REAL
IES

Real IES 3
User Manual

latest update Real IES 3.1 - 10/07/2019

Contents

System Requirements

Real IES 3 runs on MacOS (from 10.12) and Windows 7 SP1+, Graphics card with DX10 (SM 4.0) capabilities and a CPU with SSE2 instruction set support.

Getting Started

About Real IES

Since the first release in 2015 Real IES allows to create and edit photometric files easily and in a few seconds. Real IES generates type-C .ies files compatible with a wide range of 3D rendering software, both offline and realtime.

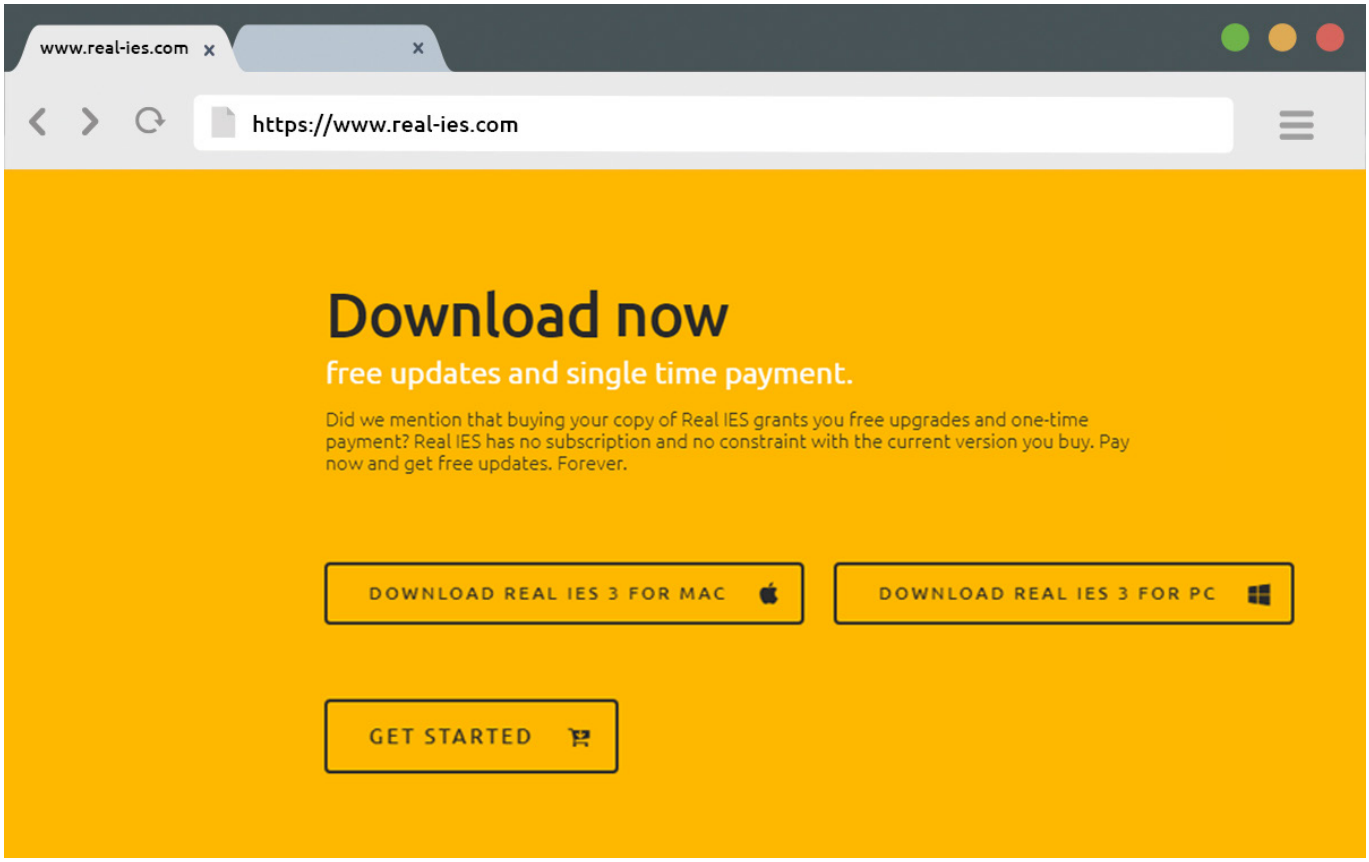
Real IES has been developed by CGI artists for CGI artists, in fact, we do use this application primarily for our pre-viz necessities. Therefore, although it may be possible to use Real IES for lighting design, this is not the primarily scope of the software, while computer graphics is.

Download Real IES

You can download the latest release of Real HDR directly from www.real-ies.com/download/Real_IES_latest.zip. and www.real-ies.com/download/Real_IES_latest_mac.zip

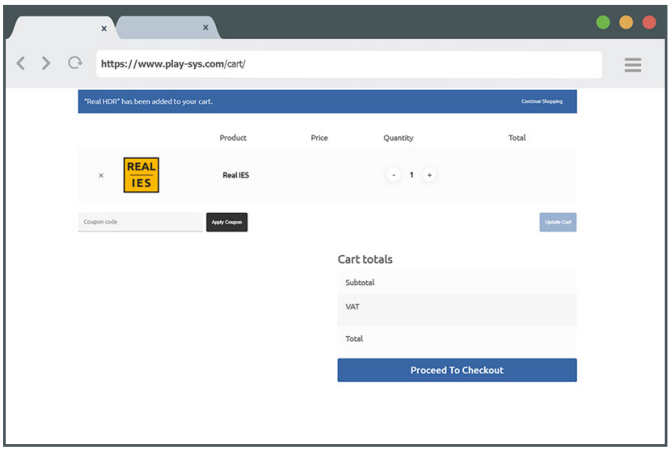
We strongly suggest not to download installers of Real IES online elsewhere.

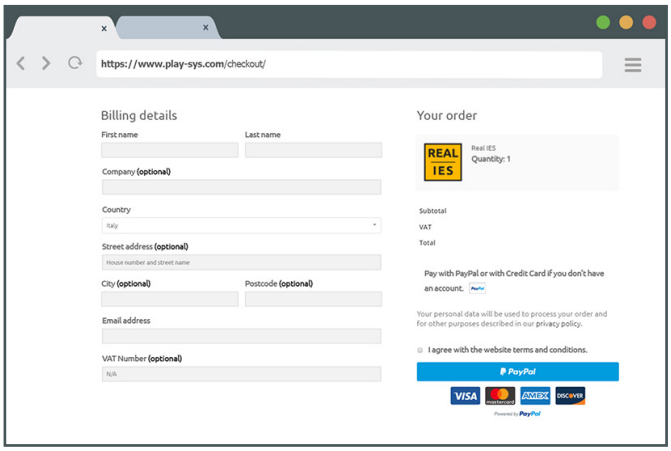
If you encounter a crack, serial, regkey or keygen version of Real HDR please report these URL's and/or download link to support@renderacademy.com



How to purchase a license

You can purchase Real IES directly from our e-store and insert during the checkout your data necessary for the invoice and license activation.



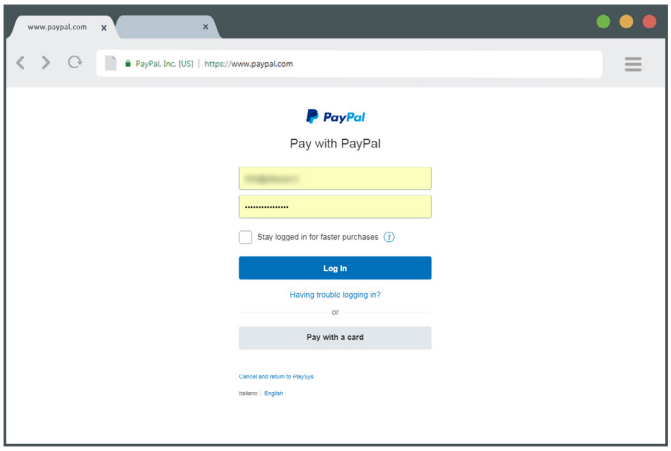


All transactions for Real IES are managed directly by PayPal on their secure servers. You can buy your license with your PayPal found, use a credit card or associate a bank account to it. Please note that Real IES never obtains nor stores sensible data about your payments, credit card or private information.

If you don't have a PayPal account and you don't want to create it or if you simply prefer to pay with credit card you can do so.

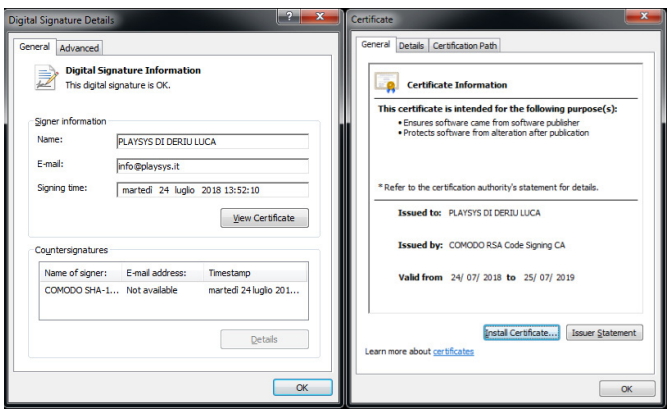
At the moment of writing this manual, PayPal also accepts Visa, MasterCard, Maestro, American Express, Discover and Carte Aurore in their secure payment system.

Also, in this case, no information will be sent to us.



