

O&M Best Practice Checklist

LIGHTING & DAYLIGHTING

A Preventive Maintenance Checklist for Facility Operators

AUDIENCE

Facility maintenance staff, building operators, lighting / electrical technicians, chief building engineers, and facility managers responsible for the operation, inspection, and maintenance of interior and exterior lighting, daylighting, and lighting-controls systems. Designers, lighting professionals (IES), commissioning agents, and owners may also use this checklist as a reference.

MINDSET

Proactive vs. Reactive. Healthy buildings start with healthy systems and stay ready for reactive scenarios when they arise.

WHY

Lighting and daylighting directly affect occupant visual comfort, productivity, mood, circadian function, task performance, safety, and energy use. Poor lighting performance in operating buildings is most often not caused by poor but caused by operations and maintenance issues that are not corrected: dirty luminaires and fenestration, failed lamps and drivers, miscalibrated sensors, unmaintained controls, blocked or unmanaged shading, glare from uncontrolled daylight, and flicker from incompatible drivers/dimmers. Please note, that when the space use or layout changes and the light fixtures are not adjusted an no longer match how the space is used is also an issue that needs to be noted but falls to the Owner, Occupant and Designer doing the renovations to the space.

Routine, documented preventive maintenance of lighting, controls, and daylight-management systems is one of the most cost-effective tools a facility team has to protect occupants, support energy compliance, and preserve the asset value of the building.

BACKGROUND & OBJECTIVES

The goals of this lighting preventive-maintenance checklist are to:

- Provide facility staff with a practical schedule of monthly, quarterly, semi-annual, annual, and multi-year lighting and daylighting tasks aligned with ANSI/ASHRAE/IES Standard 90.1, IES recommended practices (RP / LP series), and applicable rating systems.
- Maintain interior lighting, exterior lighting, daylighting apertures, and lighting controls so that the original design intent for illuminance, uniformity, color, and controllability is sustained through the life of the building.
- Detect and correct common lighting failure modes — failed lamps/drivers, dirty luminaires and fenestration, sensor drift, broken controls, flicker, glare, lighting-load creep — before they become occupant complaints or code-compliance issues.
- Reduce occupant exposure to visually uncomfortable or unsafe conditions: glare, flicker, low light levels for the task, poor uniformity, and inappropriate color quality.
- Establish the proactive baseline that supports controls retro-commissioning, daylight-harvesting calibration, lighting-power-density (LPD) compliance, and emergency-lighting code requirements.
- If applicable, align with voluntary rating systems including LEED v5 (Quality Views, Daylight, Interior Lighting), WELL Light, and IES design and verification recommendations.
- Create a documented, auditable record (logs, dates, findings, corrective actions) supporting energy-code, life-safety, accessibility, and warranty/insurance requirements.
- Promote a 'good is better than perfect' culture: complete the basic checks every cycle, capture observations, and iterate.

MEASURES OF SUCCESS

- ✓ All lighting maintenance tasks completed at minimum required frequency.
- ✓ Measured illuminance at representative task surfaces meets or exceeds IES recommendations for space type.
- ✓ No lamps/luminaires out (interior or exterior) at the time of the monthly walk; failed lamps replaced or scheduled within a defined service window.
- ✓ Lighting controls — occupancy / vacancy / daylight / time / dimming — operate as designed; sensors respond to programmed cues.
- ✓ Daylight glare is controlled at occupied workstations and primary view positions; shading and electric light interlock correctly.
- ✓ No occupant complaints related to flicker, glare, color quality, or controls intuitiveness outstanding > one cycle.
- ✓ Emergency / egress lighting tested per code (typically monthly functional and annual 90-minute discharge); records retained.
- ✓ Exterior and parking lighting operate per schedule / photocell; light trespass and uplight are within design intent and any local dark-sky requirements.

- ✓ Lighting power density (interior and exterior) remains compliant with the building's applicable energy code as alterations occur.
- ✓ Reduction in unscheduled lighting service calls and occupant complaints year over year.

HOW TO USE THIS CHECKLIST

Each frequency tab (Monthly, Quarterly, Semi-Annual, Annual, Multi-Year) is a stand-alone inspection sheet. For each task, record the date completed, the technician initials, and a status (Pass / Fail / N/A / Deferred). If a task fails or cannot be verified, log a corrective action in the 'Findings / Corrective Action' column and on the 'Observations Log' tab. Attach photometric readings, before/after photos, and controls test reports to the building's O&M manual. Increase frequency for any task that repeatedly fails, that operates in unusual conditions, or that supports critical occupancies. Tasks marked (Vd) require calibrated tools (illuminance meter, luminance meter, flicker meter) or a qualified technician.

