Recommended Illuminance Levels

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
1 AGRICULTURE AND HORICULTURE			
1.1 Inspection of farm products where Colour is important	300-500-750	1	Local lighting may be appropriate
Other important tasks	200-300-500	2	Local lighting may be appropriate
1.2 Farm workshops			
1.2.1 General	50-100-150	3	
1.2.2 Workbench or machine	200-300-500	2	Local or portable lighting may be appropriate
1.3 Milk premises	50-100-150	3	
1.4 Sick Animal Pets, Calf Nurseries	30-50-100	3	
1.5 Other Firm and Horticulture Building	20-30-50	3	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
2. COAL MINING (SURFACE BUILDING)			
2.1 Coal preparation plant			
2.1.1 Walkways, Floors, under converters	30-50-100	3	
2.1.2 Wagon loading, bunkers	30-50-100	3	
2.1.3 Elevators ,Chute transfer pits, washbox area	50-100-150	3	
2.1.4 Drum filters, screen, rotating shafts	100-150-200	3	
2.1.5 Picking belts	150-200-300	3	Directional & colour properties of lighting may be important for easy recognition of coal & rock
2.2 Lamp Rooms			
2.2.1 Repair section	200-300-500	2	
2.2.2 Other areas	100-150-200	3	
2.3 Weight cabins, fan houses	100-150-200	3	
2.4 Winding houses	100-150-200	3	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
3. ELECTRICITY GENERATION TRANSMISSION AND DISTRIBUTION			

3.1 General plant			
3.1.1 Turbine houses (operating floor)	150-200-300	2	
3.1.2 Boiler and turbine house basements	50-100-150	3	
3.1.3 Boiler house, platforms, areas around Burners	50-100-150	3	
3.1.4 Switch rooms, meter rooms, oil plant Rooms, HV substations (indoor)	100-150-200	2	
3.1.5 Control room	200-300-500	1	Localized lighting of control display & the control desks may be appropriate
3.1.6 Relay and telecommunication rooms	200-300-500	2	
3.1.7 Diesel generator & compressor rooms	100-150-200	3	
3.1.8 Pump houses, water treatment plant Houses	100-150-200	3	
3.1.9 Battery rooms, charges, rectifiers	50-100-150	3	
3.1.10 Precipitator chambers, platforms, etc	50-100-150	3	
3.1.11 Cable tunnels & basements, Circulating Water culverts & screen chamber	30-50-100	3	
3.2 Coal Plant			
3.2.1 Conveyors, gantries, junction towers, Unloading hoppers, ash handling plants, Setting pits, dust hoppers	50-100-150	3	
3.2.2 Other areas where operators may be Attendance	100-150-200	3	
3.3 Nuclear Plants			
Gas circulation bays, reactor area, boiler Platform, reactor charges and discharge face	100-150-200	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
4. METAL MANUFACTURE			
4.1 Iron Making			
4.1.1 Sinter Plant			
Plant floor	150-200-300	3	
Mixer drum, fan house, screen Houses, coolers, transfer stations	100-150-200	3	
4.1.2 Furnaces, cupola			
General	100-150-200	3	
Control Platforms	200-300-500	2	Local lighting may be appropriate
Conveyor galleries, walkways	30-50-100	3	
4.2 Steel Making			
4.2.1 Electric Melting Shops	150-200-300	3	
4.2.2 Basic Oxygen Steel Making Plants			
4.2.2.1 General	100-150-200	3	
4.2.2.2 Converter Floor, teeming bay	150-200-300	3	
4.2.2.3 Control Platforms	200-300-500	2	Local lighting may be appropriate
4.2.2.4 Scrap bays	100-150-200	3	

4.3 Metal forming and treatment			
4.3.1 Ingot stripping, soaking pits, annealing and heat treatment bays, acid recovery plant. Pickling and cleaning bays, roughing mills, cold mills, finishing mills, tinning and galvanizing lines, cut up and rewind line	150-200-300	3	
4.3.2 General	100-150-200	3	
4.3.3 Control Platforms	200-300-500	2	Local lighting may be appropriate
4.3.4 Wire mills, product finishing, steel Inspection and treatment	200-300-500	3	
4.3.5 Plate/strip inspection	300-500-500	2	
4.3.6 Inspection of tin plate, stainless steel, etc		--	Special lighting to reveal faults in the specular surface of the material will be required
4.4 Foundries			
4.4.1 Automatic plant			
4.4.1.1 Without manual operation	30-50-100	3	
4.4.1.2 With occasional manual operation	100-150-200	3	
4.4.1.3 With continuous manual operation	150-200-300	3	
4.4.1.4 Control room	200-300-500	1	Localized lighting of control display & the control desks may be appropriate
4.4.1.5 Control Platforms	200-300-500	2	
4.4.2 Non-automatic Plants			
4.4.2.1 Charging Floor, Pouring, Shaking Out, Cleaning, Grinding Felting	200-300-500	3	
4.4.2.2 Rough moulding, rough core making	200-300-500	3	
4.4.2.3 Fine moulding, fine core making	300-500-750	2	
4.4.2.4 Inspection	300-500-750	2	
4.5 Forges (severe vibration is likely to occur)			
4.5.1 General	200-300-500	2	
4.5.2 Inspection	300-500-750	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
5.CERAMICS			
5.1 Concrete Products			
Mixing, Casting, Cleaning	150-200-300	3	
5.2 Potteries			
5.2.1 Grinding, moulding, pressing, cleaning, Trimming, glazing, firing	200-300-500	3	
5.2.2 Enameling, colouring	500-750-1000	1	
5.3 Glass Works			
5.3.1 Furnace rooms, bending, annealing	100-150-200	3	
5.3.2 Mixing rooms, forming, cutting, grinding, Polishing, toughening	200-300-500	3	
5.3.3 Beveling, decorative cutting, etching, Silvering	300-500-750	2	

