

# Footlight Candle Index

## Airplane Manufacturing

Drilling, riveting, screw fastening.....	75
Final assemble, hangar.....	100
Inspection.....	50-200
Welding.....	50

## Assembly

Rough easy seeing.....	20-50
Rough difficult seeing.....	50-100
Medium.....	100-200
Fine.....	200-500(a)
Extra fine.....	500-1000(a)

## Auditoriums

Social activities.....	5-10
Assembly only.....	10-20
Exhibitions.....	10-20

## Automobile Manufacturing

Final assembly, finishing, inspecting.....	200
Body & chassis assembly.....	100
Body parts manufacturing.....	100
Frame assembly.....	50

## Banks

Lobby general.....	10-50
Writing areas.....	20-70
Teller stations, posting & keypunch.....	50-150

## Barber Shops

Beauty Parlors.....	50-100
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## Chemical Works.....

	30
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## Clothing Manufacturer

Receiving, storing, shipping, winding, measuring.....	20-50
Pattern making, trimming.....	50-100
Shops, marking.....	50-200
Cutting, pressing.....	100-500(a)
Sewing, inspection.....	200-500(a)

## Electrical Equipment Manufacturing

Impregnating.....	20-50
Insulating coil winding, testing.....	50-100

## Food Service Facilities

Dining areas	
Cashier.....	20-50
Cleaning.....	10-20
Dining.....	5-20
Food displays.....	30-100
Kitchen.....	50-100

## Foundries

Annealing furnaces.....	20-50
Cleaning.....	20-50
Core making.....	50-200
Inspection	
Fine.....	100-500
Medium.....	50-100
Molding.....	50-200
Pouring, sorting.....	50-100

## Garages-Motor Vehicles

Storage.....	5
Traffic Lanes	
Parking garage.....	10
Service garage.....	10-20

Entrances.....	50
Repair area.....	50-100

## Gymnasiums

Assemblies.....	10
General exercise & recreation.....	30
Exhibitions, matches.....	50

## Hospitals

Rooms.....	10-30
Corridors.....	5-30
Emergency rooms.....	50-100
Operating rooms.....	100-200

## Hotels

Bathrooms.....	20-50
Bedrooms for reading.....	20-50
Corridors, elevators and stairs.....	10-20
Front desk.....	50-100
Linen room	
Sewing.....	100-200
General.....	10-20

## Lobby

General lighting.....	10-20
Reading and working areas.....	20-50

## Iron & Steel Manufacturing

Stock, hot top, checker cellar, calcining.....	10-30
Building, slag pits, stripping yard.....	20
Control platforms, repairs, mixer building.....	30
Rolling mills.....	30-50
Shearing.....	50
Tin plate.....	50
Motor room, machine room.....	30
Inspection.....	100

## Laundries

Washing.....	20-50
Ironing.....	20-100

## Library

Ordinary reading, stacks.....	20-50
Book repair and binding.....	20-50
Study & notes, cataloging, card files, check desk.....	20-100

## Machine Shops

Rough bench.....	20-50
Medium bench, rough grinding, buffing.....	50-100
Fine bench and work.....	200-500(a)

## Materials Handling

Loading trucking.....	10-20
Picking stock classifying.....	20-50
Wrapping, packing, labeling.....	20-50

## Offices

Accounting.....	50-100
Audio-visual areas.....	20-50
Conference areas.....	20-70
Corridors, stairways.....	20(k)
Drafting.....	50-200
General and private offices.....	50-100

Lobbies, lounges and reception areas.....	0-20
Mail sorting.....	50-100
Off-set printing and duplicating area.....	20-50
Spaces with VDT's.....	75

## Paint Shop

Spraying, rubbing, hand art, stencil.....	20-50
Fine hand painting & finishing.....	50-100

## Paper Manufacturing

Beaters, grinding.....	20-50
Finishing, cutting.....	50-100
Hand coting.....	50-100
Paper manchine reel, inspection.....	100-200
Rewinder.....	100-200

## Printing

Photo engraving, etching, blocking.....	20-50
Color inspecting.....	100-200
Presses.....	50-100
Proofreading.....	100-200
Composing room.....	50-100

## Schools

Reading.....	20-100
Typing.....	20-100
Demonstrations.....	100-200
Sewing.....	20-100

## Sheet Metal Works

General.....	100
Tin plate inspection, galvanized, scribing.....	100-200

## Stores

Circulation area stockroom.....	10-30
Merchandising, serviced.....	30-100
Merchandising, self-service.....	200