PRIMARY SOURCES

- ANSI/ASHRAE/IES Standard 90.1 — Energy Standard for Sites and Buildings (Sections on Interior & Exterior Lighting and Lighting Controls).
- IES Lighting Handbook, 11th Edition — Reference & Application.
- IES Recommended Practices (RP / LP series) for office, education, industrial, healthcare, retail, residential, exterior, and lighting controls applications.
- IES TM-30 — Method for Evaluating Light Source Color Rendition.
- IES TM-33 / IEEE Std 1789 / CIE TN 006 — Temporal Light Modulation (flicker) evaluation guidance.
- ANSI/IES LP-16 — Documenting Control Intent Narrative; LP-1 Lighting Control Systems — Properties, Selection and Specification.
- NFPA 70 (NEC), NFPA 101 Life Safety Code, and NFPA 110 — emergency, egress, and standby lighting test and recordkeeping.
- USGBC LEED v5 — Indoor Environmental Quality credits (Daylight, Quality Views, Interior Lighting, Acoustic Performance — Lighting related strategies).
- WELL Building Standard — Light concept (visual lighting design, electric light glare control, circadian lighting, daylight simulation).
- Local energy code (e.g., IECC, IBC) and any adopted dark-sky / outdoor-lighting ordinance.
- IES TM-15 - Technical Memorandum: Luminaire Classification System for Outdoor Luminaires

Lighting Preventive Maintenance — Monthly Tasks

Walk-through inspections to be completed every 30 days. These tasks catch the most common and fastest-moving lighting failures: lamps out, dirty fixtures, controls drift, broken shading, glare complaints, and emergency-lighting issues. Most can be completed visually with a flashlight, the BAS / lighting-control front-end, and a handheld illuminance meter.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
INTERIOR LIGHTING — VISUAL & FUNCTIONAL									
1	Lamp-out / luminaire out walk	Walk all occupied floors, lobbies, restrooms, stairwells, and back-of-house spaces. Identify and log lamps/luminaires that are off, flickering, or visibly dim. Issue replacement work orders.	V	IES Lighting Handbook 11th Ed.	Interior maintenance / group relamping				
2	Occupant lighting complaints	Review the lighting-complaint log for the past 30 days (too bright, too dark, glare, flicker, controls not intuitive, warm/cool light). Dispatch follow-up and document corrective action.	V	Facility complaint program; LEED v5 EQ	Occupant feedback / IEQ Management Plan				
3	Visual glare check at workstations	Quickly inspect representative workstations and screens for direct-source, reflected, or daylight glare. Confirm shades are operating; tag any luminaires with damaged louvers or missing baffles.	V	IES Lighting Handbook 11th Ed.; WELL Light	Visual comfort / glare control				
LIGHTING CONTROLS — FUNCTIONAL SPOT CHECK									
4	Occupancy / vacancy sensors	Spot-check a sample of occupancy and vacancy sensors in offices, classrooms, conference rooms, restrooms, and storage areas. Confirm correct response to presence and absence; verify time-delay setting is reasonable. Also confirm that they are not being falsely triggered to be on due to poor sensor placement.	V	ASHRAE 90.1 §9; LEED v5 EQ	Automatic shut-off / occupant sensor controls				
5	Daylight sensors / harvesting	Spot-check daylight-harvesting zones near windows and skylights at multiple times of day. Confirm electric light dims/extinguishes when sufficient daylight is present.	V	ASHRAE 90.1 §9; IES LP-1	Daylight responsive controls				
6	Time-clock / scheduled controls	Verify time-of-day schedules for offices, common areas, and exterior lighting are correct for the current season (sunrise/sunset offset, holiday calendar, after-hours overrides).	V	ASHRAE 90.1 §9	Time-switch controls				
7	Switch & control-station labels	Verify switchplates, dimmer faceplates, and control-station screens are clean, legible, and labeled. Re-engage or re-label faceplates where intent is unclear.	V	ANSI/IES LP-1; ANSI/IES LP-16	Controls intuitiveness / user interface				
DAYLIGHT, FENESTRATION & SHADING									
8	Window / skylight cleanliness	Inspect occupied-side window and skylight surfaces for dirt, smudges, or fogging that materially reduce daylight transmission. Schedule cleaning per facility program.	V	IES Lighting Handbook; LEED v5 EQ	Daylight / Quality Views				
9	Operable / automated shading	Verify manual blinds, roller shades, and any motorized/automated shading are operational, undamaged, and within reach of occupants. Confirm automated shades follow the intended schedule or sun-tracking response.	V	WELL Light; LEED v5 EQ	Glare control				
EXTERIOR & EGRESS LIGHTING									
10	Exterior lamp-out walk	After dusk (or via photocell trend in BAS), walk/drive the site to identify dark exterior fixtures: parking, walkways, building façade, entrances, and loading docks. Note safety-critical outages first.	V	IES Lighting Handbook; local code	Exterior lighting — operation				
11	Exit / egress signs	Visually inspect all exit signs and egress lighting for illuminated face, damage, missing diffusers, and obstructions. Tag faulty units for repair.	V	NFPA 101 / IBC	Means of egress illumination				
12	Emergency lighting — monthly functional test	Perform monthly functional (30-second) test of all emergency lighting fixtures, exit signs, and egress unit equipment per NFPA 101 §7.9. Record date, location, and result; replace failed units.	Vd	NFPA 101 §7.9; NFPA 70	Emergency illumination monthly test				

