Compliance to the Illumination levels: Market Opportunity

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A Proactive and Creative Marketing Professional with 4 decades of experience in Components as well as Lighting Domain. Majority of experience on Industrial Lighting with A Demonstrated Record of Achievements in Conceiving & Implementing Innovative Business Development Ideas to Explore Market, Create Niche Segments & Formulate Product Strategies.

This article is focused on to Industrial/commercial office applications (mainly industrial) where risks of noncompliance is very high.

Compliance to the illumination levels , in today's world it has become more critical than ever before. On one side we have LED technology offering the sophistication , user friendly interface and energy efficient solutions like dimming controls etc. while on the other side for all of us , SCREEN TIME for TV , Mobile etc are increasing. Supply side Competition has increased and as result lot of low quality lamps are also in the market.

Its observed that often the design for illumination is done quite quickly at the initial stage of the project , but unfortunately decision on LED fittings is taken at the end of the when the budgets for the project are almost finished and then project manager is forced to compromise on the lighting installations. (either in cost / quality / qty). One more factor is that unless the LED fittings are installed , no other work related to plant and machinery installation can start. This puts more pressure on the project team to complete the LED installation in hurried manner creating chance for compromise on the installation.

The illumination design is always made meticulously as per desired standards, Lamp locations, control group for switching etc. and is very well planned. However, by the time, project is completed and handed over to the production team, few other issues come up, such as machine layout is revised, workstation locations altered, but the lamp are already installed at designed locations and this does not match with such revisions. Some other structures like Air ducting, cable trays etc.. are added, further effecting the direct illumination at the work area. If the project is taking long time for

completion due to various reasons such as more number of workshops , complicated machinery installation etc., it takes long time to actually hand over the facility to production . By that time, much of the lamp life is already over, Illumination levels are on the border of required standards or sometimes even below the desired standard (partially due to the compromised lighting cost !!)

While a lot of attention is given during the initial design and installation stage, the compliance to the illumination levels often ignored at later stages when the facility actually starts running with full capacity.

This happens due to various reasons such as

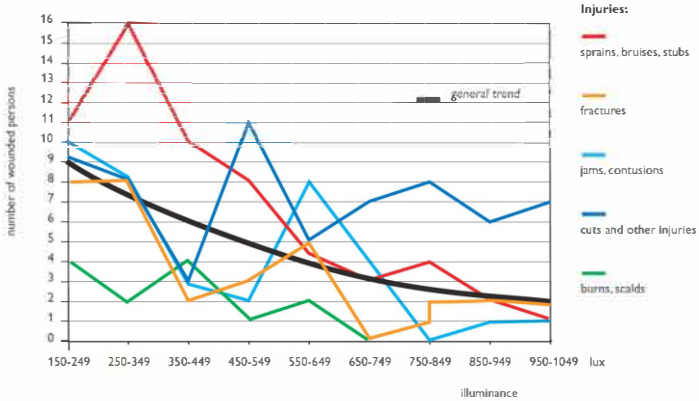
- Production priority: When the plant is running with full capacity , No body wants to stop / hold production for changing – repairing the lights .
- Temporary solution: Due to pressure from operators and (then in turn HR dept) the maintenance manager , put an additional flood light on a nearby location. This can become unsafe and create "possibility of accident". For example, typically such flood light is placed on nearby pillar at low height which is reachable by a normal ladder. This illuminates the work area but GLARE of flood light installed can make the operator / fork lift driver blind for few seconds and its enough to cause accident.
- Maintenance cost: The budgets for maintenance are always on lower side and mainly allocated for plant machinery . Somehow repairing / changing the lights does not get enough budget. Then temporary solutions are implemented !!
- Ignorance of illumination levels : Operating people/workers are ignorant about what is the LUX level they are supposed to work !! Many facilities don't even have a LUX meter to measure the LUX level on regular basis.
- Human EYE: It is the most magical sensing organ in our body. It can work under extreme conditions. Even in full dark or full sun light one is able to see and work. The drop in the LUX levels is not SUDDEN phenomenon. It happens gradually and such gradual drop is NOT sensed by daily operators. It needs someone outsider/auditor to point this out.

