Technical Data Sheet

LUMO ONE Square

Circadian-Effective LED Ceiling Lighting System with Acoustic Function

General Discription

Supply, installation and commissioning of a full-surface, circadian-effective **LUMO ONE Square** LED ceiling lighting system with integrated acoustic absorber.

The system is designed to provide biologically effective lighting for clinical enviroments. It features **Tunable White LED lighting (2700-5600 K)** and an integrated **RGB ambient lighting component** to simulate natural daylight cycles.

The ceiling provides a uniform **Lambertian light distribution** and delivers a **vertical illuminance of 7-2300 lux** at the patient´s eye.

All visible surfaces are smooth, non textured, resistant to disinfectants, halogen-free, sulfur-free, and suitable for clinical use.

Lighting Specifications

Illuminance range	7-1400 Lux
Color temperature range (TW)	2700-5600 K
Color Rendering Index range (TW)	> 90
Color consistency	≤ 2 SDCM
Lifetime	L80B20 according to EN 62722
Light distribution	Lambertian
Glare control according to DIN 12464-1 Healthcare	UGR ≤ 19
Rare LED luminous flux	12.200 lm
Luminaire luminous (incl. diffuser)	9.516 lm
Diffuser light reduction	approx. 22%
System efficancy	≥ 105 lm/W
Flicker performance	SVM < 0,4 PstLM < 1,0
Magnetic alternating fields According to IEC 60601-1-2	minimized
MEDI – Value according to CIE S 026:2018 Clinical compatibility	MEDI LX 850

No interferance with SpO_2 -measurements

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RGB-component natural daylight effects (e.g. sunrise, boost phase)

Circadian Lighting Control

The lighting system shall be controlled via a **DALI DT8 controller (Tunable White + RGB)** providing the following functions:

- **Automatic 24-hour sleep-awake-program** (circadian-effective, evidence-based)
- **Examination lighting**: immadiate access to 1000 lux with correct light spectrum (also available in the event of server failure)
- **Orientation lighting**: 7 Lux, non-awaking
- **RGB-daylight progression effects** (z. B. sunrise, boost phase)
- **Individually adjustable lighting parameters for clinical studies**
- Operation via three conventional push-buttons; tablet control available upon request (for research applications)

The control system shall ensure flicker-free operation and prevent stroboscopic effects during power fluctuations.

Mechanical and Technical Specifications

Type	Width (W)*	Length (L)*	Height (H)*	Weight
LUMO ONE Square	1200 mm	1200 mm	130 mm	25 kg

Installation	Ein- / Aufbausystem
Frame	Pulverbeschichtetes Aluminiumprofil
Diffuser	Transluzente Spanndecke für klinische Einrichtungen (LUXELL) halogenfrei, schwefelfrei, ISO 50001 zertifiziert
Fire classification (diffuser)	B-s2, d0 nach EN 13501-1
Total power	130 VA
AV 230V / power	85 VA
SV 230V / power	45 VA
Heatload	55 W
Drivers and DALI - controllers	2 Stück
Spannung AV	230V
Spannung SV	230V
Protection class	I nach IEC 61140
Circuit class	LS 16A Typ C
Max. ambient temperature	40°C

No textile component

Hygiene Requirements

- All materials resistand to **disinfections**
- Compatible with desinfectants listed by **Robert Koch Institute (RKI)**
- Halogen-free and sulfur-free
- Closed, smooth, easy-to-clean surface
- No textile components

Protection Ratings

- Above the system: **minimum IP50**

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- Below the system: **minimum IP54**

Fire Safety and Certifications

- Complete system passes SBI (Single Burning Item) test
- Diffuser: **B s2,d0**
- Acoustic panel: **B s1,d0**
- Certification according to **DIN 14716 (stretch ceilings)** or applicable material-specific standards
- **Declaration of conformity** required for the complete system

Scope of Supply

- Ceiling lighting system including all LED modules
- Power supplies
- Installation accessories
- Documentation and declarations of conformity

Installation and Commissing

- Installation by **qualified personnel**
- Electrical installation according to**VDE-regulations**
- Calibration oft he circadian lighting control
- Calibration of **individual lux values for clinical studies**
- Handover protocoll incl. **lux measurements at the patients´s eye**
- User training

Clinical Support (on request)

The project may be supported by **a clinical application specialist**:

- Implementation of circadian lighting programs
- Training for nursing and medical staff
- Ensuring correct application in daily clinical practice
- Advisory support for clinical studies and evaluations

Note: All values are for guidance only.

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