Type Codes:

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Lighting Preventive Maintenance — Quarterly Tasks

Quarterly tasks add closer attention to controls performance, photometric verification at representative locations, and the condition of drivers, dimmers, sensors, and exterior fixtures.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
PHOTOMETRIC SPOT-CHECKS									
1	Illuminance verification — interior	Using a calibrated illuminance meter, spot-check task surfaces in representative office, classroom, lab, kitchen, and circulation spaces. Compare to IES recommended illuminance for space type. Document deviation.	Vd	IES Lighting Handbook 11th Ed.	Illuminance recommendations by space type				
2	Uniformity check	At representative open-office or classroom areas, measure illuminance at multiple points along a grid to evaluate uniformity ratio (avg / min). Investigate when uniformity is materially worse than design intent.	Vd	IES Lighting Handbook 11th Ed.	Illuminance uniformity				
3	Color quality observation	Visually evaluate apparent color rendition and color temperature consistency among adjacent fixtures and between zones. Note inconsistent CCT or fading where lamps have aged unevenly.	V	IES TM-30; IES Lighting Handbook	Color rendition / consistency				
4	Flicker observation	Observe representative dimmed and non-dimmed luminaires for visible flicker, including under camera (smartphone) and when dimmed to low levels. Flag spaces where occupants report flicker, headaches, or visual fatigue.	V	IES TM-33; IEEE 1789	Temporal Light Modulation (TLM)				
CONTROLS — SENSORS & DIMMING									
5	Sensor cleaning & lens check	Clean lenses on photocells, occupancy sensors, and daylight sensors. Verify sensor placement is not blocked by furniture, fixtures, or stored materials.	V	ANSI/IES LP-1; ASHRAE 90.1 §9	Sensor maintenance				
6	Dimming behavior	Cycle dimmers/controls in representative spaces full bright to lowest setting. Verify smooth dimming, no popcorning, no audible buzz, and consistent response across grouped fixtures.	V	ANSI/IES LP-1	Dimming compatibility / commissioning				
7	Daylight-response calibration check	In one or two daylight-harvesting zones, override the daylight sensor and verify electric-light setpoint matches design intent. Calibrate or rezone if drift is observed.	Vd	ASHRAE 90.1 §9; IES LP-1	Daylight-responsive control commissioning				
8	Networked controls / BAS integration	Pull a status report from the lighting control system or BAS: device offline counts, communication errors, and override flags. Issue work orders for offline gateways, panels, or fixtures.	V	ANSI/IES LP-16	Control intent narrative / system health				
EXTERIOR & SITE LIGHTING									
9	Exterior fixture cleaning	Clean lenses and reflectors on a representative sample of exterior wall packs, bollards, area / parking-lot, façade, and signage fixtures. Trim vegetation blocking light distribution.	V	IES Lighting Handbook 11th Ed.	Exterior maintenance				
10	Photocell / time-clock review	Verify exterior-lighting photocells turn on at dusk and off at dawn, and that astronomical time-clocks track seasonal change. Confirm dawn/dusk offsets and holiday schedules are correct.	V	ASHRAE 90.1 §9	Exterior automatic control				
11	Light trespass / uplight observation	After dusk, walk the site perimeter; observe any light trespass onto adjacent properties or uplight beyond design. Adjust aiming or shielding where local code or dark-sky requirements apply.	V	IES TM-15; local ordinance	Outdoor lighting performance				

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Lighting Preventive Maintenance — Semi-Annual Tasks

