**Practical No. 3**

**OBJECT:** How illumination is measured through Lux Mater.

**Operatus**: LUX meter, artificial light (candle), measurement tape, paper and pencil.  **Theory**:

Illumination includes both artificial light source such as lamps and natural illumination of interiors from daylight. Illumination represents a major component of energy consumption. Accounting for a significant part of all energy consumed worldwide. Artificial illumination is provided today by electric lights, but previously by gas lighting candles o roil lumps. Proper lighting can enhance task performance or aesthetics; while there can be energy wastage and adverse health effects of lighting. It is valuable to provide the correct light intensity and color spectrum for each task or environment. Otherwise, energy not only could be wasted but over-illumination can lead to adverse health and psychological effects.

Specification of illumination requirements is the basic concept of deciding how much illumination is required for a given task.

The common Illumination Requirements at different places are given below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Location** | **Range** | **Location** | **Rage** |
| Office   * Conference Reception Room * Clerical work * Typoing Drafting | 200~750 700~1500 1000~2000 | Store   * Indoors, Stairs * Show window. * Forefront show window | 150~200 750~1500  1500~3000 |
| Factory   * Packing work, Entrance passage * Visual work at production line * Inspection work * Electronice parts Assembly | 150~300  300~750  750~1500  1500~3000 | Hospital   * Sickroom * Examination room * Operating Room/Emergency | 100~200  300~750  750 ~ 1500 |
| Hotel   * Public room, Cloak room * Reception, Cashier | 100~200 200~1000 | School   * Class room * Laboratory * Auditorium | 100~300 500~1500 100~300 |

**PROCEDURE:**

Following is the procedure for conducting this practical by putting LUX meter in vertical and horizontal position.

1. First we check the room/lab illumination , i.e 50 lux

2. Mark the starting and ending point from 0 to 12 inches respectively.

3. We place the candle at 12 inches away from the lux meter.

After that we remove the lux meter towards the candle with equal distance of 1 inch and record the reading.

**READING:**

Reading available in the room/lab in vertical = 150   
In horizontal = 175   
Candle height = 4”   
Llame = 2”  
Position of LUX meter Candle Horizontal Vertical 200 300 12250 150 11200 250 10300 300

|  |  |  |
| --- | --- | --- |
| Position of LUX Meter. | | Candle |
| Horizontal | Vertical |
| 200 | 300 | 12 |
| 250 | 150 | 11 |
| 200 | 250 | 10 |
| 300 | 300 | 09 |
| 325 | 250 | 08 |
| 300 | 350 | 07 |
| 350 | 275 | 06 |
| 400 | 450 | 05 |
| 450 | 800 | 04 |
| 550 | 700 | 03 |
| 350 | 1000 | 02 |
| 400 | 1700 | 01 |

**RESULT:**  
 From the above recorded data, we conclude that;   
1. As the source of light goes far, its intensity decreases.

2. Learnt the use of Lux Meter to provide appropriate illumination required at a particular work place.