5.3.4 Inspection	300-500-750	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
6. CHEMICALS			
6.1 Petroleum, chemical and petrochemical Works			
6.1.1 Exterior walkways, Platforms, stairs & Ladders	30-50-100	3	
6.1.2 Exterior pump and valve areas	50-100-150	3	
6.1.3 Pump and compressor houses	100-150-200	3	
6.1.4 Process plant with remote control	30-50-100	3	
6.1.5 Process plant requiring occasional Manual interventions	50-100-150	3	
6.1.6 Permanently occupied work stations in Process plant	150-200-300	3	
6.1.7 Control rooms for process plant	200-300-500	1	
6.2 Pharmaceutical Manufacturer and Fine Chemicals Manufacturer			
6.2.1 Pharmaceutical Manufacturer Grinding, granulating, mixing, drying, Tableting, sterilizing, washing, Preparation of solutions, filling capping, Wrapping, hardening	300-500-750	2	
6.2.2 Fine chemical manufacture			
6.2.2.1 Exterior walkways, platform, stairs and ladders	30-50-100	3	
6.2.2.2 Process plant	50-100-150	3	
6.2.2.3 Fine chemical finishing	300-500-750	2	
6.2.2.4 Inspection	300-500-750	1	Local lighting may be appropriate
6.3 Soap Manufacture			
6.3.1 General Area	200-300-500	2	
6.3.2 Automatic Processes	100-200-300	2	
6.3.3 Control panels	200-300-500	1	Local lighting may be appropriate
6.3.4 Machines	200-300-500	2	
6.4 Paint Works			
6.4.1 General	200-300-500	2	
6.4.2 Automatic Processes	150-200-300	2	
6.4.3 Control Panels	200-300-500	2	
6.4.4 Special Batch mixing	500-750-1000	2	
6.4.5 Colour Matching	750-1000-1500	1	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
7. **MECHANICAL ENGINEERING**			
7.1 Structural steel Fabrication			
7.1.1 General	200-300-500	3	

7.1.2 Marking off	300-500-750	3	Local lighting may be appropriate
7.2 Sheet Metal Works			
7.2.1 Pressing, punching, shearing, stamping, spinning, folding	300-500-750	2	
7.2.2 Bench work, scribing, inspection	500-750-1000	2	
7.3 Machine and tool shops			
7.3.1 Rough bench and machine work	200-300-500	3	
7.3.2 Medium bench and machine work	300-500-750	2	
7.3.3 Fine bench and machine work	500-750-1000	2	
7.3.4 Gauge rooms	750-1000-1500	1	Optical aids may be required
7.4 Die Sinking Shops			
7.4.1 General	300-500-750	2	
7.4.2 Fine Works	1000-1500-2000	1	Flexible local lighting is desirable
7.5 Welding and soldering shops			
7.5.1Gas and arc welding, rough spot welding	200-300-500	3	
7.5.2Medium soldering, brazing, spot welding	300-500-750	3	
7.5.3 Fine soldering , fine spot welding	750-1000-1500	2	Local lighting may be appropriate
7.6 Assembly Shops			
7.6.1 Rough work for example, frame and heavy machine assembly	200-300-500	3	The lighting of vertical surface may be important
7.6.2 Medium work, for example , office Machinery assembly	300-500-750	2	
7.6.3 Fine work, for example, office machinery assembly	500-750-1000	1	Local lighting may be appropriate
7.6.4 Very fine work, for example, instrument assembly	750-1000-1500	1	Local or localized lighting may be appropriate
7.6.5 Minute work for example, watch making	1000-1500-2000	1	Local lighting and optical aids are desirable
7.7 Inspection and Testing Shops			
7.7.1 Coarse Work, for example, using go/on go gauge, inspection of large sub-assembly	300-500-750	2	Local or localized lighting may be appropriate
7.7.2 Medium work for example, inspection of painted surfaces	500-750-1000	1	Local or localized lighting may be appropriate
7.7.3 Fine work, for example, using calibrated scales, inspection of precision mechanism	750-1000-1500	1	Local or localized lighting may be appropriate
7.7.4 Very fine work, for example, inspection of small intricate parts	1000-1500-2000	1	Local lighting and optical aids are
7.7.5 Minute work, for example, inspection of very small instruments	2000	1	Local lighting and optical aids are desirable
7.8 Points Shops and Spray Booths			
7.8.1 Dipping, rough spraying	200-300-500	3	
7.8.2 Preparation, ordinary painting, spraying & finishing	200-500-750	2	
7.8.3 Fine painting,. Spraying and finishing	500-750-1000	2	
7.8.4 Inspection, retouching and matching	750-1000-1500	2	

