



Guidelines for Good Occupational Hygiene Practice in a Workplace - Lighting

It is essential for employees to work and move around safely in a workplace under adequate lighting. Natural lighting is preferable but due to its unreliable nature and many other uncontrollable factors like sky brightness, seasonal variation, distance from windows and limited window area, etc., artificial lighting is often used as a supplement to daylight. Modern indoor work environment relies very heavily on artificial lighting. Artificial lighting so provided should enable employees to see the visual task with ease and improve accuracy for better performance. The appearance, colour and details of the interior can also be enhanced through appropriate lighting.

Lighting Provision

In workplaces, the artificial lighting provided should be such that there is no risk of accident to all employees (too dim), nor should it be damaging to their eyesight such as causing glare (too bright) or visual fatigue. The recommendations of illuminance for general activities are given below.

Recommendations of Illuminance for General Activities

The following table gives examples of optimum levels of lighting for a wide range of activities/areas.

Item	Task position or area	Optimum average illumination in lux	Notes
1. OFFICES			
	General offices	500	
	Computer work stations	500	Local lighting may be required for reading a document.
	Drawing work stations	750	Local lighting is appropriate.
	Other areas, e.g. file storage and reception, telephone operators	300	
2. BANKS			
	Counter, office area	500	
	Public area	300	
3. SHOPS & SUPERMARKETS			
	General	500	Illuminating the vertical surfaces of the display is required.
	Counter	500	

Item	Task position or area	Optimum average illumination in lux	Notes
4. LIBRARIES			
	General	300	
	Counter, book repair, sorting	500	
	Bookshelves	150	Illuminating the vertical faces at the bottom of book stack is required.
	Reading tables	300	Local lighting may be appropriate.
5. SCHOOLS			
	Classrooms, laboratories	500	
	Art rooms, needlework rooms	500	Supplementary local lighting is desirable.
	Music rooms, sports halls	300	
	Workshops	300	Supplementary local lighting is desirable.
6. MANUFACTURING AND PROCESSING AREAS			
	Major control rooms	500	
	Handling of hazardous substances	500	Special luminaires are desirable if corrosive or explosive atmosphere may be present.
	Handling of substances which are not hazardous	200	
	Automatic processes	200	
	Simple assembly, rough bench, machine and inspection work; e.g. heavy machinery assembly	300	
	Medium assembly, bench, machine and inspection work; e.g. vehicle body assembly	500	Local lighting may be appropriate.
	Assembly of precision components, fine bench, machine and inspection work; e.g. insertion of electronic components, inspection of PCBs	1000	Local lighting is desirable. Care is necessary to control specular reflections.

Item	Task position or area	Optimum average illumination in lux	Notes
	Assembly of high precision parts, very fine inspection work; e.g. clothing inspection, watch making	1500	Local lighting is desirable. Care is necessary to control specular reflections.
7. DISTRIBUTION AND STORAGE			
	Loading bays	150	
	Unpacking, sorting	200	
	Large item storage	100	Supplementary local lighting may be necessary if identification requires perception of detail.
	Small item rack storage	300	Supplementary local lighting may be necessary if identification is visually difficult.
	Issue counter, storeman's desks	500	Local lighting may be appropriate.
	Packing and despatch	300	
8. CATERING SERVICES			
	Vegetable preparation, washing up areas, food distribution	300	
	Food preparation and cooking	500	
	Food stores and cellars	150	
9. GENERAL BUILDING AREAS			
	Entrances, lobbies, waiting rooms, gatehouses	200	Care should be taken to avoid a sudden change of illuminance between inside and outside.
	Enquiry desks	500	Localised lighting may be appropriate.
	Corridors, passageways, stairs, lifts	100	
	Boiler rooms, mechanical plant rooms, electrical power supply and distribution rooms	200	
	Covered car parks	50	
	Outdoor car parks	10	

Item	Task position or area	Optimum average illumination in lux	Notes
	Emergency equipment locations	50	
	Emergency lighting	10	Operate automatically when normal power supply fails
10. CONSTRUCTION SITE			
	Site clearance, excavation and soil work	200	Portable local lighting may be needed.

Note: Minimum Levels of Lighting –

- (1) For Item 1-8, the measured average levels of lighting at a task position or in an area should not be less than 1/3 of the optimum average illumination.
- (2) For Item 9-10, the measured average levels of lighting at a task position or in an area should not be less than 1/10 of the optimum average illumination.

Reference:

- (1) Chartered Institution of Building Services Engineers (CIBSE), Code for Interior Lighting, London, 1994.
- (2) Canada Occupational Health and Safety Regulations, Part VI.

Lighting Assessment

Readers, who would like to understand the basic concepts of lighting assessment and the measurement of lighting levels with a luxmeter, please refer to our publication “Lighting Assessment in the Workplace”.