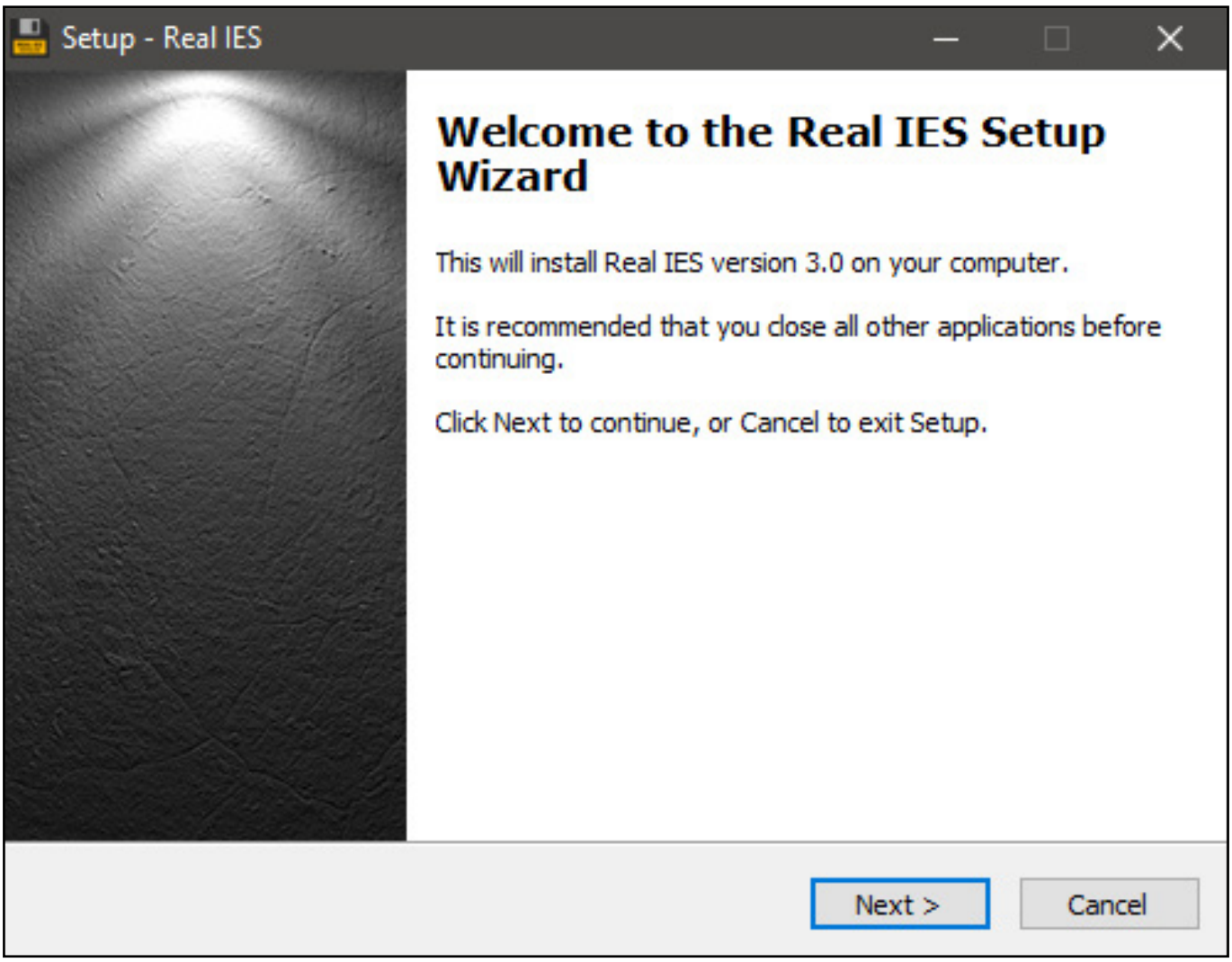
Install Real IES on Windows

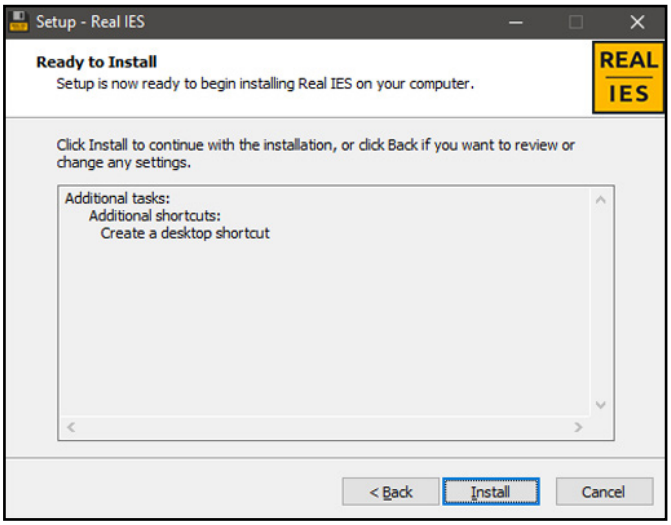
Once you download the archive from our website you have to decompress it in a temporary location, such as your desktop, to access the **Install Real IES.exe**

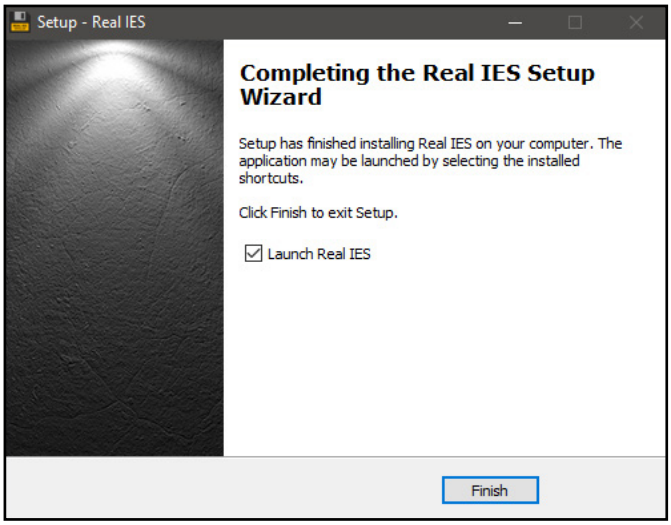


Real IES software and Real IES Installer are digitally signed with a valid certificate. If you want to check it to verify the authenticity of the downloaded program you need to right click on the **Install Real IES.exe** icon and open the **Properties** window.
Once opened, navigate to the **Digital Signatures** tab, select the signature from the list and click on **Details**. You can inspect further the certificate in the new windows.

Double click on Install Real IES to start the usual process that will take care of copying the proper files in your computer's Hard Drive and create a desktop icon.



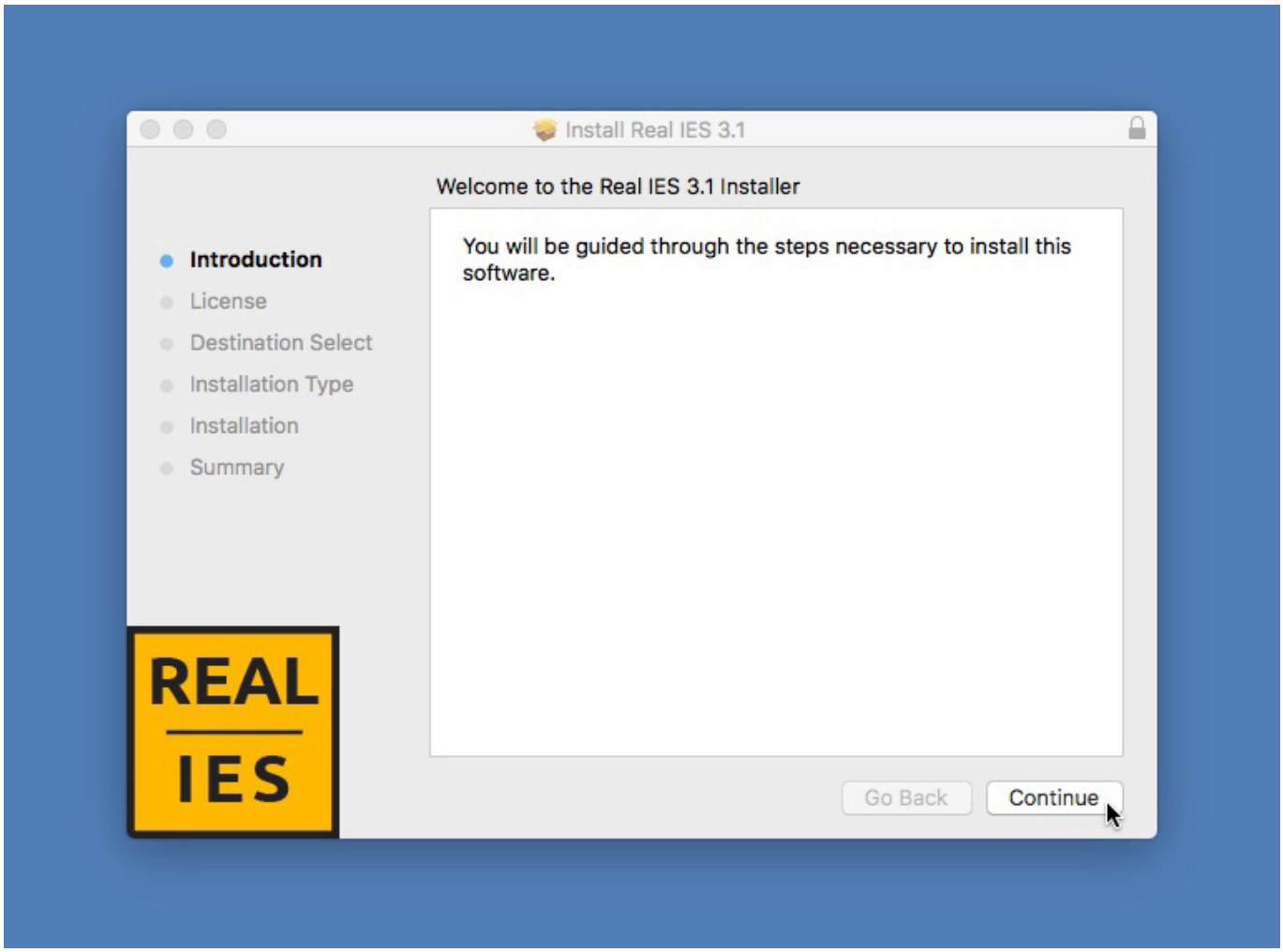


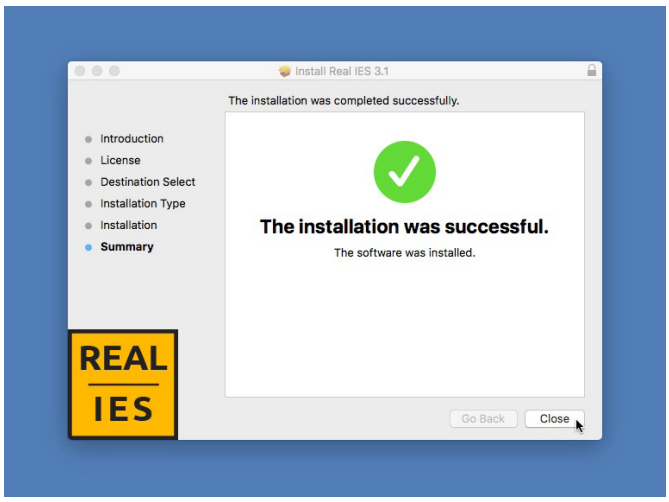


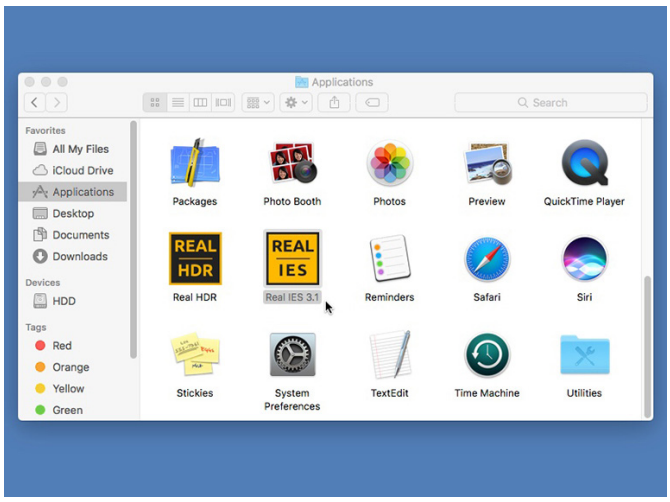
> *Our installer is made possible thanks to Inno Setup developed and maintained by Jordan Russell and Martijn Laan.*

Install Real IES on MacOS

Once you download the archive from our website, double click on **Install Real IES.pkg** to start the usual process that will take care of placing the proper files in your computer's Hard Drive and create an icon in your Applications folder.



