

The Circadian Optimization Protocol

A Clinical Review of 480nm Light Exposure and Audio-Entrainment on Cognitive Recovery.

1. Executive Summary

This document outlines the efficacy of the Aurora Hub in professional environments. In a 12-week double-blind study involving 450 corporate executives, participants using the Aurora light-drift technology reported a **22% increase in REM stability** and a **15% reduction in morning cortisol spikes**.

2. The Science of Light-Drift

The core technology focuses on the suppression of melatonin through narrow-band 480nm wavelengths.

- **Morning Phase:** Gradual 30-minute sunrise simulation.
- **Evening Phase:** Shifting the color temperature from 6500K to 1900K to trigger natural sleep onset.

3. Audio-Entrainment & REM Density

Aurora uses ultra-low frequency (ULF) audio pulses to mask environmental noise. This section details how the frequency-based system prevents the "Startle Response," allowing the brain to remain in deep N3 sleep cycles for up to 40 minutes longer than the control group.

4. Hardware Specifications

- **Sensors:** Non-contact UWB (Ultra-Wideband) Radar.
- **Light Output:** 16-million color gamut with specialized blue-depleted night modes.
- **Connectivity:** End-to-end encrypted local processing (No cloud-stored biometric data).