Risks of Non Compliance :

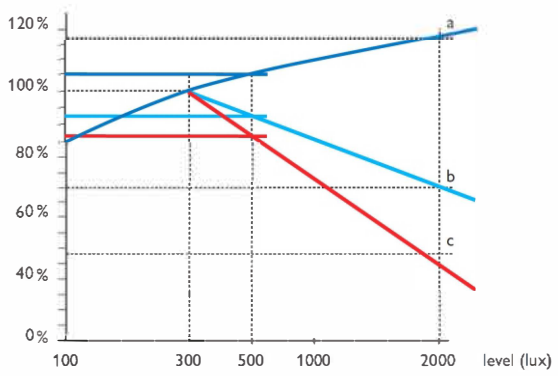
Noncompliance to the illumination level , cost anything from a simple injury, loss of vision (eye site) to human life.

Although LED has become a "symbol" of "Energy efficient Plant", the total electrical load of lighting is much less. (less than 5% in many plants or if I may say even in commercial offices) So even if the lights are kept OFF, the saving is negligible w.r.t. total electrical load. But in spite of this fact , still illumination levels are compromised at the cost of human health and safety.

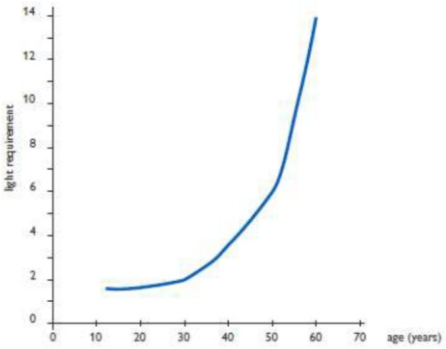
Maintaining the Illumination level is very important. It is directly related to Safety and productivity. Please see following data taken from Philips handbook on Industrial Lighting.



Graph - 1



Graph - 2



Graph - 3

Graph -1: X axis: illumination level Y axis: Number of wounds/accidents
Graph -2: X axis: illumination level Y Axis: Number of Rejects & accidents
Graph -3: X axis: Age of the worker Y axis: Light required to read

Safety audits includes a report on illumination levels buts unfortunately the discrepancies in LUX levels are resolved by some temporary cheap solutions due to the urgency.

In few countries there are financial penalties for not maintaining the LUX levels. But apart from penalties, such plants / offices are running a great risk by playing with the employee's EYE SITE (VISION). By continuously working under poor lighting conditions be it lower lux levels , wrong colour temperature, flickering lights, Over a long period EYE SITE is badly affected. In addition , the AGE factor of the employee also plays important role. More the age , higher is the LUX level required.

In recent days , SCREEN TIME is increased. Mobile screens / TV screens, has occupied much of our life. Our eyes are exposed to much higher stress level like never before. This makes it more critical for the plants / offices to inspect and maintain the LUX levels.

How does this situation can become a MARKETING opportunity ??

Gone are the days when sales communication was based on LED's energy efficiency compared with conventional technologies (CFL, HPSV, MHL lamps). Now, the need is to talk/communicate the importance of LUX level and more importantly the maintenance of these LUX levels.

Lights manufacturing community now has to start spreading the awareness and educating the "end users", the operators / office people about LUX levels and importance of maintaining them up to the desired mark.

There is also great need for re-visiting the LUX LEVEL STANDARDS. The standard made in 70's are still in use. We are going through a period , where human eye is exposed to long hours of screen time, glared lighting , pollution affecting the eyes , the LUX levels at work place certainly needs a revision. Can lighting manufacturing community work together for this noble cause and save EYE SITE of our work force ?

Such collective initiative would increase the awareness about "working in good lighting conditions" can be a pleasant thing. It would make one's life safe and more productive at the work place and of course it would increase the DEMAND !!