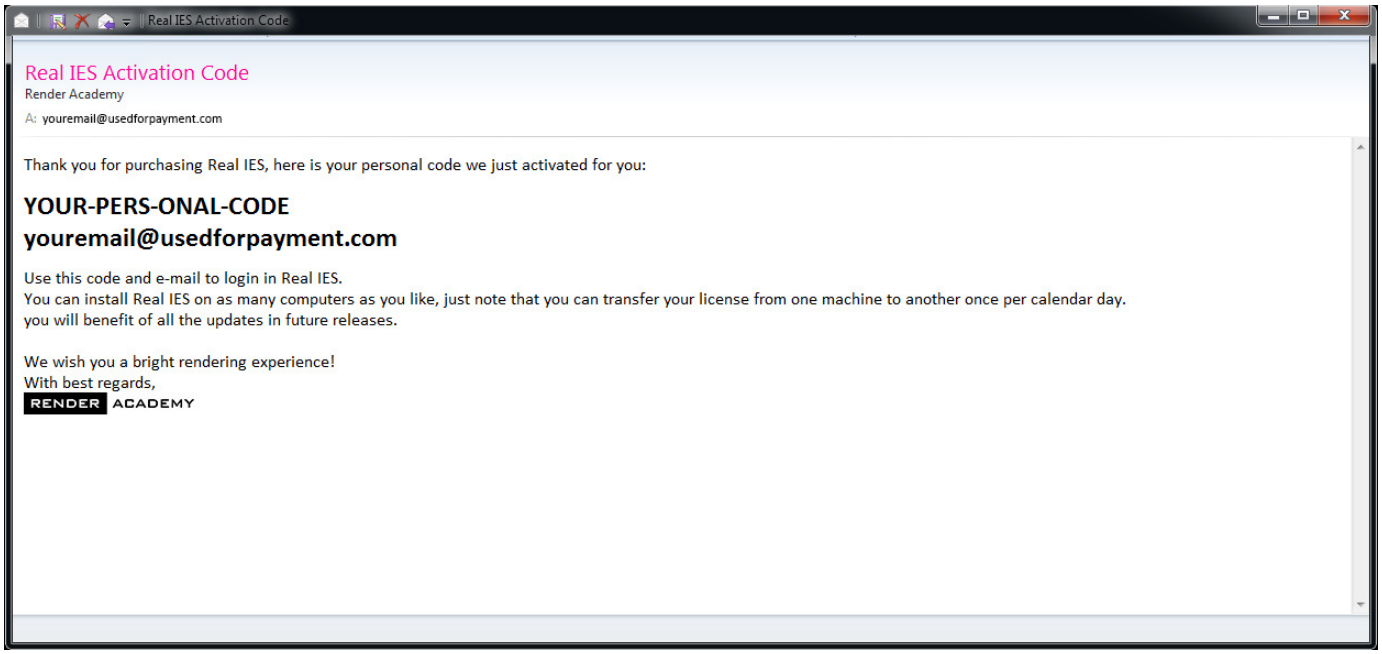




Activate your license

After your successful transaction on PayPal secure server, we'll receive a notification. Please give us some time to confirm it and activate your account. Real IES uses a remote activation system that requires a final approval by our support team.

Get your personal request code that will be sent to you via the email address you used to process the payment.



We have our own licensing system that takes care of your purchase. With one license you can use your copy of Real IES everywhere and activate it on one machine per calendar day.

Migrate from Real IES 2 to Real IES 3

Those who own a copy for Real IES 2 are eligible to free upgrade of their license to Real IES 3. The codes and all necessary instructions will be sent out to the email address used for the purchase and first activation.
If you did not receive your new activation code, please, first check your spam folder and contact us on support@renderacademy.com .

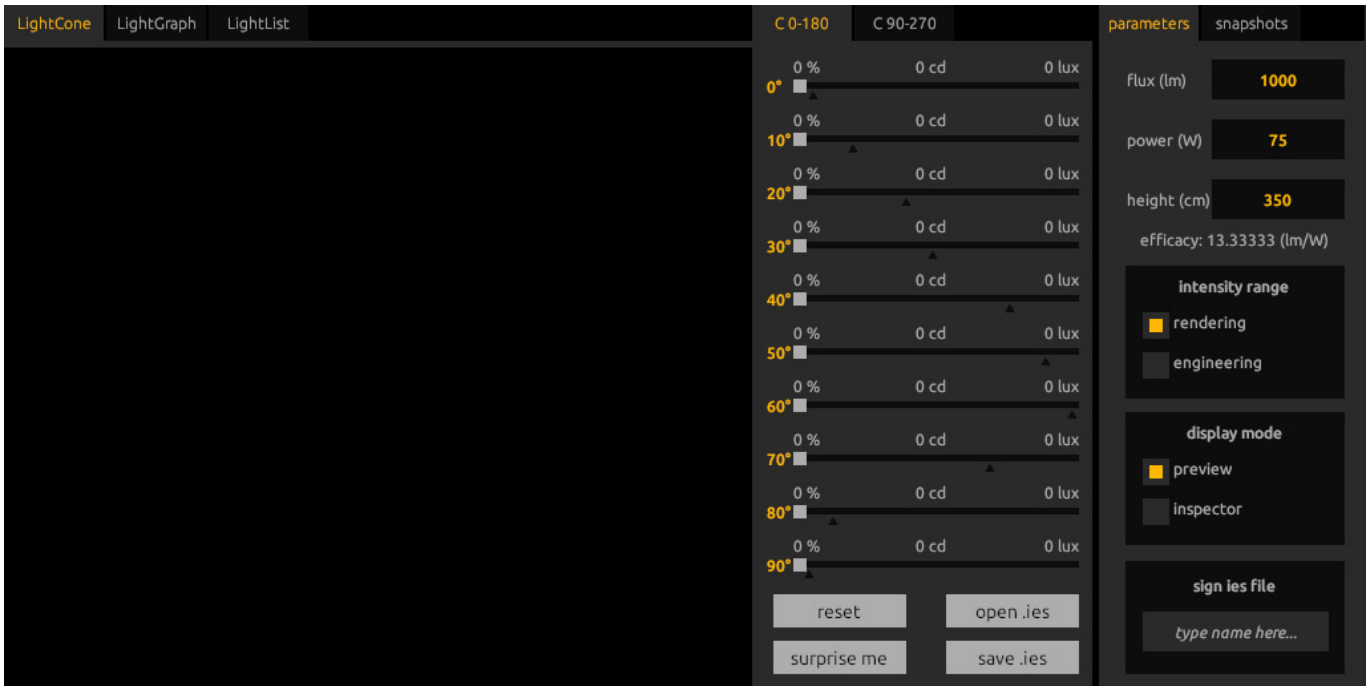
> Should you want to update your email address, drop us a line at support@renderacademy.com

User Interface

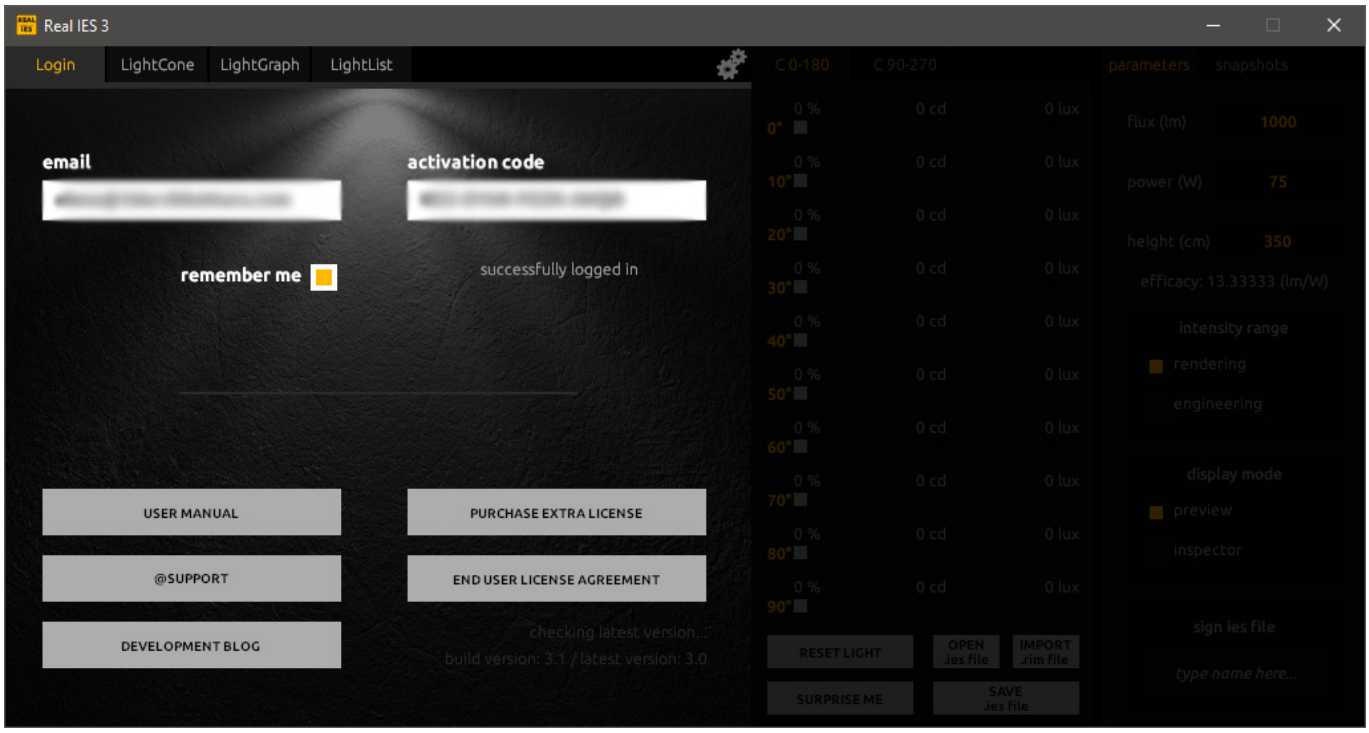
Since the first releases Real IES offers pretty much intuitive user interface that allows to generate an .ies file in less than 30 seconds.

For Real IES 3 with some new features added, we opted for a slight redesign of UI and a general usability improvements.

You can find the preview area on the left and the settings panels on the right side of the screen.

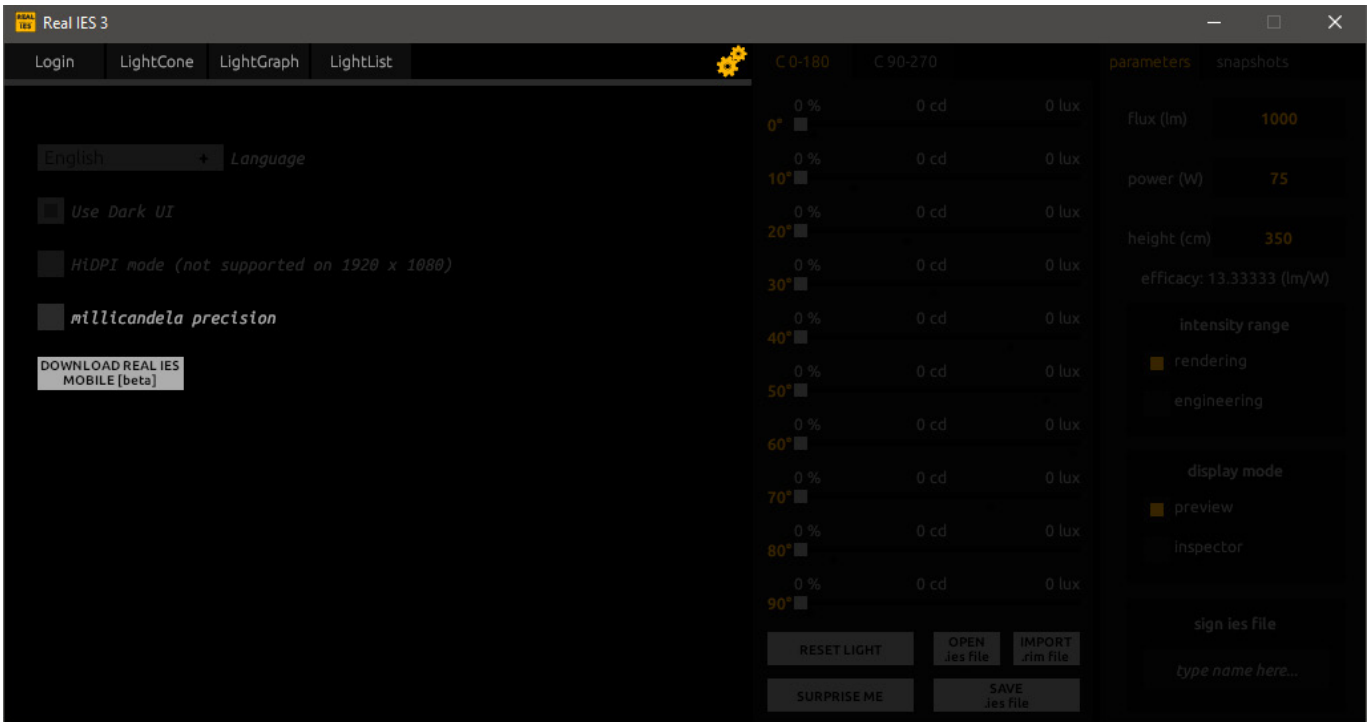


Since Real IES 3.1 update the initial login screen has been moved to the main UI and is accessible in any time should you need to check the user manual or a development blog.



