# EN 12464 Report

## Audit Header

| | |
|---|---|
| Project | ugr_luminous_area_pack |
| Project Revision | 5 |
| Job ID | job_direct_ugr |
| Job Hash | 833b1d8d7aa3ad36bbc75984e0621eb43430aa167ccc72fe33974c2477554e94 |
| Solver Version | 0.2.0 |
| Git Commit | unknown |
| Photometry Hashes | {'asset_large': '7c0398abc7dd20838796b6492e6c39ddc262d125c58b78250c086081bd934d2c', 'ass |
| Coordinate Convention | Local luminaire frame: +Z up, nadir is -Z; C=0 toward +X, C=90 toward +Y |
| Units | {'angles': 'deg', 'illuminance': 'lux', 'length': 'm', 'luminous_flux': 'lm', 'luminous_intensity': 'cd'} |

## Inputs

| | |
|---|---|
| Room | UGR Area Room |
| Dimensions | 6.0 x 8.0 x 3.0 m |
| Floor reflectance | 0.2 |
| Wall reflectance | 0.5 |
| Ceiling reflectance | 0.7 |

## Luminaire Schedule

| | Rotation/Aim | LLF |
|---|---|---|
| | {'type': 'euler_zyx', 'euler_deg': (0.0, 0.0, 0.0), 'aim': None, 'up': None, 'matrix': None} | 1.0 |
| | {'type': 'euler_zyx', 'euler_deg': (0.0, 0.0, 0.0), 'aim': None, 'up': None, 'matrix': None} | 1.0 |

## Per-Grid Statistics

| | mean | max |
|---|---|---|
| | 110.79185922717022 | 416.95181 |

## Calculation Tables

Grid Tables

| | Area | Min |
|---|---|---|
| | None | 20.310884 |

## Zone Compliance Tables

No zone compliance data available.

## Worst-Case Summary

| | |
|---|---|
| global_worst_min_lux | 20.310884570539354 |
| global_worst_uniformity_ratio | 0.18332470194306824 |
| global_highest_ugr | 0.0 |

## Compliance

| | |
|---|---|
| pass_fail_reasons | [] |

## UGR Summary

No UGR results available for this job.

## Assumptions

| | |
|---|---|
| A1 | Coordinate convention: local luminaire frame +Z up, nadir -Z; Type C C=0 toward +X, C=90 toward |
| A2 | Supported photometric types: Type C only. |
| A3 | TILT ordering: base photometry interpolation -> TILT factor in local gamma frame -> luminaire/world |
| A4 | TILT factor lookup uses gamma + luminaire tilt_deg offset; out-of-range angles are clamped. |
| A5 | Direct calculation excludes geometry occlusion unless enabled. |
| A6 | Luminaire tilt is applied when photometry includes tilt data; otherwise tilt has no effect. |
| A7 | Direct solver uses no inter-reflection reflectance model (direct-only irradiance). |

| | |
|---|---|
| M1 | Coordinate convention: local luminaire frame +Z up, nadir -Z; Type C C=0 toward +X, C=90 toward |
| M2 | Supported photometric types: Type C only. |
| M3 | TILT ordering: base photometry interpolation -> TILT factor in local gamma frame -> luminaire/world |
| M4 | TILT factor lookup uses gamma + luminaire tilt_deg offset; out-of-range angles are clamped. |
| M5 | Direct calculation excludes geometry occlusion unless enabled. |
| M6 | Luminaire tilt is applied when photometry includes tilt data; otherwise tilt has no effect. |
| M7 | Direct solver uses no inter-reflection reflectance model (direct-only irradiance). |
| M8 | TILT applied: no |
| M9 | TILT application angle: gamma (vertical angle) |
| M10 | Units contract: {'angles': 'deg', 'illuminance': 'lux', 'length': 'm', 'luminous_flux': 'lm', 'luminous_intensit |
| M11 | Occlusion mode: disabled |
| M12 | Supported photometric types: Type C only. |
| M13 | Backend version: cpu@0.2.0 |

## Photometry Warnings

| | | |
|---|---|---|
| | asset/luminaire | message |
| | asset_large | Missing recommended [MANUFAC] keyword. |
| | asset_large | Missing recommended [LUMCAT] keyword. |
| | asset_small | Missing recommended [MANUFAC] keyword. |
| | asset_small | Missing recommended [LUMCAT] keyword. |
| | lum_large | Luminaire lum_large has calc points in potential near-fi |

## Unsupported Features

| | |
|---|---|
| U1 | Penumbra/area-light soft shadowing is not implemented in CPU direct backend. |