

9 Lighting

Table 9.6.1 Lighting Power Density Allowances Using the Space-by-Space Method and Minimum Control Requirements Using Either Method

Common Space Types ¹		LPD Allowances, W/ft ²	RCR Threshold	a	b	c	d	e	f	g	h	i
<p>The control/functions below shall be implemented in accordance with the descriptions found in the referenced paragraphs within Section 9.4.1.1. For each space type:</p> <p>(1) All REQs shall be implemented.</p> <p>(2) At least one ADD1 (when present) shall be implemented.</p> <p>(3) At least one ADD2 (when present) shall be implemented.</p>												
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Atrium												
<20 ft in height	0.03/ft total height	NA		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
≥20 ft and ≤40 ft in height	0.03/ft total height	NA		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
>40 ft in height	0.40 + 0.02/ft total height	NA		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Audience Seating Area												
Auditorium	0.63	6		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Convention center	0.82	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Gymnasium	0.65	6		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Motion picture theater	1.14	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Penitentiary	0.28	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Performing arts theater	2.03	8		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Religious facility	1.53	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Sports arena	0.43	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
All other audience seating areas	0.43	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Banking Activity Area	0.86	6		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Breakroom (See Lounge/Breakroom)												
Classroom/Lecture Hall/Training Room												
Penitentiary	1.34	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ
All other classrooms/lecture halls/training rooms	0.92	4		REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ

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2. In corridors, the extra lighting power density allowance is permitted when the width of the corridor is less than 8 ft and is not based on the RCR.

3. A "Facility for the Visually Impaired" is a facility that can be documented as being designed to comply with the light levels in ANSI/IES RP-28 and is licensed or will be licensed by local/state authorities for either senior long-term care, adult daycare, senior support and/or people with special visual needs.

4. For accent lighting, see Section 9.6.2(b).

5. Sometimes referred to as a "Picking Area."

6. Automatic daylight responsive controls are mandatory only if the requirements of the specified sections are present.

7. An additional 0.52 W/ft² shall be allowed, provided that the additional lighting is controlled separately from the base allowance of 0.43 W/ft². The additional 0.52 W/ft² allowance shall not be used for any other purpose.

8. Class of play as defined by IES RP-6.

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Table 9.6.1 Lighting Power Density Allowances Using the Space-by-Space Method and Minimum Control Requirements Using Either Method (Continued)

		The control/functions below shall be implemented in accordance with the descriptions found in the referenced paragraphs within Section 9.4.1.1. For each space type: (1) All REQs shall be implemented. (2) At least one ADD1 (when present) shall be implemented. (3) At least one ADD2 (when present) shall be implemented.									
Common Space Types ¹	LPD, W/ft ²	RCR Threshold	a	b	c	d	e	f	g	h	i
Electrical/Mechanical Room ⁷	0.43	6	REQ				REQ	REQ			
Emergency Vehicle Garage	0.41	4	REQ	ADD1	ADD1		REQ	REQ		ADD2	ADD2
Food Preparation Area	1.06	6	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Guest Room	0.77	6	See Section 9.4.1.3(b).								
Laboratory											
In or as a classroom	1.20	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
All other laboratories	1.45	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Laundry/Washing Area	0.43	4	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Loading Dock, Interior	0.58	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Lobby											
Facility for the visually impaired (and not used primarily by the staff) ³	2.03	4	REQ				REQ	REQ	REQ	ADD2	ADD2
Elevator	0.69	6	REQ				REQ	REQ		ADD2	ADD2
Hotel	1.06	4	REQ				REQ	REQ	REQ	ADD2	ADD2
Motion picture theater	0.45	4	REQ				REQ	REQ	REQ	ADD2	ADD2
Performing arts theater	1.70	6	REQ				REQ	REQ	REQ	ADD2	ADD2
All other lobbies	1.00	4	REQ				REQ	REQ	REQ	ADD2	ADD2
Locker Room	0.48	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ
Lounge/Breakroom											
Healthcare facility	0.78	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ
All other lounges/breakrooms	0.62	4	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ

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 3. A "Facility for the Visually Impaired" is a facility that can be documented as being designed to comply with the light levels in ANSI/IES RP-28 and is licensed or will be licensed by local/state authorities for either senior long-term care, adult daycare, senior support and/or people with special visual needs.
 4. For accent lighting, see Section 9.6.2(b).
 5. Sometimes referred to as a "Picking Area."
 6. Automatic daylight responsive controls are mandatory only if the requirements of the specified sections are present.
 7. An additional 0.52 W/ft² shall be allowed, provided that the additional lighting is controlled separately from the base allowance of 0.43 W/ft². The additional 0.52 W/ft² allowance shall not be used for any other purpose.
 8. Class of play as defined by IES RP-6.