Options Panel

From the upper part of the screen, you can access the Options Panel by clicking the icon in the right corner to customize the software settings.



HiDPI mode

This option is available only for Retina and other HiDPI displays. By enabling it you can increase the resolution of the Real IES user interface and save it as your user preferences.

millicandela precision

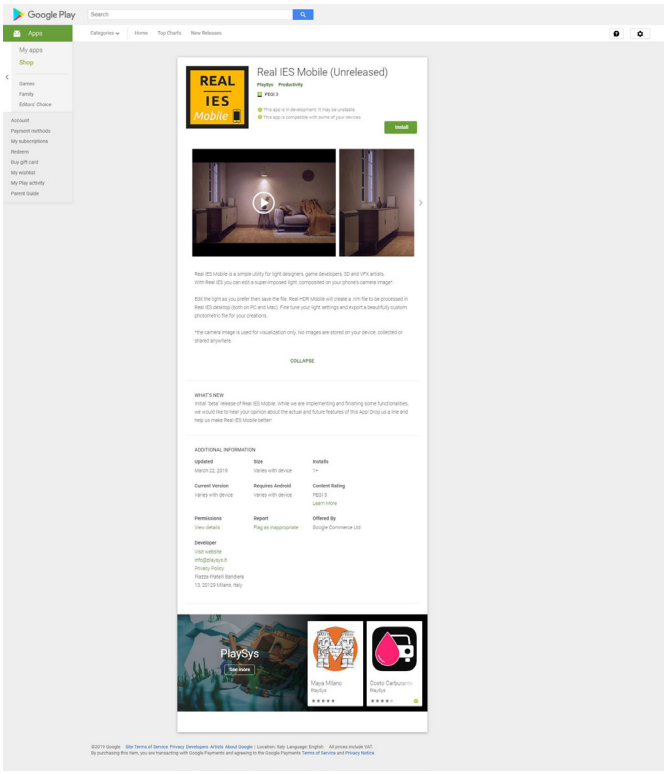
By default the manual input of the slider values is rounded off to one decimal digit, although should you require to work with the more precise intensity parameters you can activate the mcd precision option and input the numbers with three decimal digits.

Real IES Mobile

Real IES Mobile companion application is released as a public beta for android smartphones.

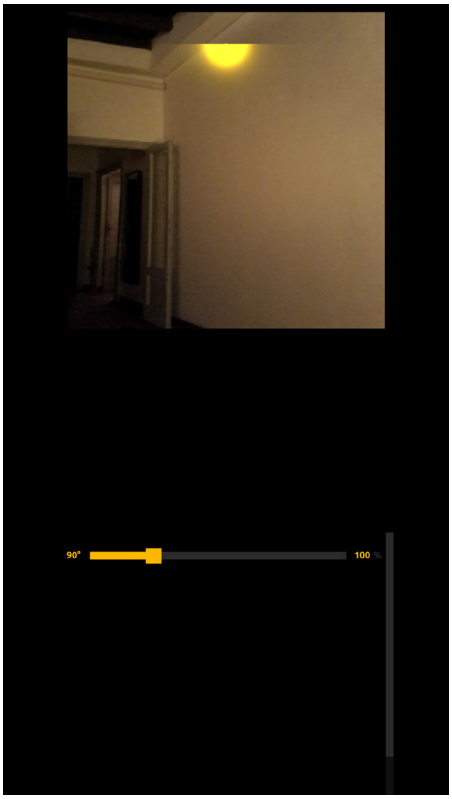
This mobile version of Real IES allows to overlay a simplified .ies light above the mobile's camera image.

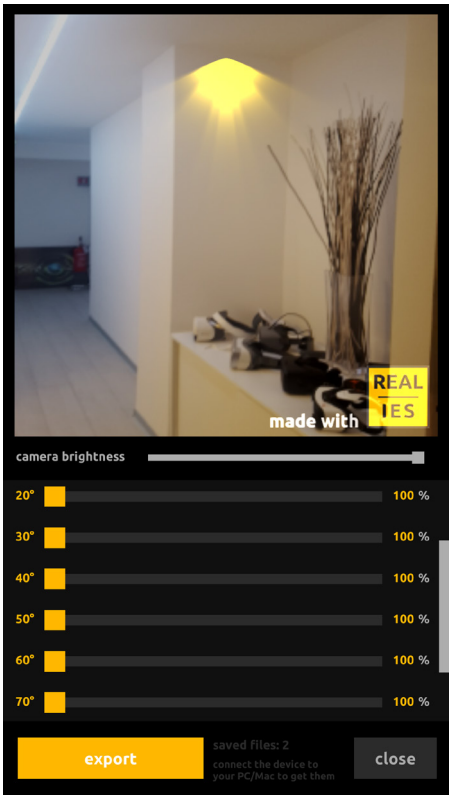
This way you can imitate a real light that you want to transpose in 3D (or you can use the tool to see how a certain light may fit in your interior) and then fine tune it in the desktop version or Real IES.

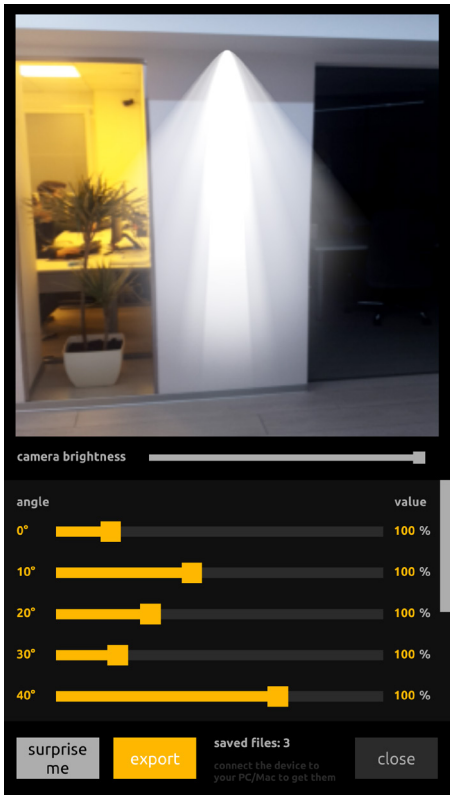


How to use Real IES Mobile

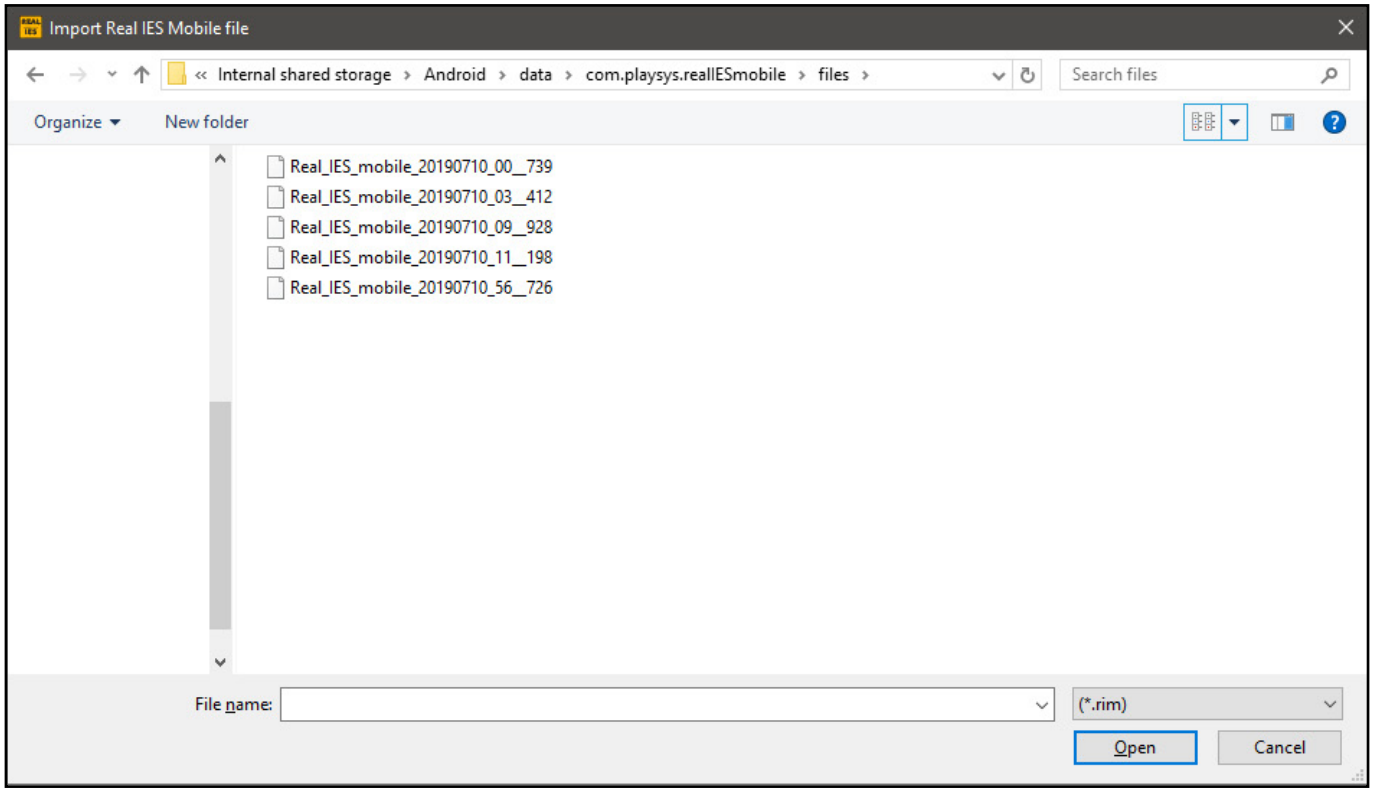
- start the app and use the integrated (auto-focusing) camera to frame your walls
- craft a beautiful and simplified photometric light using the sliders (or find inspiration through my usual surprise me button)







- export the file in .rim; this proprietary file format of Real IES is ultra optimized for mobile devices
- connect your mobile device to your desktop computer and click the IMPORT .RIM FILE button
- navigate to the folder where the device saves the files (at the moment of writing is the following: *Android/Data/com.playsys.realIESmobile/files*)