7.9 Plating shops			
7.9.1 Vats and baths	200-300-500	3	
7.9.2 Buffing, polishing burnishing	300-500-750	2	
7.9.3 Final buffing and polishing	500-750-1000	2	
7.9.4 Inspection	--	--	Special light to reveal fault in the surface of the material be required

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
8 ELECTRICAL AND ELECTRONIC ENGG.			
8.1 Electrical Equipment manufacture			
8.1.1 Manufacture of cables & insulated wires, winding, varnishing & immersion of coils, assembly of large machines, simple assembly work	200-300-500	3	
8.1.2 Medium assembly , for example Telephones, small motors	300-500-750	3	Local lighting may be appropriate
8.1.3 Assembly of precision components, for eg., telecommunication equipment , adjustment, inspection and calibration	750-1000-1500	1	Local lighting may be appropriate. Optical aids may be used
8.1.4 Assembly of high precision parts	1000-1500-2000	1	Local lighting may be appropriate. Optical aids may be used
8.2 Electronic Equipment Manufacture			
8.2.1Printed Circuit Board			
8.2.1.1 Silk Screening	300-500-750	1	Local lighting may be appropriate
8.2.1.2 Hand insertion of components, soldering	500-750-1000	1	Local lighting may be appropriate
8.2.1.3 Inspection	750-1000-1500	1	A large, low luminance luminaire overhead ensures specular reflection conditions which are helpful for inspection of printed circuit
8.2.1.4 Assembly of wiring harness, clearing Harness , testing and calibration	500-750-1000	1	Local lighting may be appropriate
8.2.1.5 Chassis assembly	750-1000-1500	1	Local lighting may be appropriate
8.2.2 Inspection and testing			
8.2.2.1 Soak test	150-200-300	2	
8.2.2.2 Safety and functional tests	200-300-500	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
9 **FOOD, DRINKS AND TOBACCO**			

9.1 Slaughter houses			
9.1.1 General	200-300-500	3	
9.1.2 Inspection	300-500-750	2	
9.2 Canning, Preserving and Freezing			
9.2.1 Grading and sorting of raw materials	500-750-1000	2	Lamps of colour ren-dering ground 1A or 1B will be req, if col- our judgement is req.
9.2.2 Preparation	300-500-750	3	
9.2.3 Canned and bottled goods			
9.2.3.1 Retorts	200-300-500	3	
9.2.3.2 Automatic processes	150-200-300	3	
9.2.3.3 Labeling and packaging	200-300-500	3	
9.2.4 Frozen labeling			
9.2.4.1 Process area	200-300-500	3	
9.2.4.2 Packaging and storage	200-300-500	3	
9.3 Bottling, Brewing & Distilling			
9.3.1 Keg washing and handling, bottle Washing	150-200-300	3	
9.3.2 Keg inspection	200-300-500	3	
9.3.3 Bottle inspection	--	--	Special lighting will be required
9.3.4 Process area	200-300-500	3	
9.3.5 Bottle filling	500-750-1000	3	
9.4 Edible oils and Fats Processing			
9.4.1 Refining and Blending	200-300-500	3	
9.4.2 Production	300-500-750	2	
9.5 Mills-milling, Filtering and Packing	200-300-500	3	
9.6 Bakeries			
9.6.1 General	200-300-500	2	
9.6.2 Hand decorating, icing	300-500-750	2	
9.7 Chocolate and Confectionery Manufacturer			
9.7.1 General	200-300-500	3	
9.7.2 Automatic processes	150-200-300	3	
9.7.3 Hand decoration, inspection, wrapping and packing	300-500-750	2	If accurate colour judgments are req, lamps of colour rendering group of 1A or 1B are used
9.8 Tobacco Processing			
9.8.1 Material preparation, making and packing	300-500-750	2	
9.8.2 Hand processes	500-750-1000	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
10 **TEXTILES**			
10.1 Fibre preparation			
10.1.1 Bale breaking, washing	200-300-500	3	
10.1.2 Stock dyeing, tinting	200-300-500	3	
10.2 Yarn manufacture			
10.2.1 Spinning, roving, winding, etc	300-500-750	2	

10.2.2 Heading (drawing in)	750-1000-750	2	
10.3 Fabric Production			
10.3.1 Knitting	300-500-750	2	
10.3.2 Weaving			
10.3.2.1 Jute and hemp	200-300-750	2	
10.3.2.2 Heavy woolens	300-500-750	1	
10.3.2.3 Medium worsteds, fine woolens, cottons	500-500-750	1	
10.3.2.4Fine worsteds, fine linens, synthetics	750-1000-750	1	
10.3.2.5 Mending	1000-1500-2000	1	
10.3.2.6 Inspection	1000-1500-2000	1	
10.4 Fabric Finishing			
10.4.1 Dyeing	200-300-500	3	
10.4.2 Calendering, Chemical treatment, etc.	300-500-750	2	
10.4.3 Inspection			
10.4.3.1 Grey cloth	750-1000-1500	1	
10.4.3.2 Final	1000-1500-2000	1	
10.5 Carpet Manufacturer			
10.5.1 Winding, beaming	200-300-500	3	
10.5.2 Setting pattern, tufting cropping, Trimming. Fringing, latexing and latex Drying	300-500-750	2	
10.5.3 Designing, weaving, mending	500-750-1000	2	
10.5.4 Inspection			
10.5.4.1 General	750-1000-1500	1	Local lighting may be appropriate
10.5.4.2 Piece dyeing		1	Local lighting may be appropriate