Table 9.6.1 Lighting Power Density Allowances Using the Space-by-Space Method and Minimum Control Requirements Using Either Method (Continued)

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Common Space Types ¹	LPD, W/ft ²	RCR Threshold	a	b	c	d	e	f	g	h	i
			Local Control (See Section 9.4.1.1(a))	Restricted to Manual ON (See Section 9.4.1.1(b))	Restricted to Partial Automatic ON (See Section 9.4.1.1(c))	Bi-level Lighting Control (See Section 9.4.1.1(d))	Automatic Daylight Responsive Sidelighting (See Section 9.4.1.1(e) ⁵)	Automatic Daylight Responsive Controls for Toplighting (See Section 9.4.1.1(f) ⁵)	Automatic Partial OFF (See Section 9.4.1.1(g) [Full Off complies])	Automatic Full OFF (See Section 9.4.1.1(h))	Scheduled Shutoff (See Section 9.4.1.1(i))
Office											
Enclosed and ≤250 ft ²	0.93	8	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	REQ	REQ
Enclosed and >250 ft ²	0.93	8	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Open plan	0.81	4	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Parking Area, Interior	0.14	4	See Section 9.4.1.2.								
Pharmacy Area	1.34	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Restroom											
Facility for the visually impaired (and not used primarily by the staff) ³	0.96	8					REQ				REQ
All other restrooms	0.85	8					REQ				REQ
Sales Area ⁴	1.22	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Seating Area, General	0.42	4	REQ	ADD1	ADD1		REQ			ADD2	ADD2
Stairway	The space containing the stairway shall determine the LPD and control requirements for the stairway.										
Stairwell	0.58	10				REQ	REQ	REQ	REQ	ADD2	ADD2
Storage Room											
<50 ft ²	0.97	6	REQ							ADD2	ADD2
≥50 ft ² and ≤1000 ft ²	0.46	6	REQ	ADD1	ADD1		REQ		REQ	REQ	REQ
All other storage rooms	0.46	6	REQ	ADD1	ADD1		REQ		REQ	REQ	ADD2
Vehicular Maintenance Area	0.56	4	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Workshop	1.14	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2

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Building Type Specific Space Types ¹		LPD W/ft ²	RCR Threshold	The control/functions below shall be implemented in accordance with the descriptions found in the referenced paragraphs within Section 9.4.1.1. For each space type: (1) All REQs shall be implemented. (2) At least one ADD1 (when present) shall be implemented. (3) At least one ADD2 (when present) shall be implemented.									
				a	b	c	d	e	f	g	h	i	
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<p><i>Facility for the Visually Impaired³</i></p>													
Chapel (used primarily by residents)		1.06	4	REQ	ADD1	REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Recreation room/common living room (and not used primarily by staff)		1.80	6	REQ	ADD1	REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
<p><i>Automotive (See "Vehicular Maintenance Area")</i></p>													
Convention Center—Exhibit Space		0.88	4	REQ	ADD1	REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Dormitory—Living Quarters		0.54	8	REQ									
Fire Station—Sleeping Quarters		0.20	6	REQ									
<p><i>Gymnasium/Fitness Center</i></p>													
Exercise area		0.50	4	REQ	ADD1	REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Playing area		0.82	4	REQ	ADD1	REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
<p><i>Healthcare Facility</i></p>													
Exam/treatment room		1.68	8	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Imaging room		1.06	6	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Medical supply room		0.54	6	(See "Storage Room" under "Common Space Types" for control requirements.)									
Nursery		1.00	6	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Nurse's station		0.81	6	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Operating room		2.17	6	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	
Patient room		0.62	6	REQ		REQ	REQ	REQ	REQ	REQ	ADD2	ADD2	

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Physical therapy room		0.84	6	REQ			REQ	REQ	REQ		ADD2	ADD2
Recovery room		1.03	6	REQ			REQ	REQ	REQ		ADD2	ADD2
Library												
Reading area		0.82	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Stacks		1.20	4	REQ	ADD1		REQ	REQ	REQ	REQ	ADD2	ADD2
Manufacturing Facility												
Detailed manufacturing area		0.93	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Equipment room		0.65	6	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Extra high bay area (>50 ft floor-to-ceiling height)		1.05	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
High bay area (25 to 50 ft floor-to-ceiling height)		0.75	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Low bay area (<25 ft floor-to-ceiling height)		0.96	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Museum												
General exhibition area		1.05	6	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Restoration room		0.85	6	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Performing Arts Theater—Dressing Room		0.36	6	REQ	ADD1		REQ	REQ	REQ		REQ	REQ
Post Office—Sorting Area		0.68	4	REQ	ADD1		REQ	REQ	REQ	REQ	ADD2	ADD2
Religious Facility												
Fellowship hall		0.55	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2
Worship/pulpit/choir area		1.53	4	REQ	ADD1		REQ	REQ	REQ		ADD2	ADD2

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Retail Facilities												
Dressing/fitting room		0.5	8	REQ	ADD1	ADD1	REQ	REQ	REQ		REQ	
Mall concourse		0.9	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Sports Arena—Playing Area ⁸												
Class I facility		2.47	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Class II facility		1.96	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Class III facility		1.70	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Class IV facility		1.13	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Transportation Facility												
Buggage/carousel area		0.45	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Airport concourse		0.31	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Terminal/ticket counter		0.62	4	REQ	ADD1	ADD1	REQ	REQ	REQ		ADD2	ADD2
Warehouse—Storage Area												
Medium to bulky, palletized items		0.35	4	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2
Smaller, hand-carried items ⁵		0.69	6	REQ	ADD1	ADD1	REQ	REQ	REQ	REQ	ADD2	ADD2

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