



Biuro Naukowo-Techniczne
SIGMA

Laboratory compliant
with ISO 17025

Testing environment
ISO Class 2

Active member of:

Polish Committee
for Standardization
- Technical Committee no 161
for Interiors Air Quality

Polish Committee
for Standardization
- Technical Committee no 317
for Ventilation and Air Conditioning

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QUALIFICATION CERTIFICATE

ISO 14644-14 CLEANROOM SUITABILITY TEST: PARTICLE EMISSION TEST

Product tested: Luminaire SIF 60 LED
Client name: TEP Ex d.o.o.
Customer address: Medarska 69, 10000 Zagreb, CROATIA



Test results:

When operated under the test conditions specified below **SIF 60 LED** is suitable for use in cleanrooms complying with the air purity specification ISO Class 3 - 9 according to ISO 14644-1:2015.

Test method: ISO 14644-14:2025

Test equipment: Laser Particle Counter TSI 9110; s/n: 91101102001

Particle size channels: $\geq 0.1\mu\text{m}$; $\geq 0.2\mu\text{m}$; $\geq 0.3\mu\text{m}$; $\geq 0.5\mu\text{m}$; $\geq 1.0\mu\text{m}$; $5.0\mu\text{m}$

Test environment:

- Cleanroom air cleanliness: ISO Class 2 (according to ISO 14644-1:2015)
- Airflow velocity and pattern: $0.45\text{m/s} \pm 20\%$; vertical laminar flow
- Temperature and relative humidity: $21^\circ\text{C} \pm 2^\circ\text{C}$; $50\% \pm 20\%$.

Stress conditions applied:

- Structure-borne noise: 50Hz
- Vibration; Velocity; Acceleration 0.8mm ; 16.8mm/s ; 1.6m/s^2

Detailed test results can be found in the BNT SIGMA test report no. E-2651-1.

Laboratory: BNT SIGMA, Cleanroom Technology Section
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