Semi-annual tasks (twice per year) include luminaire cleaning at scale, lens & reflector inspection, deeper controls health, glare/shading commissioning, and verification of emergency/egress equipment beyond the monthly functional test.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
LUMINAIRE CLEANING & INSPECTION									
1	Group cleaning — interior	Clean lenses, reflectors, and louvers on interior luminaires in occupied areas. Address dust accumulation that depresses delivered illuminance; replace damaged diffusers/louvers.	V	IES Lighting Handbook 11th Ed.	Group cleaning / maintained illuminance				
2	Lamp / driver / module inspection	Inspect representative luminaires for failed or end-of-life LED modules, drivers showing fault codes, audible buzz, discoloration, lens yellowing, or heat distress. Replace per OEM.	V	Manufacturer O&M	LED / driver service life				
3	Recessed fixture / housing integrity	Inspect recessed downlights and troffer housings for damaged trims, missing reflectors, broken hangers, or fire-rated penetration concerns above accessible ceilings.	V	NFPA 70; manufacturer O&M	Fixture installation integrity				
CONTROLS — DEEPER VERIFICATION									
4	Control sequence review	Walk each major control zone through its programmed sequence (occupancy + daylight + schedule + override). Confirm sequence matches the Control Intent Narrative; document any drift or operator-modified overrides.	Vd	ANSI/IES LP-16	Control intent narrative review				
5	Time-clock / schedule audit	Audit all time-clock schedules across panels and BAS for accuracy with current building hours, after-hours rentals, summer/winter time shifts, and holiday calendars.	V	ASHRAE 90.1 §9	Scheduled lighting controls				
6	Sensor placement / coverage	Spot-check occupancy / daylight sensor coverage in changed-use rooms (new furniture, relocated workstations). Reposition or recommission as needed.	V	ANSI/IES LP-1	Sensor placement / coverage				
DAYLIGHTING & SHADING SYSTEMS									
7	Daylight aperture inspection	Inspect window film, glazing seals, light shelves, clerestories, and skylights for dirt, damage, fogged units, or failed seals reducing visible-light transmission.	V	LEED v5 EQ; WELL Light	Daylight maintenance				
8	Shading-system service	Service motorized shades and automated blind systems: limit-switch calibration, motor noise, fabric condition, and group response. Replace controllers showing fault codes.	V	Manufacturer O&M; WELL Light	Shading commissioning				
9	Glare zone review	Reassess perimeter workstations and conference rooms with the sun angle of the current season. Adjust shading rules or workstation orientation if glare is recurrent.	V	WELL Light; IES Lighting Handbook	Glare evaluation				
EMERGENCY & LIFE-SAFETY LIGHTING									
10	Battery-pack functional test	Verify monthly functional-test records are current. Conduct supplemental functional checks of self-contained battery-pack egress fixtures and stairwell unit equipment.	Vd	NFPA 101 §7.9	Emergency lighting periodic test				

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Lighting Preventive Maintenance — Annual Tasks

