FIELD NOTES 02 / CALCULATIONS & PERFORMANCE

Beyond lux: reviewing a lighting calculation

Read illuminance, uniformity and model assumptions together before approving a scheme.



An average illuminance figure is only one part of a lighting report. A useful review asks where the light is needed, how consistently it reaches that area, whether the model represents the intended installation, and what occupants will see. A high average alone does not demonstrate a comfortable or compliant result.

Define the task and calculation area

Identify the room activity and the relevant task plane, including its height, extent and orientation. Separate task areas from circulation and background areas where appropriate. Record the governing project standard and edition rather than applying one generic lux target to every room. The SLL Code provides a framework for lighting criteria; the applicable requirements still need to be selected for the actual task. [1]

Check the inputs before the colours

Confirm geometry, mounting heights, photometric files, output settings and surface reflectances. Use documented finish assumptions rather than making the walls artificially bright to improve the result. Check that a substituted luminaire has the same relevant distribution and output, not merely the same wattage.

Distinguish initial and maintained performance

The maintenance factor accounts for the expected reduction in useful light over time. Record its basis and maintenance plan, rather than using a convenient default. A report should state whether its results are initial or maintained and avoid applying the factor twice. Glare needs a separate assessment; a false-colour illuminance image cannot prove visual comfort. [2]

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Read these values together

Measure	Meaning	Review action
Eavg (lx)	Average illuminance on the defined grid	Compare with the requirement for that specific area.
Emin (lx)	Lowest calculated point on that grid	Inspect its location and relevance to the task.
U0 = Emin / Eavg	Minimum-to-average uniformity	Keep the same grid and area when comparing options.
Maintenance factor	Allowance for light loss over time	Document assumptions and the cleaning/replacement plan.

Worked example: the average passes, the uniformity fails

Assume a project brief requires 500 lx maintained average and U0 of 0.60 on a specified task grid. A calculation gives Eavg = 520 lx and Emin = 260 lx. U0 = 260 / 520 = 0.50. The average meets this example brief, but uniformity does not. Review spacing, optics and the darkest task locations before increasing every luminaire's output. These figures are illustrative assumptions, not a universal room standard.

Project checklist

- Confirm the task classification, criteria and calculation-plane height.

- Check the exact photometric file and selected luminaire output.

- Review reflectances, maintenance assumptions and model obstructions.

- Assess glare and visual appearance separately from illuminance.

- Retain the calculation model and compare site readings on the agreed grid.

For handover measurements, record meter identification, daylight conditions, scene settings and the measurement plane. Differences between a calculation and site readings should be investigated against the actual installation and measurement conditions, not hidden by changing the original report assumptions.

Sources & further reading

[1] CIBSE, SLL Code for Lighting (2022): publication overview

[2] CIBSE, SLL Free Downloads: maintenance and glare factfiles

Sources checked 2 November 2026. Original practical guidance by OMEGALUX Studio; examples are illustrative. Confirm project criteria against the governing standards and approved product information.