quality Assurance Department
- Controlled Copy No. 01 Quality Assurance Department

10.0 REFERENCES:

In-House

11.0 REVISION HISTORY:

Revision No.	Change Control No.	Details of Changes	Reason of Changes	Effective Date	Done By
00	Not Applicable	Not Applicable	New SOP		