Annual inspections — the deepest verification cycle short of full lighting re-commissioning. These tasks form the foundation of the building's Lighting Management Plan, the O&M Manual, and any LEED v5 / WELL documentation.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
ANNUAL PHOTOMETRIC ASSESSMENT									
1	Annual illuminance audit	Conduct a building-wide annual illuminance audit using a calibrated meter at representative task surfaces in each space type. Compare to IES recommendations and design intent; report deviations and remediation plan.	Vd	IES Lighting Handbook 11th Ed.	Annual illuminance verification				
2	Color quality audit (CCT, CRI/TM-30)	Verify color temperature and color rendition consistency across major space types. Where mixed-age lamps create visible CCT shift, schedule group replacement.	V	IES TM-30	Color rendition consistency				
3	Flicker assessment	Conduct flicker observation across dimmable lighting zones using a TLM/flicker meter at representative settings. Document Pst LM and stroboscopic visibility measures (SVM) where measured. Address out-of-tolerance drivers/dimmer pairings.	Vd	IES TM-33; IEEE 1789	Temporal Light Modulation				
CONTROLS RETRO-COMMISSIONING (LIGHT-LEVEL)									
4	Sensor calibration audit	Calibrate or replace photocells, daylight sensors, and occupancy sensors as needed; document calibration date. Trend sensor data for drift across zones.	Vd	ANSI/IES LP-1; ASHRAE 90.1 §9	Sensor calibration				
5	Controls health & sequence	Perform a controls retro-commissioning walk: each zone exercised through occupancy, daylight, schedule, override, and demand-response (where present). Compare to Control Intent Narrative.	Vd	ANSI/IES LP-16	Controls retro-commissioning				
6	Demand response / load shedding (if applicable)	If the building participates in utility demand-response or load-shedding programs, exercise the load-shed sequence annually and verify graceful return to normal operation.	V	ANSI/IES LP-16; utility program	Demand response sequence				
EXTERIOR LIGHTING — FULL INSPECTION									
7	Exterior cleaning & re-lamping	Clean all exterior fixtures (parking, walkways, façade, signage, security). Group-replace lamps/modules approaching end of life; document fixture-level service history.	V	IES Lighting Handbook	Exterior maintenance				
8	Photocell / time-clock validation	Validate astronomical time-clock and photocell operation across a full day cycle (or via trend). Verify dark-sky / curfew controls are operating where required.	Vd	ASHRAE 90.1 §9; local code	Exterior automatic control				
9	Light trespass / uplight survey	Conduct a perimeter survey at night and document any trespass, uplight, or glare exceeding local ordinance or design intent. Update site-lighting documentation.	V	IES TM-15; local ordinance	Outdoor lighting performance				
EMERGENCY LIGHTING — ANNUAL DISCHARGE TEST									
10	Annual 90-minute discharge test	Conduct annual 90-minute (or duration-of-record) discharge test for all emergency egress fixtures, exit signs, and stairwell unit equipment per NFPA 101 §7.9. Replace batteries/fixtures that fail. Retain dated records.	Vd	NFPA 101 §7.9	Emergency illumination annual test				
LIGHTING-POWER & ENERGY COMPLIANCE									
11	Lighting Power Density (LPD) review	Review any tenant fit-outs, renovations, or fixture replacements completed during the year for continued compliance with the building's applicable energy code (ASHRAE 90.1 or local IECC) interior LPD allowances.	Vd	ASHRAE 90.1 §9; IECC	Interior lighting power				
12	Exterior lighting power review	Review exterior lighting power against the project's exterior lighting zone (LZ0–LZ4) allowance under ASHRAE 90.1 / IECC.	Vd	ASHRAE 90.1 §9; IECC	Exterior lighting power				
13	As-built lighting drawings update	Update the building's lighting / control drawings, fixture schedules, and Control Intent Narrative to reflect any changes from the past year.	V	ANSI/IES LP-16	As-built documentation				
DOCUMENTATION & OCCUPANT FEEDBACK									
14	Occupant lighting survey (optional)	Distribute or review the occupant satisfaction / visual-comfort survey where program is in place. Trend results and address recurring complaints (glare, color, controls intuitiveness, flicker).	V	LEED v5 EQ; WELL Light	Occupant survey				
15	Lighting Management Plan refresh	Update the building's written Lighting Management Plan: maintenance schedules, group-re-lamping plan, controls intent, sensor calibration log, complaint procedures, and emergency-lighting records.	V	ANSI/IES LP-16	Lighting Management Plan				

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Lighting Preventive Maintenance — Multi-Year (2–5 Years) & As-Required

Multi-year tasks include the group-relamping cycle, full re-commissioning of lighting controls, deep daylight modeling updates, and the event-driven actions (renovation, change-of-use, after a complaint cluster). Schedule these into a rolling 3-5 year plan in the O&M manual.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
EVERY 2–3 YEARS									
1	Controls re-commissioning	Engage the lighting controls integrator or commissioning agent to re-commission lighting controls: sequence verification, sensor calibration, network health, dimming-curve verification, and Control Intent Narrative update.	Vd	ANSI/IES LP-16	Controls re-commissioning				
2	Lamp / module group replacement	Implement group relamping/module replacement at the design service life (LM-80 / TM-21 projections, typically 3-5 years for high-runtime LED applications). Document service date and projected next interval.	V	IES TM-21 / LM-80	Group relamping				
EVERY 3–5 YEARS									
3	Daylight performance re-evaluation	Re-evaluate daylight performance (sDA, ASE, or annual daylight glare probability) after any major façade alterations, shading changes, or interior reconfigurations. Re-train daylight-harvesting setpoints accordingly.	Vd	LEED v5 EQ; IES LM-83	Annual daylight metrics				
4	Flicker / dimming compatibility re-check	Where drivers, dimmers, or controls have been replaced, perform a flicker and dimming-compatibility re-check; update the approved-equipment list and Control Intent Narrative.	Vd	IES TM-33; IEEE 1789	Flicker / dimming compatibility				
AS REQUIRED (event-driven)									
5	Renovation / tenant fit-out	After any tenant fit-out, renovation, or change of space type, re-verify illuminance, glare, LPD compliance, controls integration, and emergency-lighting coverage in the affected area.	Vd	ASHRAE 90.1 §9; IES; NFPA 101	Renovation / change-of-use				
6	Complaint cluster / IEQ investigation	When complaints cluster around a space (glare, flicker, dimness, controls), conduct an investigation including illuminance, luminance, and flicker measurement, modify shading, controls, or fixtures and document outcome.	Vd	WELL Light; IES Lighting Handbook	Complaint response				
7	Energy-audit / retrofit study	Conduct an energy-audit / lighting-retrofit study (ASHRAE Level III) when fixtures approach end of life, when energy code is updated, or when the lighting represents an oversized share of operating cost.	Vd	ASHRAE 211 / ASHRAE 90.1	Energy audit				