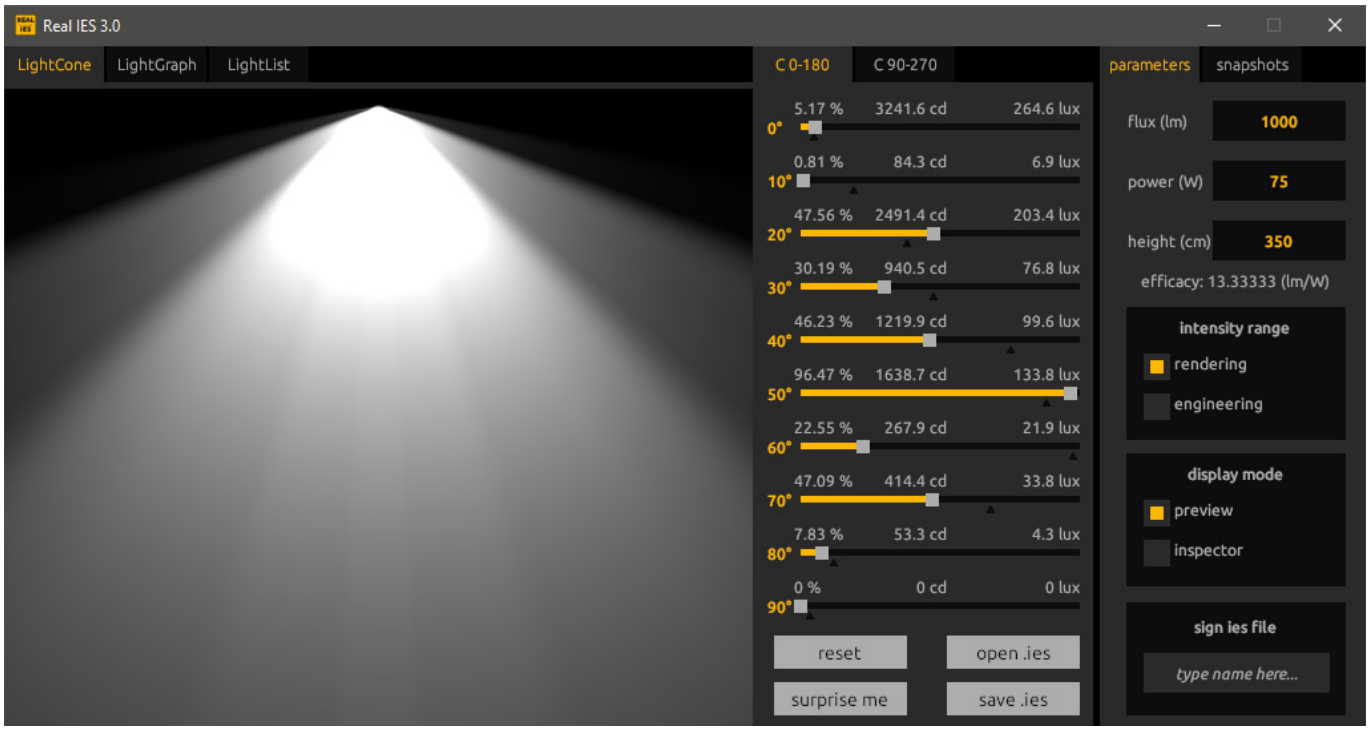


- select the .rim files you like; for your convenience, there are two files per each light: a .rim and a .png with a visual preview.
- open the .rim file with Real IES 3 both on PC or Mac
- edit and improve your light, export the .ies file and proceed in your favorite rendering software

Preview Area

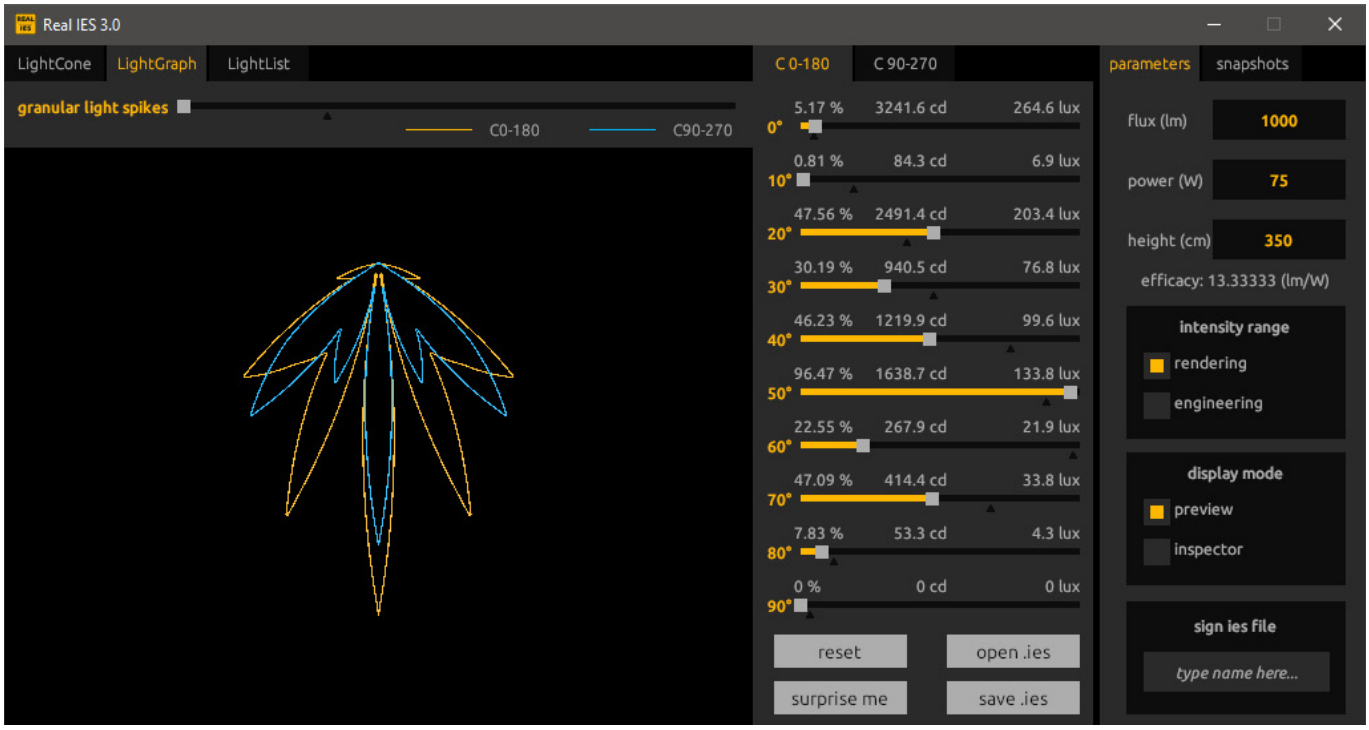
LightCone

The LightCone tab represents the approximated, yet realistic shape and intensity of the photometric light in question.
It is directly connected to the C-plane that is being edited, therefore for asymmetric light cones with different intensity values for C0 and C90 planes you will see two LightCone previews.



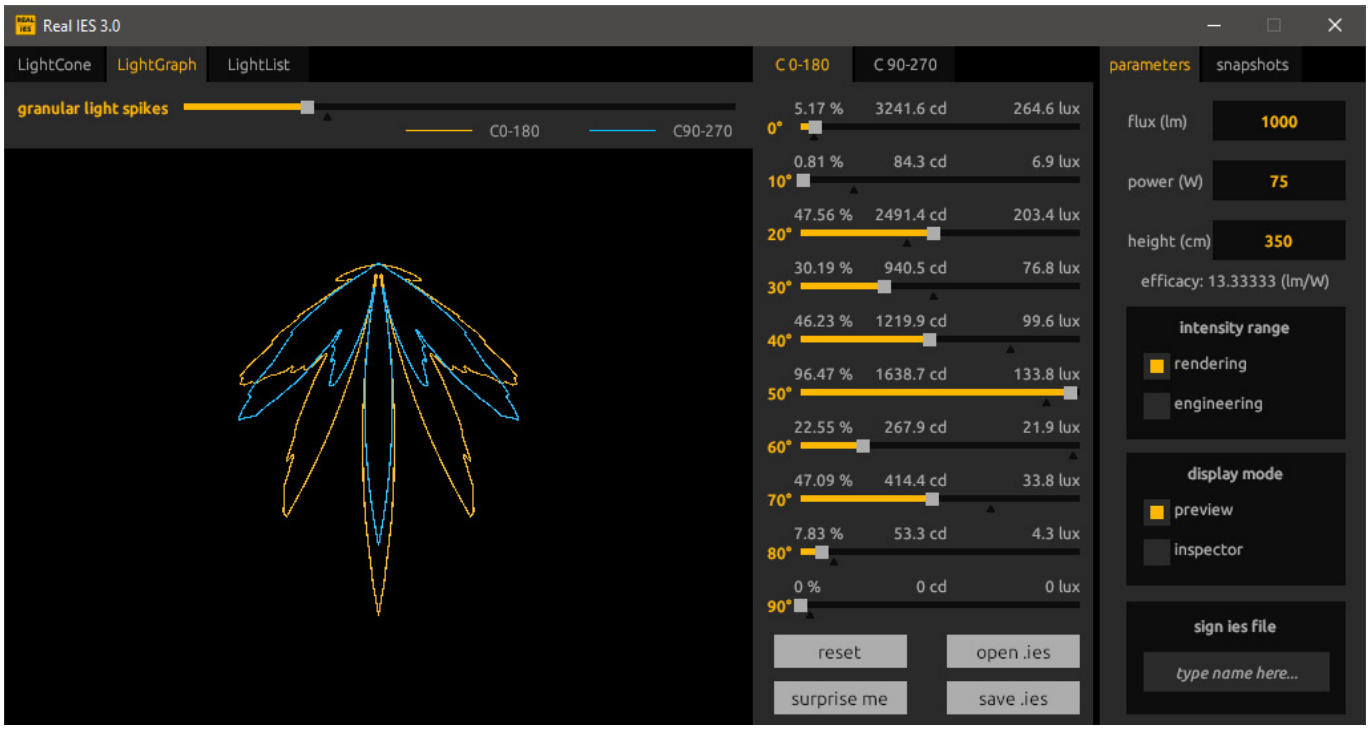
LightGraph

The LightGraph tab offers a proportional photometric polar diagram of the photometric light in question. The yellow color of the line corresponds to C0-180 plane, while the blue one represents the C90-270 plane.



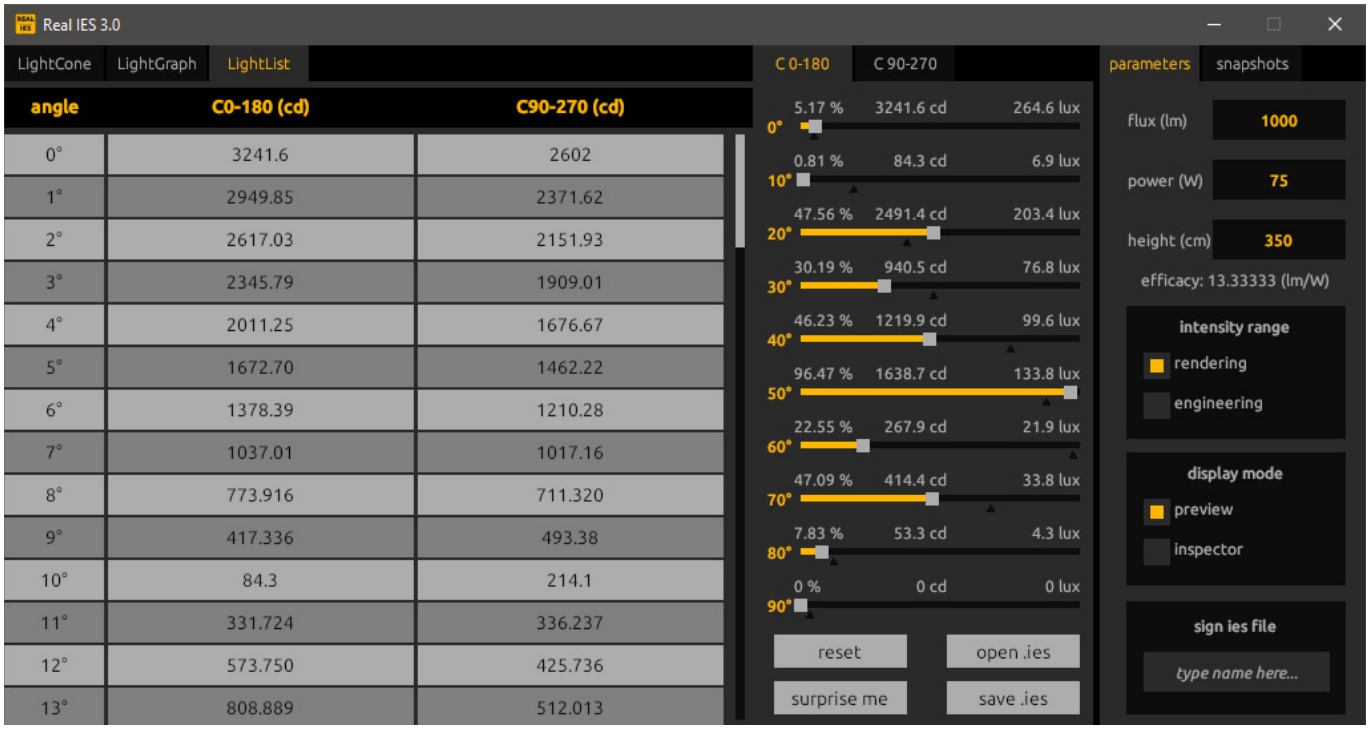
Granular Light Spikes

The LightSpikes slider on the top of the LightGraph tab allows you to manipulate the intensity values of the angles “between the sliders”. This way you can create more creative photometric lights with sharper borders inside the light cone.
The bigger is the position of the slider, the stronger is the random interpolation of the angles. In the most cases we recommend to work in the first third of the slider (as you see on the marked range), although greater values can bring unexpected artistic results.