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
11 LEATHER INDUSTRY			
11.1 Leather Manufacture			
11.1.1 Cleaning, tanning and stretching, vats, cutting, fleshing, stuffing	200-300-500	3	
11.1.2 Finishing, scarfing	300-500-750	2	
11.2 Leather Working			
11.2.1 General	200-300-500	3	
11.2.2 Pressing, glazing	300-500-750	2	
11.2.3 Cutting, splitting, scarfing, sewing	500-750-1000	2	Directional lighting may be useful
11.2.4 Grading, matching		2	Local lighting may be appropriate

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
12 CLOTHING AND FOOTWEAR			
12.1 Clothing Manufacture			
12.1.1 Preparation of cloth	200-300-500	2	

12.1.2 Cutting	500-750-1000	1	
12.1.3 Matching	500-750-1000	1	
12.1.4 Sewing	750-1000-1500	1	
12.1.5 Pressing	300-500-750	2	
12.1.6 Inspection	1000-1500-2000	1	Local lighting may be appropriate
12.1.7 Hand tailoring	1000-1500-2000	1	Local lighting may be appropriate
12.2 Hosiery and Knitwear Manufacture			
12.2.1 Flat bed knitting machines	300-500-750	2	
12.2.2 Circular knitting machines	500-750-1000	2	
12.2.3 Lock stitch and over locking machine	750-1000-1500	1	
12.2.4 Linking or running on	750-1000-1500	1	
12.2.5 Mending, hand finishing	1000-1500-3000	--	Local lighting may be appropriate
12.2.6 Inspection	1000-1500-2000	2	Local lighting may be appropriate
12.3 Glove Manufacture			
12.3.1 Sorting & grading	500-750-1000	1	
12.3.2 Pressing, knitting, cutting	300-500-750	2	
12.3.3 Sewing	500-750-1000	2	
12.3.4 Inspection	1000-1500-2000	--	Local lighting may be appropriate
12.4 Hat Manufacture			
12.4.1 Stiffening, braiding, refining, forming, Sizing, pounding, ironing	200-300-500	2	
12.4.2 Cleaning, flanging, finishing	300-500-750	2	
12.4.3 Sewing	500-750-1000	2	
12.4.4 Inspection	1000-1500-2000	--	Local lighting may be appropriate
12.5 Boot and Shoe Manufacture			
12.5.1 Leather and Synthetics			
12.5.2 Sorting and Grading	750-1000-1500	1	
12.5.3 Clicking, closing	750-1000-1500	2	Local or localized lighting may be appropriate
12.5.4 Preparatory Operations	750-1000-1500	2	Local or localized lighting may be appropriate
12.5.5 Cutting tables and pressure	1000-1500-2000	1	Local or localized lighting may be appropriate
12.5.6 Bottom stock preparation, lasting, Bottoming finishing, show rooms	750-1000-1500	1	Local or localized lighting may be appropriate
12.5.7 Rubber			
12.5.7.1 Washing, compounding, coating, drying Varnishing, vulcanizing	200-300-500	3	
12.5.7.2 Lining, making and finishing	300-500-750	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks

13 TIMBER AND FURNITURE

13.1 Sawmills			
13.1.1 General	150-200-300	3	
13.1.2 Head saw	300-500-750	2	Local lighting may be appropriate
13.1.3 Grading	500-750-1000	2	
13.2 Woodwork Shops			
13.2.1 Rough sawing, bench work	200-300-500	3	
13.2.2 Sizing, planning, sanding, medium Machining and bench work	300-500-750	2	
13.2.3 Fine bench & machine work, fine sanding, finishing	500-750-1000	2	localized lighting may be appropriate
13.3 Furniture manufacture			
13.3.1 Raw material stores	50-100-150	3	
13.3.2 Finished goods stores	100-150-200	3	
13.3.3 Wood matching and assembly, rough sawing, cutting	200-300-500	2	localized lighting may be appropriate
13.3.4 Machining, sanding and assembly, polishing	300-500-750	2	
13.3.5 Tool rooms	300-500-750	2	
13.3.6 Spray booths			
13.3.6.1 Colour finishing	300-500-750	2	
13.3.6.2 Clear finishing	200-300-500	2	
13.3.7 Cabinet making			
13.3.7.1 Vaneer sorting and grading	750-1000-1500	1	
13.3.7.2 Marquetry, pressing, patching and fitting	300-500-750	2	
13.3.7.3 Final inspection	500-750-1000	1	Special lighting will be required
13.4 Upholstery Manufacture			
13.4.1 Cloth inspection	1000-1500-2000	1	Special lighting will be required
13.4.2 Filling, covering	300-500-750	2	
13.4.3 Slipping, cutting, sewing	500-750-1000	2	
13.4.4 Mattress making			
13.4.5 Assembly	300-500-750	2	
13.4.6 Tape edging	750-1000-1500	2	Local lighting may be appropriate