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Lighting Preventive Maintenance — Emergency & Egress Lighting

Dedicated tab for life-safety lighting: emergency egress lighting, exit signs, stairwell unit equipment, and the corresponding inspection, functional, and annual discharge testing required by NFPA 101 / NFPA 70 / NFPA 110. Inspection frequencies below are minimum code requirements; increase as required by AHJ.

Building / Site:

Inspector:

Period:

#	Topic / Equipment	Inspection / Maintenance Task	Type	Source / Reference	Standard Section / Clause	Status	Date Completed	Performed By (Initials)	Findings / Corrective Action
MONTHLY									
1	Monthly 30-second functional test	Test every emergency fixture, exit sign, and stairwell unit equipment for 30 seconds. Verify illuminated condition and proper operation under simulated power loss.	Vd	NFPA 101 §7.9.3	Monthly functional test				
2	Battery / charging indicator	Inspect indicator LEDs on self-contained units; replace units with fault indicators or that fail the 30-second test.	V	NFPA 101 §7.9.3	Battery condition				
ANNUAL									
3	Annual 90-minute discharge test	Disconnect normal power and verify each emergency unit operates for the required 90 minutes (or design duration). Document start time, end time, location, and pass/fail; replace failed units immediately.	Vd	NFPA 101 §7.9.3	Annual 90-minute test				
4	Exit sign condition	Verify all exit signs are illuminated, undamaged, and visible from all egress paths per NFPA 101 / IBC.	V	NFPA 101 §7.10	Exit signs				
5	Standby / generator-served lighting	Where egress / standby lighting is served by an emergency generator (NFPA 110), coordinate with monthly/annual generator testing; verify ATS transfer and runtime per NFPA 110 §8.4.	Vd	NFPA 110 §8.4	Emergency power testing				
RECORDKEEPING									
6	Test log retention	Maintain a written or electronic test log of all functional and discharge tests for the time period required by the AHJ (typically the life of the building or per local fire code).	V	NFPA 101 §7.9.3.1.3	Test log retention				
7	AHJ inspection support	Support periodic fire-marshal / AHJ inspections by providing the test log, layout drawings, and corrective-action records.	V	Local fire code	AHJ coordination				

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Standards:

NFPA 101 = Life Safety Code | NFPA 70 = National Electrical Code (Article 700/701/702) | NFPA 110 = Emergency and Standby Power Systems | AHJ = Authority Having Jurisdiction

Common Negative Observations	Technical Description	Metric(s)	Considerations	Next Steps / Remediation
Space is uncomfortably bright	More illuminance than needed for space type	Illuminance Recommendations (FC or lux), illuminance meter	Materials and finishes (colors and reflectance values), room size, tasks performed	Consider dimming options and recommissioning, changes to task surfaces and proximity to lighting
Space is too dark	Not enough illuminance to complete tasks	Illuminance Recommendations (FC or lux), illuminance meter	Materials and finishes (colors and reflectance values), room size, tasks performed	Consider dimming levels, additional opportunities for supplemental lighting later
Visually uncomfortable / glare	Contrast is too high (luminance) against background finishes	Luminance meter (cd/m ²)	Materials and finishes (contrast, specularity, etc.), tasks performed, sight lines, shading (daylight contribution)	Consider dimming levels,
Light is inconsistent / lacks uniformity	Lack of uniformity is creating undesirable visual effects	Illuminance Recommendations (FC or lux) for uniformity, illuminance meter	Design intent for accents & highlights, materials and finishes, poor maintenance	
Controls are not intuitive	Controls switch plate isn't clear, lacks description of on/off/dimming	Refer to best practices including specification guidelines and recommendations (IES RP/LPs)		Engrave switch plates or add labels, educate users, consider automation options
Automated controls are not working	Daylight, occupancy, and/or vacancy sensors aren't responding to cues (people, daylight). Timed events aren't deploying.	ASHRAE 90.1, illuminance meter	Commissioning may have not been completed correctly, sensors might be blocked or bad, additional programming may be needed	Integrator or controls manufacturer for site visit, commissioning review with owners
Flicker	Temporal Lighting Modulation, Visually perceivable flash/murmur/fluctuation in lighting emission	SVM (stroboscopic visibility measure), Hz (frequency), flicker index, Pst LM (short-term flicker severity)	Driver design, dimming system expectations (light may be dimmed too low), AC power ripple, incompatible controls, PWM dimming, or poor power quality	TLM meter of space, compatibility check (reverse lookup of compatibility of luminaire and controls system)
Space is warm	Solar heat gain is perceivable by occupants in close proximity to windows/fenestration			HVAC trends in mitigation, installing shading systems