LightList

In the LightList tab you can see the exact intensity values for all the angles both for C0-180 and C90-270 photometric planes.



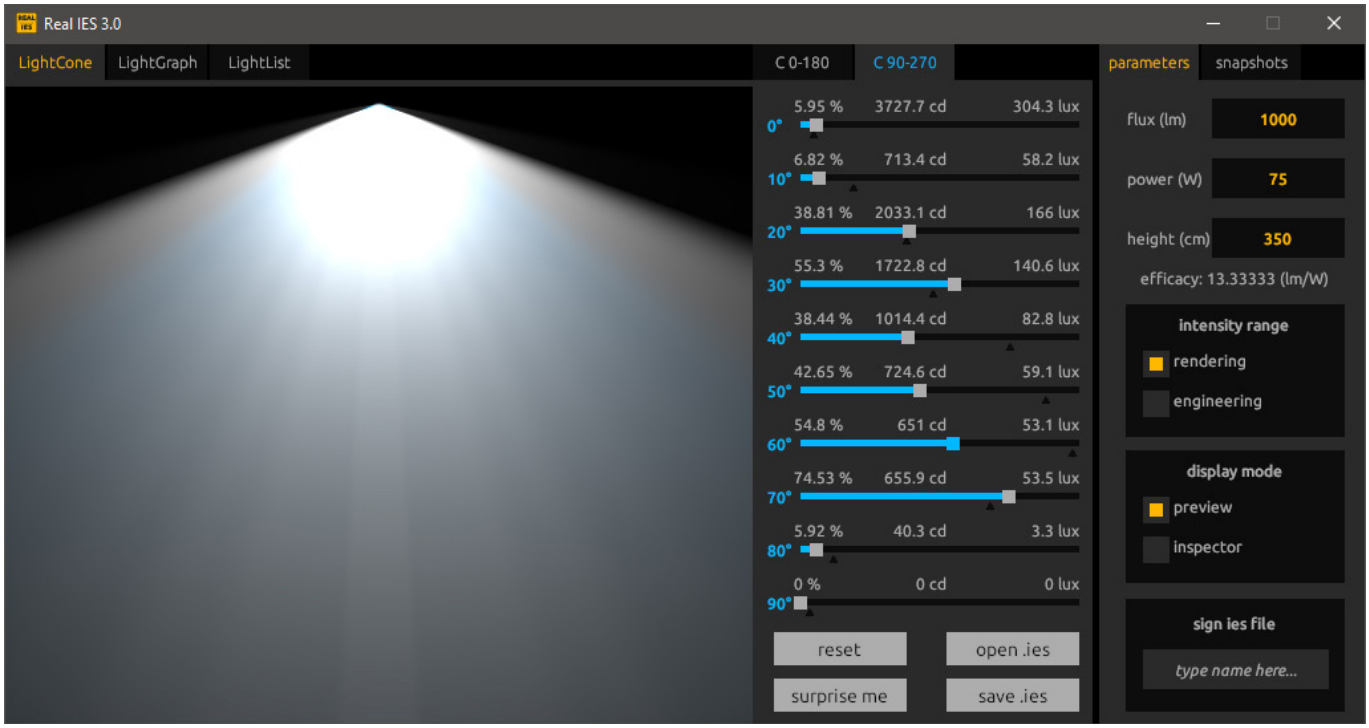
Sliders Panel

Create a light

Manipulate the sliders on the right panel to adjust the luminous intensity for every angle.

Parameters of each slider are affecting the intensity of a certain light cone, that provides you immediate visual feedback on your actions in the viewport on the left. The light cone corresponding to the selected slider is highlighted in orange color for C0 plane and in blue for C90.

With Real IES 3 you can now create asymetric lights by adjusting separately the intensities for C0-180 and C90-270 planes.



> Each slider has a dark grey triangle mark indicating the maximum range we consider recommended for general CGI purposes. Of course if you wish to imitate a particular lighting fixture or situation, you can work in all the range possible from the point of view of physics.

Above each slider you can find the data about corresponding angle: the illumimace (lux), luminous intensity (cd) and the percentage of the slider value.

Starting from Real IES 3 you can not just manipulate the selected slider but also input manually the percentage and the intensity values.

Surprise me button

For creative experiments Real IES can generate practically unlimited amount of random photometric files. Use them for your inspiration.

Reset button

The Reset button allows to create a clean scene bringing all the sliders' values for both planes to zero. If you have inserted the custom parameters for your lighting fixture, such as power, height or luminous flux, these will remain untouched.

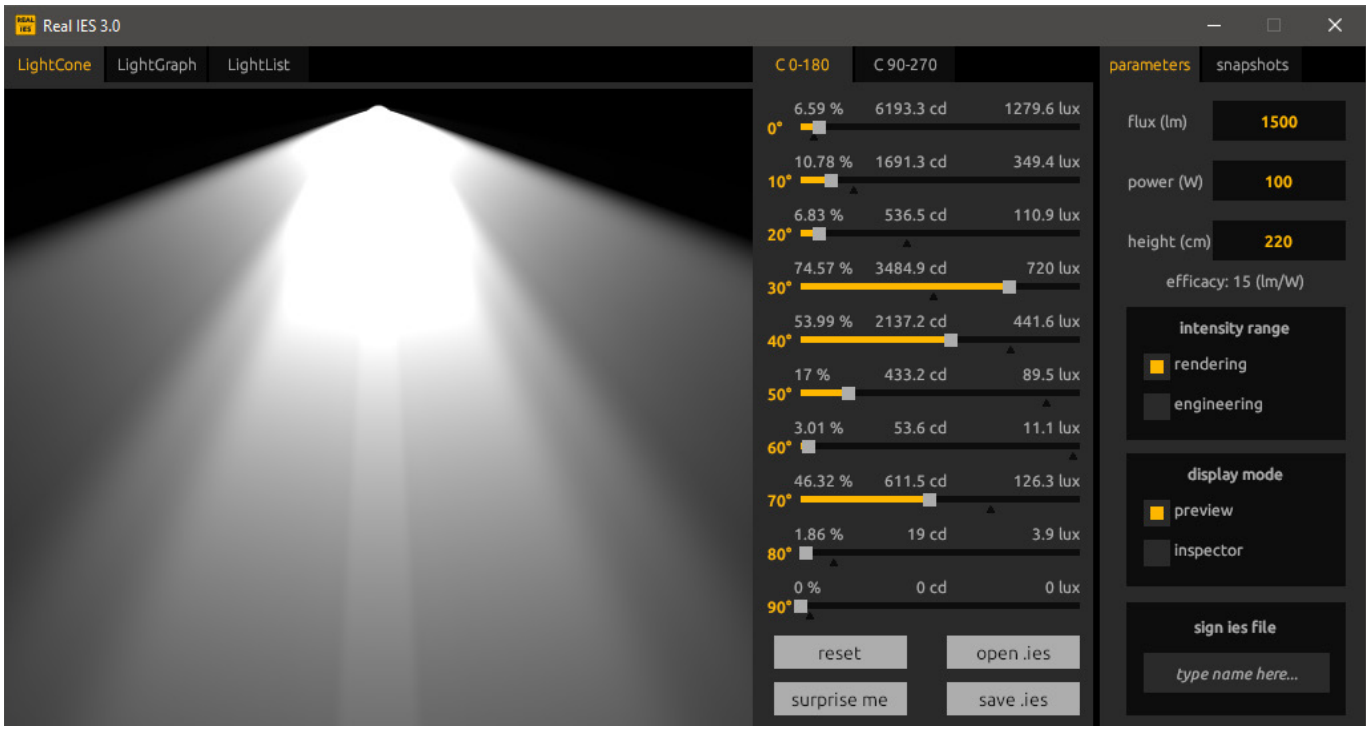
Parameters Panel

Lighting fixture parameters

On the top of the parameters section you can input the data for the lighting fixture.

By default the luminous flux in Real IES is set to 1000 lumen (lm), but you can input manually a total amount of visible light emitted by you lighting fixture. You can get this information in the technical sheets provided by the manufacturer of your light emitter.

You can also manually adjust the power and the vertical position of your light source (by default set to 75 Watt (W) and 350 cm) and get the feedback on your light source efficacy that could be particularly important for energy saving in the lightning design projects.



Should you prefer to leave the default physical parameters, both the power and luminous flux of your photometric light can be adjusted or fine-tuned later, directly in your 3D software using as a reference point the desired photorealistic result of your render.

While manipulating each slider you get an immediate feedback on the changes of the physical parameters of your light. Both luminous intensity (cd) and illuminance (lux) values are displayed for each angle over the corresponding slider.

Intensity range

You can use Real IES for mathematical purposes or even for theoretical data extraction.
Since the luminous intensity in candela (cd) for uniform and isotropic light source is calculated as:

$$Iv(cd) = \Phi v(lm) / \Omega(sr)$$

where

$$\Omega(sr) = 2\pi(1 - \cos(\theta/2))$$

the highest possible value is defined for each angle individually.

Engineering range

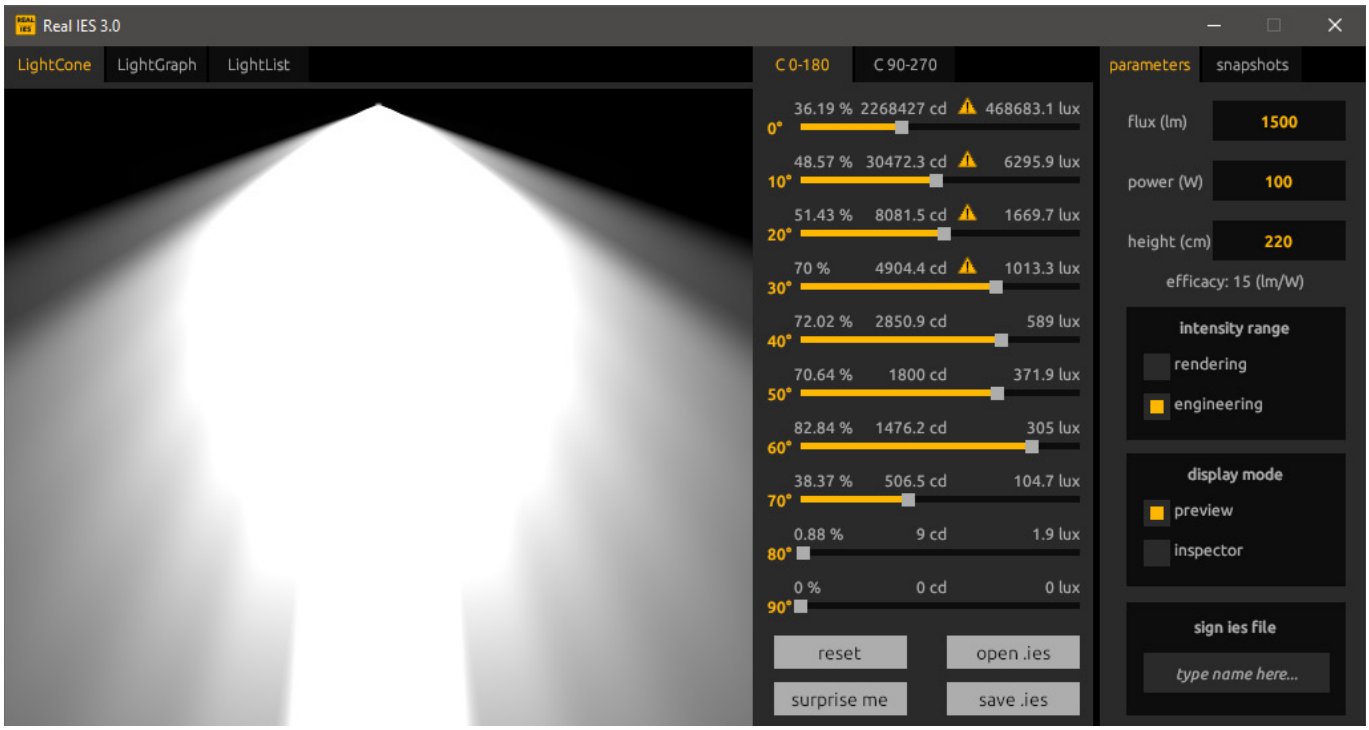
The sliders do not have any restriction and the maximum values are corresponding to the maximum intensity theoretically possible for a certain angle.