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
14 **PAPER AND PRINTING**			
14.1 Paper Mills			
14.1.1 Pulp mills, preparation plants	200-300-500	3	
14.1.2 Paper and board making			
14.1.2.1 General	200-300-500	3	
14.1.2.2 Automatic process	150-200-300	3	Supplementary lighting may be necessary for maintenance work
14.1.2.3 Inspection, sorting	300-500-750	1	
14.1.3 Paper converting process			
14.1.3.1 General	200-300-500	3	

14.1.3.2 Associated printed	300-500-750	2	
14.2 Printed works			
14.2.1 Type foundries			
14.2.1.1 Matrix making, dressing type, hand and machine coating	200-300-500	3	
14.2.1.2 Front assembly, sorting	500-750-1000	2	
14.2.2 Composing room			
14.2.2.1Hand composing, imposition and Distribution	500-750-1000	1	
14.2.2.2 Hot metal keyboard	500-750-1000	2	
14.2.2.3 Hot metal casting	200-300-500		
14.2.2.4 Photo composing keyboard or setters	300-500-750	1	
14.2.2.5 Paste up	500-750-1000	1	
14.2.2.6 Illuminated tables- general lighting	200-300-500	--	Dimming may be required
14.2.2.7 Proof precess	300-500-750	2	
14.2.2.8 Proof reading	500-750-1000	1	
14.2.3 Graphic reproduction			
14.2.3.1 General	300-500-750	2	
14.2.3.2 Precision proofing, retouching, etching	750-1000-1500	1	Local lighting may be appropriate
14.2.3.3 Colour reproduction and inspection	750-1000-1500	1	
14.2.4 Printing Machine Room			
14.2.4.1 Presses	300-500-750	2	
14.2.4.2 Pre-make ready	300-500-750	2	
14.2.4.3 Printed sheet inspection	750-1000-1500	1	
14.2.5 Binding			
14.2.5.1 Folding, pasting, punching and stitching	300-500-750	2	
14.2.5.2 Cutting, assembling, embossing	500-750-1000	2	`

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
15 PLASTIC AND RUBBER			
15.1 Plastic Product			
15.1.1 Automatic plant			
15.1.1.1 Without manual control	30-50-100	3	
15.1.1.2 With occasional manual control	50-100-150	3	
15.1.1.3 With continuous manual control	200-300-500	3	
15.1.1.4 Control rooms	200-300-500	1	
15.1.1.5 Control platforms	200-300-500	2	Local lighting may be appropriate
15.1.2 Non-automatic plant			
15.1.2.1 Mixing, Calendering, extrusion, injection, Compression and blow moulding, sheet fabrication	200-300-500	3	
15.1.2.2 Trimming, cutting, polishing	300-500-750	2	
15.1.2.3 Printing, inspection	750-1000-1500	1	
15.2 Rubber products			
15.2.1 Stock preparation- plastisizing, milling	150-200-300	3	

15.2.2 Calendering, fabric preparation, stock-Cutting	300-500-750	3	
15.2.3 Extruding, moulding	300-500-750	2	
15.2.4 Inspection	750-1000-1500	--	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
16 DISTRIBUITION AND STORAGE			
16.1 Work stores	100-150-200	3	Avoid glare to drivers of vehicles approaching the loading bay
16.1.1 Unpacking, sorting	150-200-300	3	Avoid glare to drivers of vehicles approaching the loading bay
16.1.2 Large item storage	50-100-150	3	Avoid glare to drivers of vehicles approaching the loading bay
16.1.3 Small item rack storage	200-300-500	3	Avoid glare to drivers of vehicles approaching the loading bay
16.1.4 Issue counter, records, storemans desk	300-500-750	2	Local or localized lighting may be appropriate
16.2 Warehouses and bulk stores			
16.2.1 Storage of goods where identification requires only limited preparation of details	50-100-150	3	
16.2.2 Storage of goods where identification Requires perception of detail	100-150-200	3	
16.2.3 Automatic high bay rack stores			
16.2.3.1 Gangway	20	--	
16.2.3.2 Control station	150-200-300	3	
16.2.3.3 Packing and dispatch	200-300-500	3	
16.2.3.4 Loading bays	100-150-200	3	Avoid glare to drivers of vehicles approaching the loading bay
16.3 Cold stores			
16.3.1 General	200-300-500	3	
16.3.2 Breakdown, make-up and dispatch	200-300-500	3	
16.3.3 Loading bays	100-150-200	3	Avoid glare to drivers of vehicles approaching the loading bay