Lighting Source & Standards Crosswalk

This crosswalk maps the requirements of ANSI/ASHRAE/IES Standard 90.1, IES Lighting Handbook and RP / LP / TM documents, NFPA life-safety codes, and LEED v5 / WELL Light credits to the tabs in this workbook so a reviewer can confirm coverage.

Standard / Rating System	Section / Credit	Title / Topic	Frequency	Where in this Workbook	Review Notes / Basis	Public Reference URL
ANSI/ASHRAE/IES STANDARD 90.1 — INTERIOR & EXTERIOR LIGHTING						
ASHRAE 90.1	§9.4	Interior lighting power (LPD)	Annual / Event-driven	Annual / Multi-Year	Verify continued compliance after fit-outs and renovations.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
ASHRAE 90.1	§9.4 Mandatory	Automatic shut-off / occupant sensor controls	Monthly / Quarterly	Monthly / Quarterly	Map to occupancy / vacancy sensor spot-checks and Quarterly cleaning.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
ASHRAE 90.1	§9.4 Mandatory	Daylight-responsive controls	Monthly / Quarterly / Annual	Monthly / Quarterly / Annual	Map to daylight harvesting spot-checks and annual calibration audit.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
ASHRAE 90.1	§9.4 Mandatory	Scheduled / time-of-day controls	Monthly / Semi-Annual	Monthly / Semi-Annual	Map to time-clock review at the start of each season.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
ASHRAE 90.1	§9.4 Exterior	Exterior lighting controls — astronomical time / photocell / curfew	Quarterly / Annual	Quarterly / Annual	Map to exterior controls review and dark-sky / curfew checks.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
ASHRAE 90.1	§9.4 Exterior	Exterior lighting power (LZ0-LZ4)	Annual / Event-driven	Annual / Multi-Year	Map to annual exterior LPD review.	https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/standards-addenda-stand-90-1-2022-energy-standard-for-sites-and-buildings
IES — LIGHTING HANDBOOK / RECOMMENDED PRACTICES / TECHNICAL MEMORANDA						
IES Lighting Handbook (11th Ed.)	Application chapters	Recommended illuminance / uniformity / glare by space type	Quarterly / Annual	Quarterly / Annual	Map to photometric spot-checks and annual illuminance audit.	https://www.ies.org/standards/
IES TM-30	—	Method for Evaluating Light Source Color Rendition	Annual	Annual	Map to annual color-quality audit.	https://www.ies.org/standards/
IES TM-33 / IEEE 1789 / CIE TN 006	—	Temporal Light Modulation (flicker) evaluation	Quarterly / Annual	Quarterly / Annual / Multi-Year	Map to flicker observation and annual TLM measurement.	https://www.ies.org/standards/
IES TM-21 / LM-80	—	LED light source / module life projection	Multi-year	Multi-Year & As-Required	Used to set group-relamping interval.	https://www.ies.org/standards/
ANSI/IES LP-1	—	Lighting Control Systems — Properties, Selection and Specification	Monthly / Quarterly / Semi-Annual	Monthly / Quarterly / Semi-Annual	Map to control-station review, sensor placement, and dimming behavior tasks.	https://www.ies.org/standards/
ANSI/IES LP-16	—	Documenting Control Intent Narrative	Semi-Annual / Annual / Multi-year	Semi-Annual / Annual / Multi-Year	Map to control sequence reviews, retro-commissioning, and as-built updates.	https://www.ies.org/standards/
IES TM-15	—	Outdoor Site-Lighting Performance (BUG ratings, uplight, light trespass)	Quarterly / Annual	Quarterly / Annual	Map to exterior light-trespass / uplight survey.	https://www.ies.org/standards/
NFPA — EMERGENCY, EGRESS, AND STANDBY LIGHTING						
NFPA 101	§7.9 / §7.10	Means of egress illumination and exit signs	Monthly / Annual	Monthly / Annual / Emergency & Egress tab	Map to monthly functional test, annual 90-minute discharge test, and exit-sign condition checks.	https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail/code=101
