New Features in DIVA 3.0

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DIVA 3.0.0.1 Alpha Release

• Released on 4 September 2014 as an alpha release via a blog post on diva4rhino.com.

• Will probably remain in beta after today for 2-3 more months after which the normal licensing process will kick in.

• As always, download from the Solemma website.

• Documentation isn’t updated yet.

• So, what is it?

Screencapture of the DIVA release notes.
IES-LM-83 sDA and ASE Calculations Following [Most] of the Rules

- **New standards** resulted in a new DIVA feature. We’ll discuss this further in a roundtable this afternoon.

- Also the best way to achieve the daylighting credit in LEEDv4. You get an extra point.

- Very similar, but different, to what DIVA was already doing with Climate-Based daylighting metrics.

sDA$_{300\text{lux}}$ and ASE$_{1000\text{lux}, 250\text{h}}$ display in Boston, MA.
sDA\textsubscript{300lx,50\%}: What’s different from Daylight Autonomy?

- New control system: when more than 2\% of floor area in a space is hit by direct sunlight, window shades close.
- Currently the Daysim conceptual shading system is used for this in DIVA.
- Users can define infinite numbers of spaces / rooms / control groups. This makes whole-building analysis for LEEDv4 easily possible.
- Standard schedule and illuminance goals for simulation.
ASE_{1000lx,250h} : Hours of Incident Direct Sunlight

- Idea is to check the frequency and spatial distribution of direct sunlight in your space.

- Standard says not to pass 250h in a standard 3650h year -- 6.85% of occupied hours.

ASE_{1000lx,250h} display and a falsecolor temporal map of a single data point.
Electric Lighting in DIVA

• Now possible to load IES files directly into DIVA. Put in for my lighting course at the Rhode Island School of Design earlier this year.
• All of the Radiance ies2rad commands, proper units and xform commands handled transparently in the background.
• Move, rotate, aim and duplicate the virtual luminaires in Rhino.
• This feature is ‘very alpha’ but works!
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Some very quick results.
Mean Illuminance = 243.1 lux

Students: Shou Jie Eng, Rami Hammour, and Nicholas Cote
Student Examples

Students: Cheng Zeng, Jianshi Wu, Feijiao Huo, and Jiali Xuan
Students: Taylor Haywood, Natalie Kruch, Malcolm Rio, and Nathaniel Vice
Student Examples

Students: Kimin Kang, Jino Kim, and Hyun Jin Yun
RISD Solar Decathlon TechStyle Haus

Students: Claire Watson and the 2014 RISD Solar Decathlon Team
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In the Pipeline for DIVA 3.X

- Many updates to the electric lighting module.
  - Ability to view IES data in a polar plot within DIVA.
  - Edit the length of linear fixtures.
  - Allow point sources.
  - Dimming controls.
  - Management of a fixture library.

- IES-LM-83 sDA improvements.
  - Ability to a material or geometry-based shading device.
  - Proper IES-LM-83 default reflectances.
  - “-dt 0” in Daysim calculations.

- Bug fixes as usual.
Thank you.

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