Types of interior or activity	Range of service	Quality class of direct glare	Remarks

	illuminance in lux	limitation	
17. COMMERCE			
17.1 Offices			
17.1.1 General Offices	300-500-750	1	
17.1.2 Deep plan General offices	500-750-1000	1	
17.1.3 Computer Work station	300-500-750	1	
17.1.4 Conference Rooms, Executive Offices	300-500-750	1	
17.1.5 Computer and data preparation Rooms	300-500-750	1	
17.1.6 Filling rooms	200-300-500	1	
17.2 Drawing Offices			
17.2.1 General	300-500-750	1	
17.2.2 Drawing Board	500-750-1000	1	
17.2.3 Computer aided design and drafting	--	--	Special lighting is required
17.2.4 Print rooms	200-300-500	1	
17.3 Banks and building societies			
17.3.1 Counter, office area	300-500-750	1	
17.3.2 Public area	200-300-500	1	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
18.SERVICES			
18.1 Garages			
18.1.1 Interior parking areas	20-30-50		
18.1.2 General repairs, servicing, washing, polishing	200-300-500	3	
18.1.3 Workbench	300-500-750	2	Local or localized lighting may be appropriate
18.1.4 Spray Booths	300-500-750	1	
18.1.5 External apron		1	
18.1.5.1 General	30-50-100	--	Care should be taken to avoid glare to drivers & neighboring residents
18.1.5.2 Pump area (retail details)	200-300-500	--	See retailing
18.2 Appliance servicing			
18.2.1 Workshop			
18.2.1.1 General	200-300-500	2	
18.2.1.2 Workbench	300-500-750	2	localized lighting may be appropriate
18.2.1.3 Counter	200-300-500	2	localized lighting may be appropriate
18.2.1.4 Stores	200-300-500	3	
18.3 Laundries			
18.3.1 Commercial laundries			
18.3.2 Receiving, sorting, washing, drying, Ironing, dispatch, dry-cleaning, bulk Machine work	200-300-500	3	

18.3.3 Head ironing, pressing, mending, spotting, inspection	300-500-750	3	
18.3.4 Launderettes	200-300-500	3	
18.4 Sewage Treatment Works			
18.4.1 Walkways	30-50-100	3	
18.4.2 Process areas	50-100-150	3	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
19. RETAILING			
19.1 Small Shops with Counters	300-500-750	1}	The service illuminance should be provided on the horizontal plane of the counter. Where wall displays are used, a similar illuminance on the walls is desirable
19.2 Small Self Service shops with island displays	300-500-750	1}	
19.3 Supper-Markets , Hyper-Markets			
19.3.1 General	300-500-750	2	
19.3.2 Checkout	300-500-750	2	
19.3.3 Showroom for large objects, for e.g. Cars, furniture	300-500-750	1	
19.3.4 Shopping precincts and arcades	100-150-200	2	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
20. PLACES OF PUBLIC ASSEMBLY			
20.1 Public rooms, Village Halls, Worship Halls	200-300-500	1	
20.2 Concert Halls, Cinemas and theatres			
20.2.1 Foyer	150-200-300	--	
20.2.2 Booking Office	200-300-500	--	Local or localized lighting may be appropriate
20.2.3 Auditorium	50-100-150	--	Dimming facilities will be necessary. Special lighting of the aisles is desirable
20.2.4 Dressing Rooms	200-300-500	--	Special mirror lighting for make up may be required
20.2.5 Projection Rooms	100-150-200	--	
20.3 Churches			
20.3.1 Body of church	100-150-200	2	
20.3.2 Pulpit, Lectern	200-300-500	2	Use local lighting
20.3.3 Choir Stalls	200-300-500	2	Local lighting may be appropriate
20.3.4 Alter, communion table, cancel	100-150-200	2	Additional lighting to

			provide emphasis is desirable
20.3.5 Vestries	100-150-200	2	
20.3.6 Organ	200-300-500	--	
20.4 Hospitals			
20.4.1 Anaesthetic Rooms			
20.4.1.1 General	200-300-500	--	
20.4.1.2 Local	750-1000-1500	--	
20.4.2 Consulting Area			
20.4.2.1 General	200-300-500	--	
20.4.2.2 Examination	750-1000-1500	--	
20.4.3 Corridors			
20.4.3.1 General	100-150-200	--	
20.4.4 Ward corridors			
20.4.4.1 Day, screened from bays	150-200-300	--	
20.4.4.2 Day, open to natural light	150-200-300	--	
20.4.4.3 Morning/evening	100-150-200	--	
20.4.4.4 Night	5-10	--	
20.4.5 Cubicles			
20.4.5.1 General	200-300-500	--	
20.4.5.2 Treatment	750-1000-1500	--	
20.4.6 Examination			
20.4.6.1 General	200-300-500	--	
20.4.6.2 Local inspection	750-1000-1500	--	
20.4.7 Intensive therapy			
20.4.7.1 Bad head	30-50	--	
20.4.7.2 Circulation between bed ends	50-100-150	--	
20.4.7.3 Observation	200-300-500	--	
20.4.7.4 Local observation	750-1000-1500	--	
20.4.7.5 Staff base(day)	200-300-500	--	
20.4.7.6 Staff base(night)	30	--	
20.4.8 Laboratories			
20.4.8.1 General	200-300-500	--	
20.4.8.2 Examination	300-500-750	--	
20.4.9 Nurses stations			
20.4.9.1 Morning/day/evening	200-300-500	--	
20.4.9.2 Night desks	30	--	
20.4.9.3 Night, medical trolleys	50-100-150	--	
20.4.10 Operating theatres			
20.4.10.1 General	300-500-750	--	
20.4.10.2 Local	10000 to 50000	--	Special operating lights are used
20.4.11 Pathology department			
20.4.11.1 General	200-300-500	--	
20.4.11.2 Examination	300-500-750	--	
20.4.11.3 Pharmacies	200-300-500	--	
20.4.11.4 Reception/ inquiry	200-300-500	--	
20.4.11.5 Recovery rooms	200-300-500	--	
20.4.12 Ward circulation			
20.4.12.1 Day	50-100-150	--	
20.4.12.2 Morning/evening	50-100-150	--	
20.4.12.3 Night	3-5	--	
20.4.13 Ward bed head			
20.4.13.1 Morning/Evening	30-50	--	
20.4.13.2 Reading	100-150-200	--	
20.4.14 Night			