When you enter in the range of values that are highly improbable for interior design and photorealistic rendering, you get a warning sign.

Rendering range

The sliders are zoomed in and proportionally demonstrate intensity range for a particular angle that can be distinguished by a human eye and can be visually displayed in a 3D render.

Therefore this workflow is recommended for photorealistic rendering.

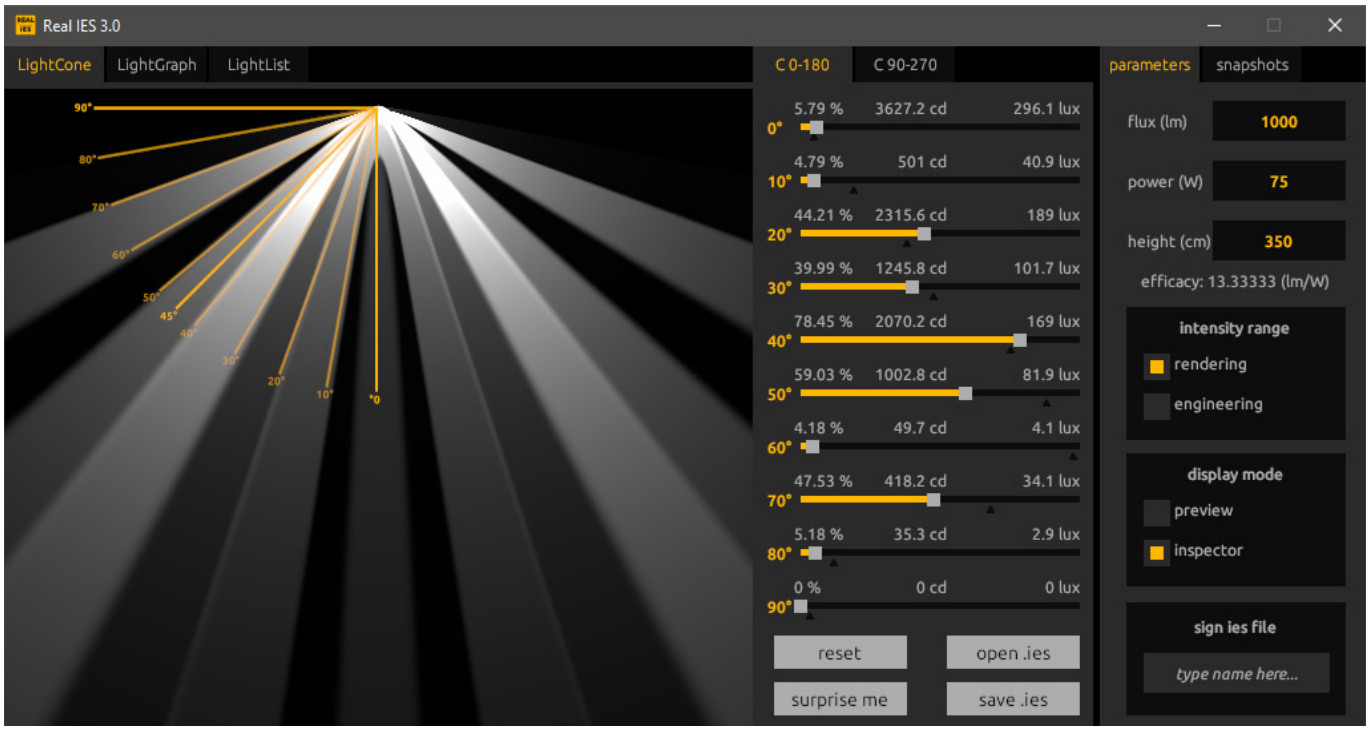


Display Mode

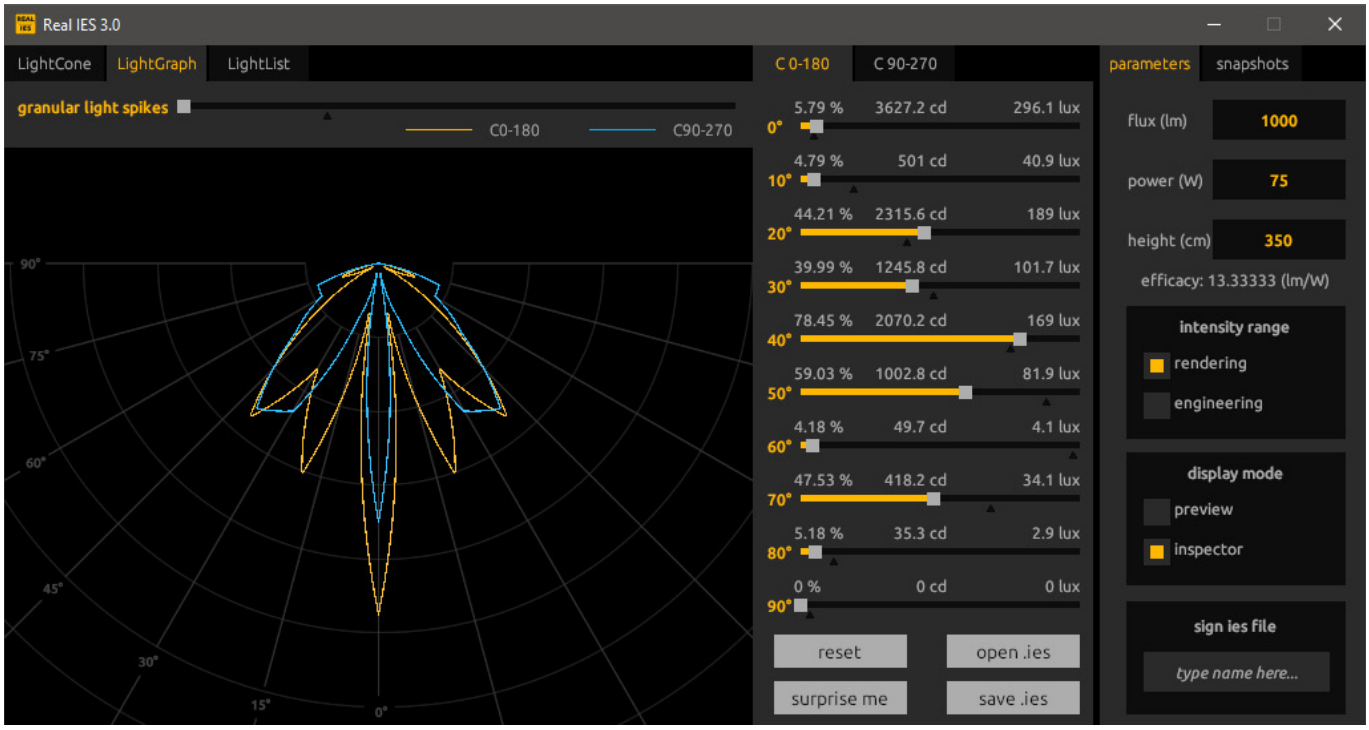
Inspector toggle

By activating Inspector toggle in the Display Mode section you can obtain additional information as a separate layer in your preview panel.

In the LightCone tab Inspector option activates the orange angles overlay and allows you to see your photometric lights as sharply devided by angles to evaluate intensities for each of them.



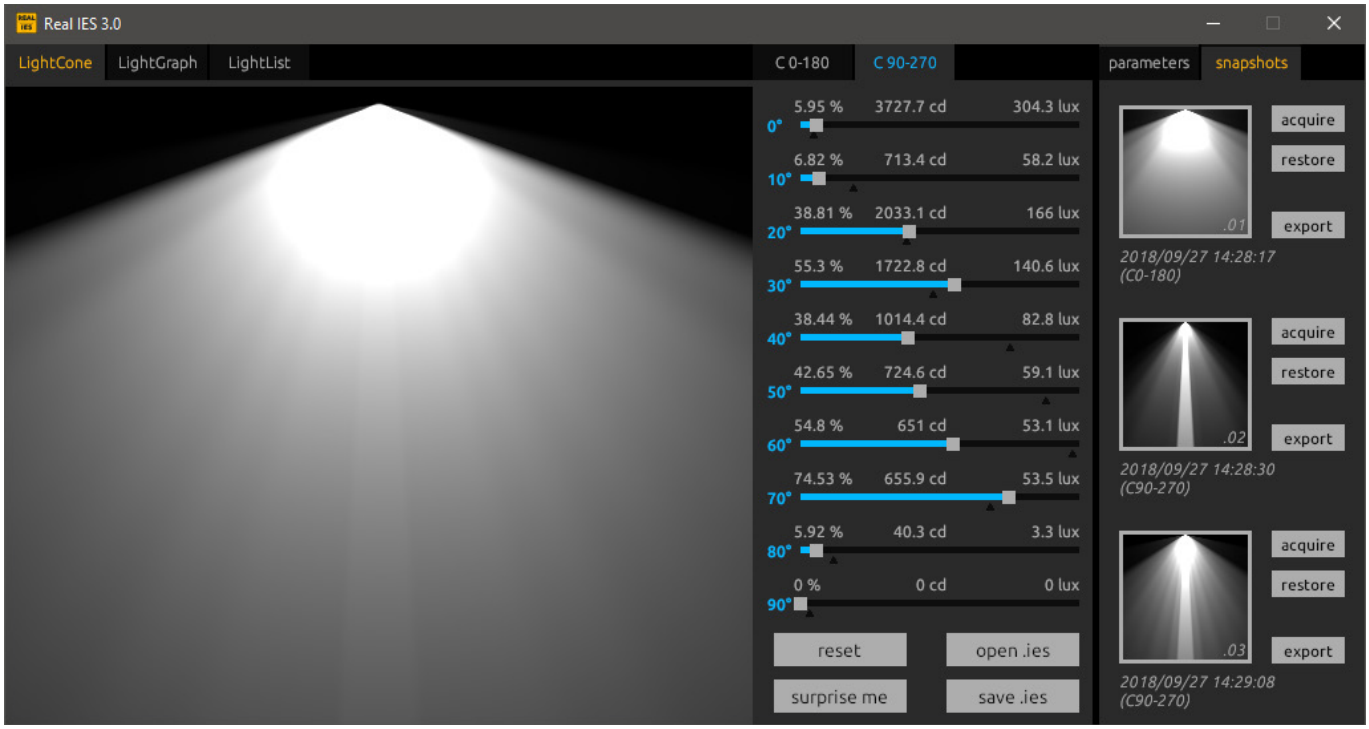
In the LightGraph tab Inspector activates the grey overlay with gamma angles over the photometric polar diagram.



