

Table 4.3.2.A. Building Type Categories: Default Assumptions

Building Type	Occupant Density (m^2/person)	Receptacle Power (W/m^2)	Service Water Heating (W/person)	Minimum O.A. ($\text{L}/\text{s}/\text{m}^2$)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m^2)
	(1)	(2)	(3)	(4)	(5)	(6)
Office	25	7.5	90	0.4	A	18
Restaurant	10	1	115	1.25	B	15
Retail	30	2.5	40	1.0	C	30
Mall/Concourse/Atria	30	2.5	40	1.0	C	16
School	8	5	60	1.0	D	19
Service Establishment	30	2.5	80	1.0	C	22
Warehouse	1 500	1	300	1.0	E	6
Hotel/motel	25	2.5	500	0.25	F	15
Multifamily Residential	60	5	500	1.7	G	9

NOTES: (Apply to both Tables 4.3.2.A. and 4.3.2.B.)

- (1) Values from ASHRAE/IES Standard 90.1-1989 User's Manual - November 1992.
- (2) Values from ASHRAE/IES Standard 90.1-1989 User's Manual - November 1992.
- (3) Values from ASHRAE/IES Standard 90.1-1989 User's Manual - November 1992. Note that this table determines the total hot water usage to satisfy occupant needs. It does not mean that the hot water is actually used in that space. For example, hot water shown for office would actually be used in washrooms.
- (4) Values based on ASHRAE 62-89.
- (5) Where operating schedule is shown as an asterisk (*), this indicates that *space function* must be combined with another to form a *thermal block* and the operating schedule is determined by the *space function* with which it is combined.
- (6) Values from the MNECB.

Table 4.3.2.B. Space Functions: Default Assumptions

Space Function	Occupant Density (m ² /person)	Receptacle Power (W/m ²)	Service Water Heating (W-person)	Minimum O.A. (L/s/m ²)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m ²)
	(1)	(2)	(3)	(4)	(5)	(6)
Assembly						
Auditorium/Exhibit	5	2.5	30	1.5	C	17.2
Religious Worship	5	1	15	1.5	I	26.9
Theater - Performance	7.5	2.5	30	1.0	I	16.2
Theater - Motion Picture	5	2.5	30	1.5	I	16.2
Lobby	10	1	0	1.0	C	10.8
Atria	10	2.5	0	0.5	C	7.5
Recreation/Lounge	10	1	60	3.0	B	7.5
Conference/Meeting	5	1	45	2.0	C	19.4
Indoor Athletics Seating	5	0	30	1.5	I	10.8
Recreational Sports Area	5	1	90	2.0	I	13.0
Professional Sports Area	5	1.5	60	2.0	I	28.0
Locker Room and Shower	10	2.5	0	2.5	*	8.6
Health/Institutional						
Dental Suite/Exam	20	10	90	0.4	C	22.6
Emergency	20	10	180	0.75	H	24.7
Laboratory	20	10	180	0.75	H	20.4
Medical Supplies	20	1	0	0.75	H	25.8
Nursery	20	10	90	0.6	H	21.5
Nurse Station	20	2.5	45	0.4	H	22.6
Occupational/Physical Therapy	20	10	45	0.6	C	17.2
Patient Rooms	20	10	90	0.6	H	15.1
Pharmacy	20	2.5	45	0.4	C	18.3
Radiology	20	10	90	0.4	H	22.6
Surgical/O.B. Suites	20	10	180	0.75	H	22.6
Operating Room	20	10	300	0.75	H	75.3
Recovery	20	10	180	0.4	H	24.8

NOTES: See Notes to Table 4.3.2.A.

Table 4.3.2.B. Space Functions: Default Assumptions (cont.)

Space Function	Occupant Density (m ² /person)	Receptacle Power (W/m ²)	Service Water Heating (W-person)	Minimum O.A. (L/s/m ²)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m ²)
	(1)	(2)	(3)	(4)	(5)	(6)
Hotel/Motel						
Banquet Room	10	1	90	0.75	B	25.8
Hotel Prefunction	10	2.5	60	0.75	C	25.8
Guest Rooms	25	2.5	600	0.6	F	15.1
Exhibition Hall	10	2.5	60	0.75	C	28.0
Lobby/Reception Desk	10	2.5	30	0.75	H	21.5
Shop (Non-industrial)						
Machinery	30	1	50	2.5	C	26.9
Electrical/Electronic	30	10	50	1.25	C	26.9
Painting	30	10	90	5.0	C	17.2
Carpentry	30	10	50	1.25	C	24.8
Welding	30	10	90	5.0	C	12.9
Auto Repair	20	5	90	7.5	C	10.8
Office						
Category 1: <i>Enclosed offices, all open plan offices without partitions or with partitions lower than 1.37 m below the ceiling. Offices less than 84 m².</i>	20	7.5	90	0.5	A	19.4
Category 2: <i>Open plan offices 84 m² or larger with partitions 1.07 m to 1.37 m below the ceiling.</i>	20	7.5	90	0.5	A	20.4
Category 3: <i>Open plan offices 84 m² or larger with partitions higher than 1.07 m below the ceiling.</i>	20	7.5	90	0.5	A	23.7
Computer/Office Equipment	20	7.5	90	0.5	A	22.6
Filing, Inactive	50	0	0	0.2	A	10.8
Sorting and Mailing	20	7.5	90	0.5	A	19.4
Bank Business Area	20	7.5	90	0.2	A	30.1
Bank Customer Area	30	2.5	0	0.25	A	11.8

NOTES: See Notes to Table 4.3.2.A.