20.4.14.1	Adult	0.1-1	--	
20.4.14.2	Pediatric	1-5	--	
20.4.14.3	Psychiatric	5	--	
20.4.14.4	Watch			
20.4.15	X-ray Areas			
20.4.15.1	General	150-200-300	--	
20.4.15.2	Diagnostic	150-200-300	--	
20.4.15.3	Operative	200-300-500	--	
20.4.15.4	Process dark room	50	--	
20.4.16	Surgeries			
20.4.16.1	General	200-300-500	--	
20.4.16.2	Waiting rooms	100-150-200	--	
20.4.17	Dental Surgeries			
20.4.17.1	Chair	Special lighting	--	
20.4.17.2	Laboratories	300-500-750	--	
20.4.18	Consulting rooms			
20.4.18.1	General	200-300-500	--	
20.4.18.2	Desk	300-500-750	--	
20.4.18.3	Examination	300-500-750	--	
20.4.18.4	Ophthalmic wall & near-vision charts	300-500-750	--	
20.5 Hotels				
20.5.1	Entrance Halls	50-100-150		
20.5.2	Reception, cashiers and porters Desks	200-300-500		localized lighting may be appropriate
20.5.3	Bars, coffee base, dinning rooms, grill, rooms, restaurants, lounges	50-200		The lighting should be designed to create appropriate atmosphere
20.5.4	Cloak room	50-100-150	3	
20.5.5	Bed room	30-50-100	--	Supplementary local lighting at the bed head, writing table should be provided
20.5.6	Bathroom	50-100-150		Supplementary local lighting near the mirror is desirable
20.5.7	Food preparation and stores, cellars, lifts and corridors		--	See General building areas
20.6 Libraries				
20.6.1 Lending libraries				
20.6.1.1	General	200-300-500	1	
20.6.1.2	Counters	300-500-750	1	localized lighting may be appropriate
20.6.1.3	Bookshelves	100-150-200	2	The service illuminance should be provided on the vertical surface at the bottom of the book stake
20.6.1.4	Reading rooms	200-300-500	1	
20.6.1.5	Reading tables	200-300-500	1	Localized lighting may be appropriate
20.6.2 Catalogues				
20.6.2.1	Card	100-150-200	2	
20.6.2.2	Microfiche/visual display units	100-150-200	2	

20.6.3 Reference libraries			
20.6.3.1 General	200-300-500	1	
20.6.3.2 Counters	300-500-750	1	Localized lighting may be appropriate
20.6.3.3 Bookshelves	100-150-200	2	The service illuminance should be provided on the vertical surface at the foot of the book shelves
20.6.3.4 Study tables, carrels	300-500-750	1	
20.6.3.5 Map room	200-300-500	1	
20.6.4 Display and exhibition			
20.6.4.1 Exhibits insensitive to light	200-300-500	--	
20.6.4.2 Exhibit sensitive to light, for e.g. Pictures, prints, rare books in Archives			
20.6.5 Library workrooms			
20.6.5.1 Book repair and binding	300-500-750	2	
20.6.5.2 Catalogue and sorting	300-500-750	2	
20.6.5.3 Remote book stores	100-150-200	3	
20.7 Museums and Art Galleries			
20.7.1 Exhibits insensitive to light	200-300-500	--	
20.7.2 Light sensitive exhibits, for e.g., oil and temper paints, undyed leather, bone, Ivory, wood, etc	150	--	This is a maximum illuminance to be provided on the principal plane of the object
20.7.3 Extremely light sensitive exhibits, For e.g., textiles, water colours, prints and drawing, skins, botanical specimens, etc.	50	--	This is a maximum illuminance to be provided on the principal plane of the object
20.7.4 Conservation studies and workshops	300-500-750	1	
20.8 Sports Facilities			
20.8.1 Multi-purpose sports hall	300-750	--	This lighting system should be sufficiently flexible to provide lighting suitable for the variety of sports & activities that take place in sports halls. Higher illuminance of 1000-2000 lux would be required for television coverage