## Textile Mills

Cotton picking, carding, roving, spinning.....	50
Beaming & slashing.....	150
Drawing.....	200
Others.....	100

## Warehousing, Storage

Inactive.....	5-10
Active	
Rough bulky.....	10-20
Medium.....	20
Fine.....	20-50
Welding	
General.....	20-50

## Woodworking

Rough sawing and bench work.....	20-50
Sizing, planing, rough sanding, medium quality machine and bench work, gluing, veneering, cooperage.....	20-50
Fine bench and machine work, fine sanding and finishing.....	50-100

# Footlight Candle Index With Maintained Footcandles

Building Area & Task	Average Maintained Footcandles (Horizontal) (FC)	Average of Maintained Footcandles (Horizontal) (FC)	Average Maintained Footcandles (Vertical) (FC)	Average of Maintained Footcandles (Vertical) (FC)	Comments
<b>WAREHOUSING &amp; STORAGE</b>					
Bulky Items—Large Labels	10		5		
Small items—Small Labels	30		15		
Cold Storage	20	10 - 30	10	5 - 15	
Open Warehouse	20	10 - 30			
Warehouse w/Aisles	20	10 - 30	10	5 - 15	
<b>COMMERCIAL OFFICE</b>					
Open Office	40	30 - 50			@30" Above Finished Floor (AFF)
Private Office	40	30 - 50			@30" AFF
Conference Room	30				Matte surface reflectance for the table 40% recommended
Restroom	18	7.5 - 30			
Laundry & Break Room	15	5 - 20			
<b>EDUCATIONAL (SCHOOLS)</b>					
Classroom	40	30 - 50			@30" AFF
Gymnasium					
Class I (Pro or Div. 1 College)	125		30		
Class II (Div. 2 or 3 College)	80		20		
Class III (High School)	50		150		
Class IV (Elementary)	30		100		
Auditorium	7.5	3 - 10	5	2.5 - 10	
Corridor	25	10 - 40			

[https://www.lightingdesignlab.com/sites/default/files/pdf/Footcandle\\_Lighting%20Guide\\_Rev.072013.pdf](https://www.lightingdesignlab.com/sites/default/files/pdf/Footcandle_Lighting%20Guide_Rev.072013.pdf)

- **Horizontal**—horizontal plane that average maintained foot-candles are measured, for example a tabletop
- **Vertical**—vertical plane the average maintained foot-candles are measured, for example a wall.

# Footlight Candle Index With Maintained Footcandles

Building Area & Task	Average Maintained Footcandles (Horizontal) (FC)	Range of Maintained Footcandles (Horizontal) (FC)	Average Maintained Footcandles (Vertical) (FC)	Range of Maintained Footcandles (Vertical) (FC)	Comments
<b>INDUSTRIAL/MANUFACTURING</b>					
Assembly					
Simple (Large Item)	30	15 - 60	30	15 - 60	
Difficult (fine)	100	50 - 200	100	50 - 200	
Component Manufacturing					
Large	30	15 - 60	30	15 - 60	
Medium	50	25 - 100	50	25 - 100	
<b>EXTERIOR</b>					
Parking (Covered)	5				FC min, 10:1 Max to formity
Parking (Open) (Medium Activity)					
Lighting Zone 3 (Urban)	1.5	.75 - 3	.8	.4 - 1.6	
Lightin g Zone 2 (suburban)	1	0.5 - 2	.6	.3 - 1.2	
Gas Station Canopy	12.5	10 - 15			
Safety (Building Exterior)	1	0.5 - 2			If security is an issue—raise average level to 3
<b>RETAIL</b>					
General Retail (Ambient)		50			
Department Store	40	20 - 80	15	7.5 - 30	
Perimeter			75	35 - 150	
Accent Lighting (Displays)					3 - 10 times greater than ambient light levels
<b>AUTOMOTIVE</b>					
Showroom	50	25 - 100	10	5 - 20	
Service Area	50	25 - 100	30	15 - 30	
Sales Lot (Exterior)					
Lighting Zone 3 (Urban)	20	10 - 40	20	10 - 40	
Lightin g Zone 2 (Suburban)	15	7.5 - 30	15	7.5 - 30	
<b>GROCERY</b>					
Circulation	20	10 - 40	7.5	3.5 - 15	
General Retail	50	25 - 100	20	10-40	
Perimeter			50	-100	
<b>BANKING</b>					
ATM	20	10-40	15		Vertical at face of ATM