

Circadian Lighting Layering & Kelvin Audit Guide

Optimizing Melanopic Lux, Retinal ipRGC Receptors, and Evening Melatonin Cascades

1. Color Temperature (Kelvin) & Retinal ipRGC Impact

Time of Day	Recommended Kelvin & Angle	Ocular ipRGC & Circadian Biological Action
Morning (6 AM - 11 AM)	4000K - 5000K (Overhead / Natural Sky)	Stimulates melanopsin in lower retinal ipRGCs; triggers cortisol spike to establish 24-hr biological clock.
Afternoon (12 PM - 5 PM)	3000K - 3500K (Task & Diffused Ambient)	Sustains alert prefrontal attention without excessive ocular fatigue or hyper-arousal.
Evening (6 PM - Bedtime)	2200K - 2700K (Eye-Level Lamps Only)	Eliminates 480nm blue light; permits pineal gland to initiate uninhibited melatonin synthesis.

2. Room-by-Room 3-Tier Evening Lighting Transition Plan

Domestic Zone	The 7:00 PM Lighting Shift	Common Lighting Blunder to Eliminate
Family Living Room	Shut off ceiling pot lights. Turn on 2 warm ceramic table lamps and low floor sconce.	Leaving 4000K overhead downlights blazing until bedtime.
Children's Bedrooms	Switch to amber 2200K nightlight placed on floor under dresser.	Bright white central ceiling fixture on while reading bedtime stories.
Kitchen / Dining	Dim island pendants to 20%; illuminate under-cabinet warm tape strips only.	Spotlight overhead LEDs illuminating dining table like a surgical suite.