Types of interior or activity	**Range of service illuminance in lux**	**Quality class of direct glare limitation**	**Remarks**
21 EDUCATION			
21.1 Assembly Halls			
21.1.1 General	200-300-500	3	
21.1.2 Platform and stage	--	--	Special lighting to

			provide emphasis & To facilitate the use of the platform stage is desirable
21.2 Teaching Spaces			
21.2.1 General	200-300-500	1	
21.3 Lecture Theatres			
21.3.1 General	200-300-500	1	
21.3.2 Demonstration benches	300-500-750	1	Localized lighting may be appropriate
21.4 Seminar Rooms	300-500-750	1	
21.5 Art Rooms	300-500-750	1	
21.6 Needlework Rooms	300-500-750	1	
21.7 Laboratories	300-500-750	1	
21.8 Libraries	200-300-500	1	
21.9 Music rooms	200-300-500	1	
21.10 Sport halls	200-300-500	1	
21.11 Workshops	200-300-500	1	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
22 TRANSPORT			
22.1 Airports			
22.1.1 Ticket counters, checking, desks And Information desks	300-500-750	2	Localized lighting may be appropriate
22.1.2 Departure lounges, other waiting Areas	150-200-300	2	
22.1.3 Baggage reclaim	150-200-300	2	
22.1.4 Baggage handling	50-100-150	2	
22.1.5 Customers and immigration halls	300-500-750	2	
22.1.6 Concourse	150-200-300	2	
22.2 Railway Stations			
22.2.1 Ticket office	300-500-750	2	Localized lighting over the counter may be appropriate
22.2.2 Information Office	300-500-750	2	Localized lighting over the counter may be appropriate
22.2.3 Parcels office, left			
22.2.4 Luggage Office			
22.2.4.1 General	50-100-150	2	
22.2.4.2 Counter	150-200-300	2	
22.2.5 Waiting rooms	150-200-300	2	
22.2.6 Concourse	150-200-300	2	
22.2.7 Time table	150-200-300	2	Localized lighting may be appropriate
22.2.8 Ticket Barriers	150-200-300	2	Localized lighting may be appropriate
22.2.9 Platforms (covered)	30-50-100	2	Care should be taken to light and mark the edge of platform clearly

22.2.10 Platforms (open)	20	--	Care should be taken to light and mark the edge of platform clearly
22.3 Coach Stations			
22.3.1 Ticket offices	300-500-750	2	Localized lighting over the counter may be appropriate
22.3.2 Information offices	300-500-750	2	Localized lighting over the counter may be appropriate
22.3.3 Left Luggage office			
22.3.3.1 General	50-100-150	3	
22.3.3.2 Counter	150-200-300	3	Localized lighting is appropriate
22.3.4 Waiting rooms	150-200-300	2	
22.3.5 Concourse	150-200-300	2	
22.3.6 Time Table	150-200-300	2	Local lighting is appropriate
22.3.7 Loading Areas	100-150-200	3	

Types of interior or activity	Range of service illuminance in lux	Quality class of direct glare limitation	Remarks
23. GENERAL BUILDING AREAS			
23.1 Entrance			
23.1.1 Entrance Halls, Lobbies, Waiting Rooms	150-200-300	2	
23.1.2 Inquiry desks	300-500-750	2	Localized lighting may be appropriate
23.1.3 Gatehouses	150-200-300	2	
23.2 Circulation Areas			
23.2.1 Lifts	50-100-150	--	
23.2.2 Corridors, Passageway, stairs	50-100-150	2	
23.2.3 Escalator, travellators	100-150-200	--	
23.3 Medical and First aid Centres			
23.3.1 Consulting Rooms, Treatment Rooms	300-500-750	1	
23.3.2 Rest Rooms	100-150-200	1	
23.3.3 Medical stores	100-150-200	2	
23.4 Staff Rooms			
23.4.1 Changing, locker and cleaner Rooms, Cloakrooms, lavatories	50-100-150	--	
23.4.2 Rest Rooms	100-150-200	1	
23.5 Staff Restaurant			
23.5.1 Canteens, cafeterias, dining rooms Mess rooms	150-200-300	2	
23.5.2 Servery, vegetable preparation, washing-up area	200-300-500	2	
23.5.3 Food preparation and cooking	300-500-750	2	
23.5.4 Food stores, cellars	100-150-200	2	
23.6 Communications			
23.6.1 Switchboard rooms	200-300-500	2	
23.6.2 Telephone apparatus room	100-150-200	2	

23.6.3 Telex room, post room	300-500-750	2	
23.6.4 Reprographic room	200-300-500	2	
23.7 Building Services			
23.7.1 Boiler houses			
23.7.1.1 General	50-100-150	3	
23.7.1.2 Boiler front	100-150-200	3	
23.7.1.3 Boiler control room	200-300-500	2	Localized lighting of the control display and the control desk may be appropriate
23.7.1.4 Control rooms	200-300-500	2	Localized lighting of the control display and the control desk may be appropriate
23.7.1.5 Mechanical plant room	100-150-200	2	
23.7.1.6 Electrical power supply and distribution Room	100-150-200	2	
23.7.1.7 Store rooms	50-100-150	3	
23.8 Car Parks			
23.8.1 Covered Car Parks			
23.8.1.1 Floors	5-20	--	
23.8.1.2 Ramps and Corners	30	--	
23.8.1.3 Entrances and Exits	50-100-150	--	
23.8.1.4 Control Booths	150-200-300	--	
23.8.1.5 Outdoor Car Parks	5-20	--	