

Hospital UV-C Air Disinfection Planning Guide

Sealed-chamber UV-C LED fixtures treat room air continuously at 275 nm while the room stays occupied — no room clearing, no ductwork, no filters. Use this sheet to scope a first phase.

Room priority order

- Emergency department waiting and triage — undiagnosed patients, long dwell times
- Patient rooms — continuous overnight exposure; over-bed units target the breathing zone
- Pre-op, PACU, and recovery bays — immunocompromised and post-anesthesia patients
- Staff break rooms and workstations — unmasked exposure clusters
- Corridors and elevator lobbies — wall sconces need no ceiling grid

Coverage worksheet

- Design target: 4-6 air changes per hour (full room volume every 10-15 minutes)
- Starting point: about one fixture per 100 sq ft of floor area
- Adjust upward for occupancy density and ceilings above 9 ft
- 2x4 and 2x2 troffers reuse existing lay-in grid openings

Occupied-room safety, for infection prevention

- UV-C LEDs are enclosed in a sealed internal chamber
- Germicidal light never contacts skin or eyes; only treated air leaves the fixture
- Operation is continuous, 24/7, with occupants present
- Contrast with UV robots, which require an empty room per cycle

Sealed-chamber UV-C vs. alternatives

- UV-C fixture: inactivates pathogens in air; occupied-room safe; no filters
- HEPA portable: traps particles; floor space and noise; recurring filter changes
- UV robot: surface-focused; empty room only; staff time per room
- Upper-room UVGI: fixture-mounted but requires careful shielding and commissioning

Before phase one, settle

- Phase-one room list and before/after measurement plan
- Headwall fit for over-bed units vs. ceiling troffers
- Fan-speed expectations in sleeping rooms
- Who monitors the maintenance-indicator light, and how often