NFPA 70 (NEC)	Article 700 / 701 / 702	Emergency, legally required standby, and optional standby systems	Monthly / Annual	Monthly / Annual / Emergency & Egress tab	Cross-references for branch-circuit and equipment requirements for emergency lighting.	https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail/code=70
NFPA 110	§8.4	Emergency and Standby Power Systems — testing and maintenance	Monthly / Annual	Emergency & Egress tab	Applies where egress / standby lighting is served by an on-site generator.	https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail/code=110
USGBC LEED v5 — INDOOR ENVIRONMENTAL QUALITY						
LEED v5 EQ	Daylight	Daylight credits (sDA, ASE) and continued performance	Annual / Multi-year	Annual / Multi-Year	Map to annual daylight performance check after façade or shading changes.	https://www.usgbc.org/leed/v5
LEED v5 EQ	Quality Views	Continued occupant access to quality views	Annual	Annual	Map to annual occupant survey and shading reviews.	https://www.usgbc.org/leed/v5
LEED v5 EQ	Interior Lighting	Interior lighting quality and controllability	Quarterly / Annual	Quarterly / Annual	Map to controls review, dimming behavior, and occupant feedback.	https://www.usgbc.org/leed/v5
WELL BUILDING STANDARD — LIGHT CONCEPT						
WELL Light	Visual Lighting Design	Illuminance levels and visual comfort	Quarterly / Annual	Quarterly / Annual	Map to illuminance verification and occupant survey.	https://standard.wellcertified.com/light
WELL Light	Electric Light Glare Control	Glare control performance	Monthly / Quarterly	Monthly / Quarterly	Map to glare observation walks and luminance follow-up.	https://standard.wellcertified.com/light
WELL Light	Circadian Lighting Design / Daylight Modeling	Circadian and daylight strategies	Annual / Multi-year	Annual / Multi-Year	Map to annual daylight reassessment and circadian setpoint review.	https://standard.wellcertified.com/light
OCCUPANT-FACING — COMMON NEGATIVE OBSERVATIONS (SOURCE: IEQ Technical Guide)						
IEQ Source	Common Observation	Space is uncomfortably bright — more illuminance than needed for space type	As observed	Observations Log / Quarterly	Consider dimming, recommissioning, changes to task surfaces and proximity to lighting.	https://www.ies.org/standards/
IEQ Source	Common Observation	Space is too dark — not enough illuminance to complete tasks	As observed	Observations Log / Quarterly	Consider dimming levels, additional supplemental task lighting.	https://www.ies.org/standards/
IEQ Source	Common Observation	Visually uncomfortable / glare — contrast too high vs. background finishes	As observed	Observations Log / Quarterly	Consider dimming levels, shading, and material/finish review (contrast, specularities).	https://www.ies.org/standards/
IEQ Source	Common Observation	Light is inconsistent / lacks uniformity	As observed	Quarterly / Annual	Check design intent for accents/highlights, materials and finishes, maintenance.	https://www.ies.org/standards/
IEQ Source	Common Observation	Controls are not intuitive — switchplate unclear, lacks description of on/off/dimming	As observed	Monthly / Semi-Annual	Engrave / re-label switchplates, educate users, consider automation.	https://www.ies.org/standards/
IEQ Source	Common Observation	Automated controls are not working — daylight, occupancy, vacancy sensors not responding; timed events not deploying	As observed	Monthly / Quarterly / Annual	Integrator or controls manufacturer for site visit; commissioning review with owners.	https://www.ies.org/standards/
IEQ Source	Common Observation	Flicker — perceivable flash / fluctuation in emission	As observed	Quarterly / Annual / Multi-Year	TLM meter assessment; compatibility check (reverse lookup of luminaire ↔ controls).	https://www.ies.org/standards/
IEQ Source	Common Observation	Space is warm — solar heat gain perceivable near windows / fenestration	As observed	Monthly / Semi-Annual	Coordinate with HVAC trends, install shading systems; cross-reference Thermal Comfort checklist.	https://www.ies.org/standards/