Table 4.3.2.B. Space Functions: Default Assumptions (cont.)

Space Function	Occupant Density (m ² /person)	Receptacle Power (W/m ²)	Service Water Heating (W-person)	Minimum O.A. (L/s/m ²)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m ²)
	(1)	(2)	(3)	(4)	(5)	(6)
Retail						
Type A: Jewelry merchandising, where minute examination of displayed merchandise is critical.	30	2.5	40	1.0	C	53.8
Type B: Fine merchandising, such as fine apparel and accessories, china, art, crystal and silver, where detailed display and examination of merchandise is important.	30	2.5	40	1.0	C	34.4
Type C: Mass merchandising, such as general apparel, variety, stationery, books, sporting goods, hobby, cameras, gifts and luggage, displayed in a warehouse type of building, where focused display and detailed examination of merchandise is important.	30	2.5	40	1.0	C	33.4
Type D: General merchandising, such as general apparel, variety, stationery, books, sporting goods, hobby, cameras, gifts and luggage, displayed in a department store type of building, where general display and examination of merchandise is adequate.	30	2.5	40	1.0	C	35.5
Type E: Food and miscellaneous, such as bakeries, hardware and housewares, grocery, appliances and furniture, where appetizing appearance is important.	30	2.5	40	1.0	C	30.1
Type F: Service establishments where functional performance is important.	30	2.5	40	1.0	C	29.1
Tailoring	30	2.5	40	1.0	C	22.6
Dressing/Fitting Rooms	30	0	40	0.25	C	15.1

NOTES: See Notes to Table 4.3.2.A.

Table 4.3.2.B. Space Functions: Default Assumptions (cont.)

Space Function	Occupant Density (m ² /person)	Receptacle Power (W/m ²)	Service Water Heating (W-person)	Minimum O.A. (L/s/m ²)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m ²)
	(1)	(2)	(3)	(4)	(5)	(6)
Food Service						
Bar/Lounge	10	1	90	1.5	B	26.9
Leisure Dining	10	1	90	1.0	B	26.9
Fast Food/Cafeteria	10	1	120	1.0	B	14.0
Kitchen	20	10	120	1.5	B	15.1
Dormitory						
Bedroom	25	2.5	500	0.3	G	11.8
Bedroom/Study	25	2.5	500	0.3	G	15.1
Study Hall	25	2.5	90	0.3	C	19.4
Education						
Classroom	7.5	5	65	1.0	D	21.5
Library						
Audio/Visual	20	5	90	0.4	C	11.8
Stack - Stack Mounted Lighting	20	0	90	0.4	C	16.2
Stack - Ceiling Lighting	20	0	90	0.4	C	32.3
Card File/Cataloguing	20	2.5	90	0.4	C	17.2
Reading	20	1	90	0.4	C	20.4
Laboratories						
Laboratories	20	10	180	0.5	A	24.8
Storage/Warehouse						
Inactive Storage	1750	0	300	0.25	E	3.2
Active Storage, Bulky	100	1	65	0.25	E	3.2
Active Storage, Fine	50	1	65	0.25	E	7.5
Material Handling	20	1	65	0.4	E	10.8

NOTES: See Notes to Table 4.3.2.A.

Table 4.3.2.B. Space Functions: Default Assumptions (cont.)

Space Function	Occupant Density (m ² /person)	Receptacle Power (W/m ²)	Service Water Heating (W-person)	Minimum O.A. (L/s/m ²)	Operating Schedule (Table 4.3.2.C.)	Lighting Power Density (W/m ²)
	(1)	(2)	(3)	(4)	(5)	(6)
Service and Common						
Mechanical/electrical room	200	1	0	0.25	*	7.5
Corridors	100	0	0	0.25	*	8.6
Toilet and Washrooms	30	1	0	1.0	*	8.7
Active Stairway	100	0	0	0.25	*	6.5
Emergency Stairway Exit	500	0	0	0.25	*	4.3
Air/Bus/Rail Terminals						
Baggage Area	20	2.5	65	0.5	H	10.8
Concourse/Main Thruway	20	0	65	0.5	H	9.7
Ticket Counter	10	2.5	65	1.0	H	26.9
Waiting and Lounge	10	0	65	1.0	H	12.9
Fire/Police						
Fire Engine Room	25	2.5	325	0.4	H	8.6
Jail Cell	25	2.5	325	0.4	H	8.6
Museum/Gallery						
General Exhibition	5	2.5	60	1.5	C	20.4
Inspection/Restoration	20	5	50	0.5	A	42.0
Storage (Artifacts) - Inactive	1000	0	60	0.25	E	6.5
Storage (Artifacts) - Active	100	1	60	0.25	E	7.5
Laundry						
Washing	20	20	60	0.6	C	9.7
Ironing and Sorting	20	20	60	0.5	C	14.0

NOTES: See Notes to Table 4.3.2.A.