<p><u>Enquiries</u></p> <p>If you wish to enquire about this publication or require advice on occupational health and hygiene issues, please contact Occupational Safety and Health Branch of the Labour Department through:</p> <p>Address: 15/F., Harbour Building, 38 Pier Road, Central, Hong Kong</p> <p>Telephone: 2852 4041</p> <p>Fax: 2581 2049</p> <p>E-mail: enquiry@labour.gov.hk</p>	<p><u>Complaints</u></p> <p>If you have any complaints about unsafe workplaces and practices, please call the Labour Department’s occupational safety and health complaint hotline on 2542 2172. All complaints will be treated in the strictest confidence.</p>
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職業環境衛生指引 - 照明

工作間有充足的照明，僱員們才可以從事各項工作，並保障活動時的安全。天然照明是良好的方法，但是，由於多種因素，例如天空的陰晴變化、季節、窗戶距離和大小不一樣，天然照明的供給並不穩定。人工照明便有需要作為補充天然方法的不足之處。現代的戶內工作地點，普遍十分依賴人工燈光照明。燈光照明，可以幫助僱員從事精細的工作，提高準確程度，改善工作效率。同時，亦會改善室內佈置的觀感，顯出顏色和線條的要點。

照明的供應

在戶內的人工照明設備，應能提供足夠的光線，防止意外和保護視力。然而，太強的光線，亦會損害眼睛，做成眩光或眼睛疲勞現象。在下表，本指引提供了一些照明的標準，以供讀者參考。

照明標準

工作間內，一般活動的照明標準，可以參考下列例子：

項目	活動的位置或範圍	理想的平均照明度 (勒克司)	備註
1. 辦公室			
	一般辦公室	500	
	電腦工作台	500	或需局部照明，以供閱讀文件
	繪圖檯	750	宜提供局部照明
	其他地方，如文件存檔、接待處和接線生	300	
2. 銀行			
	櫃檯、辦公室範圍	500	
	公眾地方	300	
3. 商店及超級市場			
	一般地方	500	須提供光源，照明垂直表面
	收銀處	500	

項目	活動的位置或範圍	理想的平均照明度 (勒克司)	備註
4. 圖書館			
	一般地方	300	
	櫃檯、書籍修補及分類	500	
	書架	150	須提供光源，照明書架下方的垂直表面
	書檯	300	或需局部照明
5. 學校			
	課室、實驗室	500	
	美術室、家政室	500	宜提供輔助局部照明
	音樂室、室內運動場	300	
	工場	300	宜提供輔助局部照明
6. 生產及製造工場			
	主要控制室	500	
	處理危險物品	500	若空氣可能含有腐蝕性或爆炸性氣體，宜選用特殊照明設備
	處理非危險物品	200	
	自動工序	200	
	簡單的裝配工作，粗略的檯面、機械及檢查工作，例如重機械裝配	300	
	中度的裝配、檯面、機械及檢查工作，例如汽車車身裝配	500	或需局部照明
	裝配精細配件，精細的檯面、機械及檢查工作，例如電子零件裝配、線路版檢查	1000	宜提供局部照明，須小心控制強光反射
	裝配極精細配件，極精細的檢查工作，例如衣服檢查、手錶製造	1500	宜提供局部照明，須小心控制強光反射
7. 分發及儲存			
	貨物裝卸區	150	
	拆貨、分類	200	
	儲存大件物品	100	若須閱讀細微部份，以識別物品，則需提供輔助局部照明
	儲存細件物品於架上	300	若識別困難，宜提供輔助局部照明
	分發櫃檯、管貨員桌面	500	或需局部照明
	包裝及發送	300	
8. 飲食服務			
	蔬菜清洗、預備及食物分配	300	
	食物預備及烹煮	500	

項目	活動的位置或範圍	理想的平均照明度 (勒克司)	備註
	食物儲存室	150	
9. 一般樓宇範圍			
	入口、大堂、等候室、門房	200	小心避免戶外和戶內有突然的照明度改變
	詢問處	500	或需局部照明
	走廊、通道、樓梯、電梯	100	
	鍋爐房、機器房、電力房	200	
	戶內停車場	50	
	戶外停車場	10	
	緊急設備位置	50	
	緊急照明	10	正常電力供應停止時，自動操作
10. 建築工地			
	清理工地、挖地	200	或需手提局部照明

備註：最低照明度-

- (1) 項目 1 至 8 的活動位置或範圍內的平均照明度不應低於理想平均照明度的三份之一。
- (2) 項目 9 及 10 列出的活動位置或範圍內的平均照明度不應低於理想平均照明度的十份之一。

參考資料：

- (1) Chartered Institution of Building Services Engineers (CIBSE), Code for Interior Lighting, London, 1994.
- (2) Canada Occupational Health and Safety Regulations, Part VI.

照明評估

如讀者想認識照明評估及使用測光錶量度照明水平的基本概念，請參閱本處印製的《工作間的照明評估》。

查詢

如你對本指引有任何疑問或想查詢職業健康及衛生事宜，請與勞工處職業安全及健康部聯絡：

地址：香港中環統一碼頭道 38 號海港政府大樓 15 樓

電話：2852 4041

傳真：2581 2049

電子郵件：enquiry@labour.gov.hk

投訴

如有任何關於不安全工作環境及工序的投訴，請致電勞工處職安健投訴熱線 2542 2172。所有投訴均會絕對保密。