

# QUANTIFICATION OF LIGHT POLLUTION IN URBAN REGION OF BELGRADE

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## PRISMA PROJECT

Urban Observatory of Belgrade – UrbObsBel No. 6775



Public Observatory in Belgrade



SQM-LU device

**Introduction:** Light pollution represents one of the consequences of human activity and it reaches its maximum in urban regions. It is responsible for reduced visibility of celestial bodies as well as for the series of biological effects on all life forms. Quantification of light pollution is important for better understanding of its environmental influences and possible reduction.

**Aim:** The goal of this research was to determine the value of light pollution from the urban center of Belgrade.

**Methods:** Public Observatory of the Astronomical Society „Rudjer Boskovic“ in Kalemegdan fortress was the location from which the light pollution values were assessed. For this purpose, the Unihedron’s Sky Quality Meter-LU was used. Values were determined for zenith region at local midnight during the one-month period on clear night sky.

**Results:** The obtained measurements revealed that the average value of sky brightness in urban Belgrade area is  $15.98 \pm 0.62$  mag/arcsec<sup>2</sup>.

**Conclusions:** Based on our research, the light pollution level is considerably high at the location of measurement, however usual for the dense metropolitan area. The measurements should be continuously performed in order to monitor the light pollution levels evolution in future.

**Key words:** Light pollution; Sky Quality Meter-LU; Public Observatory; Belgrade