Snapshots

In Real IES 2.1 we have introduced the Snapshot feature that had its evolution in Real IES 3.

In the Snapshots tab you can store in temporary memory up to three different snapshots, capturing the light cone and the light parameters corresponding to it. Under each snapshot you will see the extra information about the date and the time when it was taken and the C-plane of the photometric light it represents.



To make a snapshot

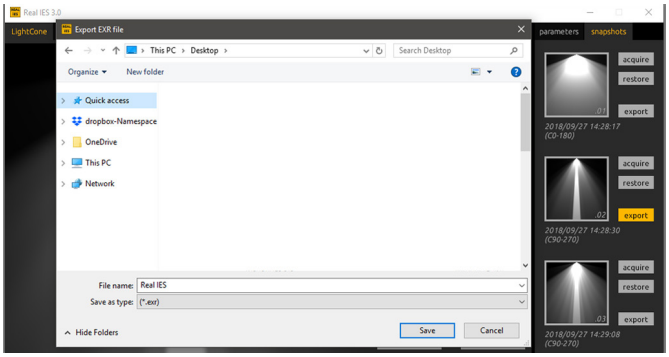
Open the Snapshot panel and Acquire button. If you use the slot with an existing snapshot, you will override it by acquiring the new one.

To restore the snapshot parameters inside your working space

Press the Restore button next to the selected snapshots. This action restores the parameters of the lightcone associated with the corresponding snapshot.

To export the snapshot

Press the Export button close to the snapshot of your choice. Starting from Real IES 3 you can save your snapshot as 32-bit .exr file (2048x2048 pixel size).



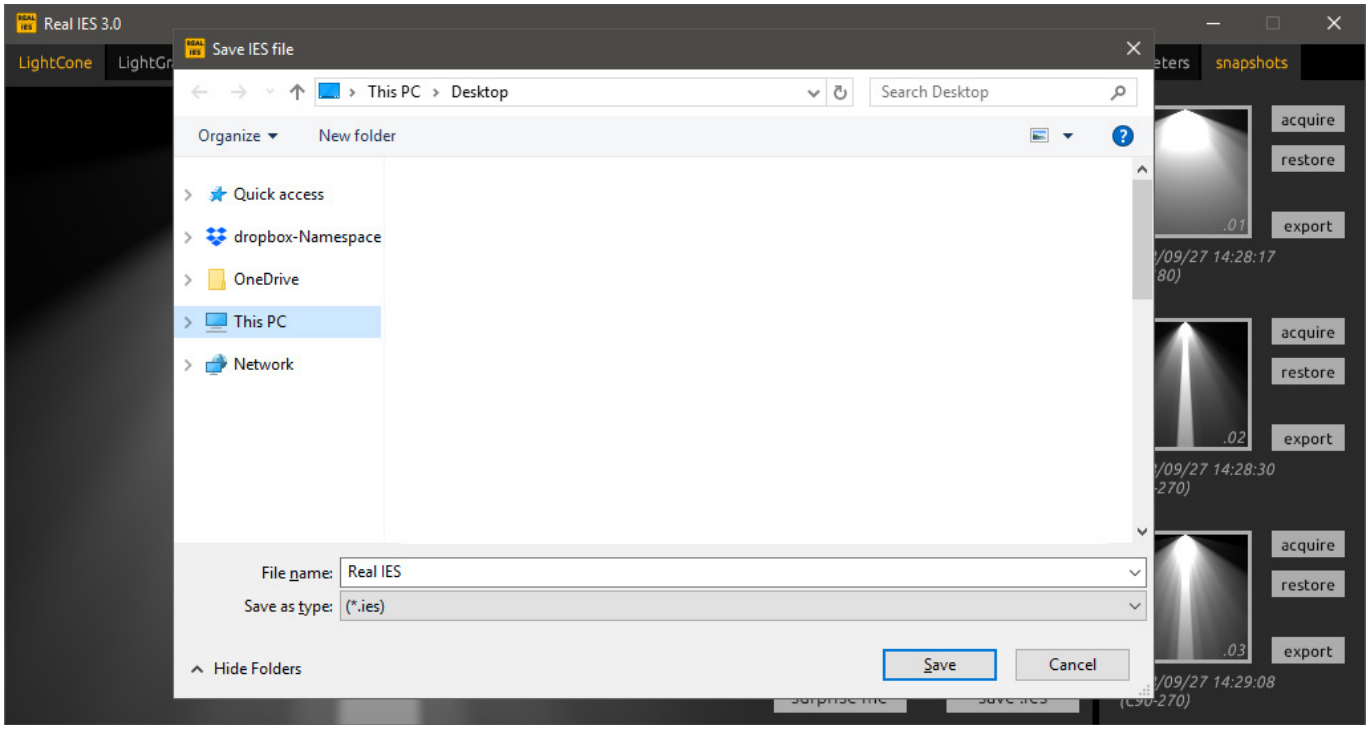
The software will open the OS browser for you to choose the file name and the saving path.

> By saving .exr snapshot (instead of .png as in Real IES 2) users who are going to import "fake" photometric lights in Unity Engine as light cookies, will benefit of maximum exposure editability in Photoshop.

Open/Save photometric files

Save your light

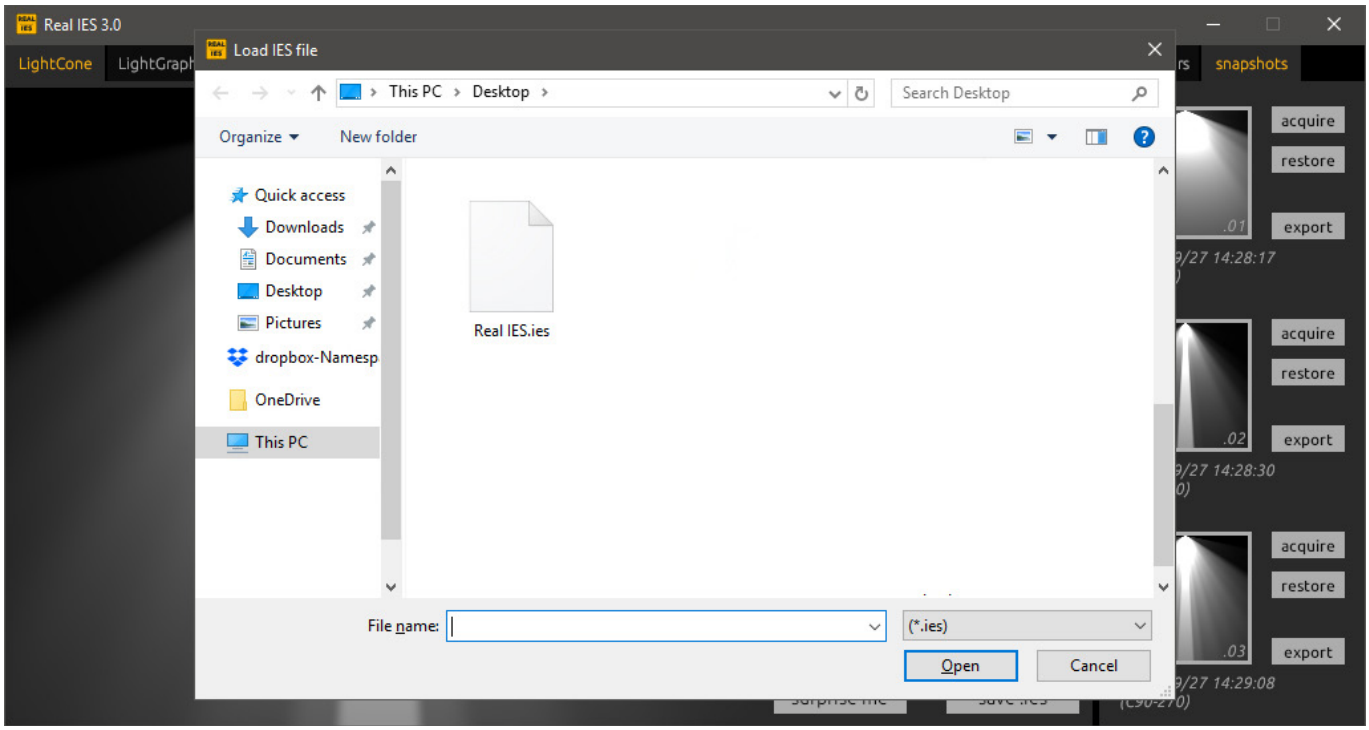
By clicking the SAVE button you can save your photometric light in a IESNA .ies file format. Real IES saves type C photometric files compatible with both offline and realtime render engines. The software will open the OS browser for you to choose the file name and the saving path.



> Should you want to add your name into the *Manufacturer* line of your ies file, you can do so by writing it in the Sign IES File field.

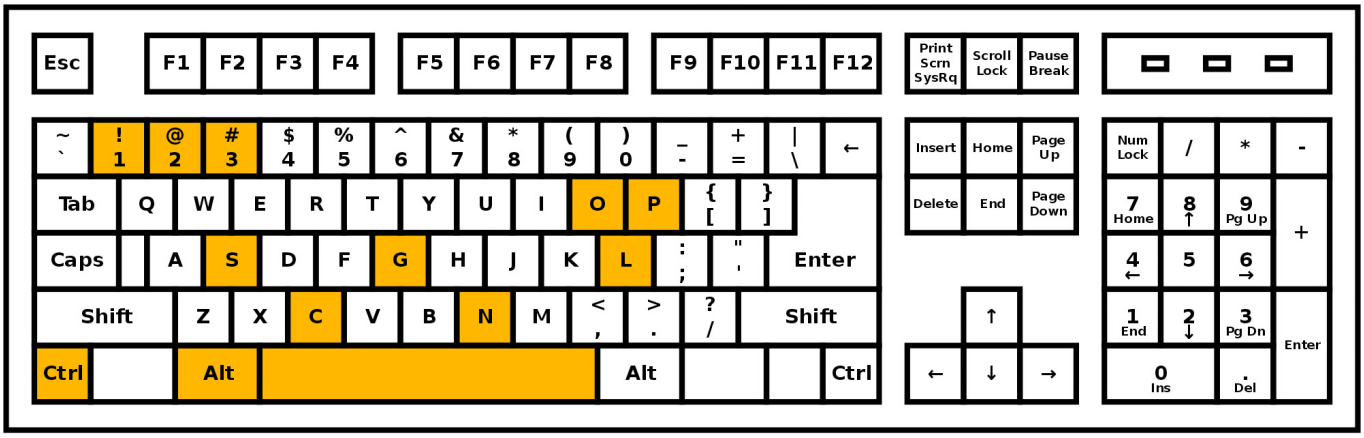
Open previous project

Should you need to edit your photometric light, you can click the OPEN button that will open the OS browser to choose the .ies file that you want to load into your scene.



> Although Real IES can be used to view existing .ies files, it is not the main scope of the software that is developed primarily for creation of artistic photometric lights for rendering purposes.
> The open/save function guarantees the continuity of the workflow and allows to edit the files previously created with Real IES. Some particluar photometric lights provided by lighting fixtures' manufactures (e.g. with asymmetry on many axes, etc) in some cases may not be loaded correctly.

Keyboard shortcuts



QWERTY keyboard diagram courtesy of Offnfopt for WIKIMEDIA COMMONS: https://commons.wikimedia.org/wiki/File:QWERTY_keyboard_diagram.svg

Functions

CTRL + S	save .ies
CTRL + O	open .ies
CTRL + N	new project
CTRL + SPACEBAR	“surprise me”

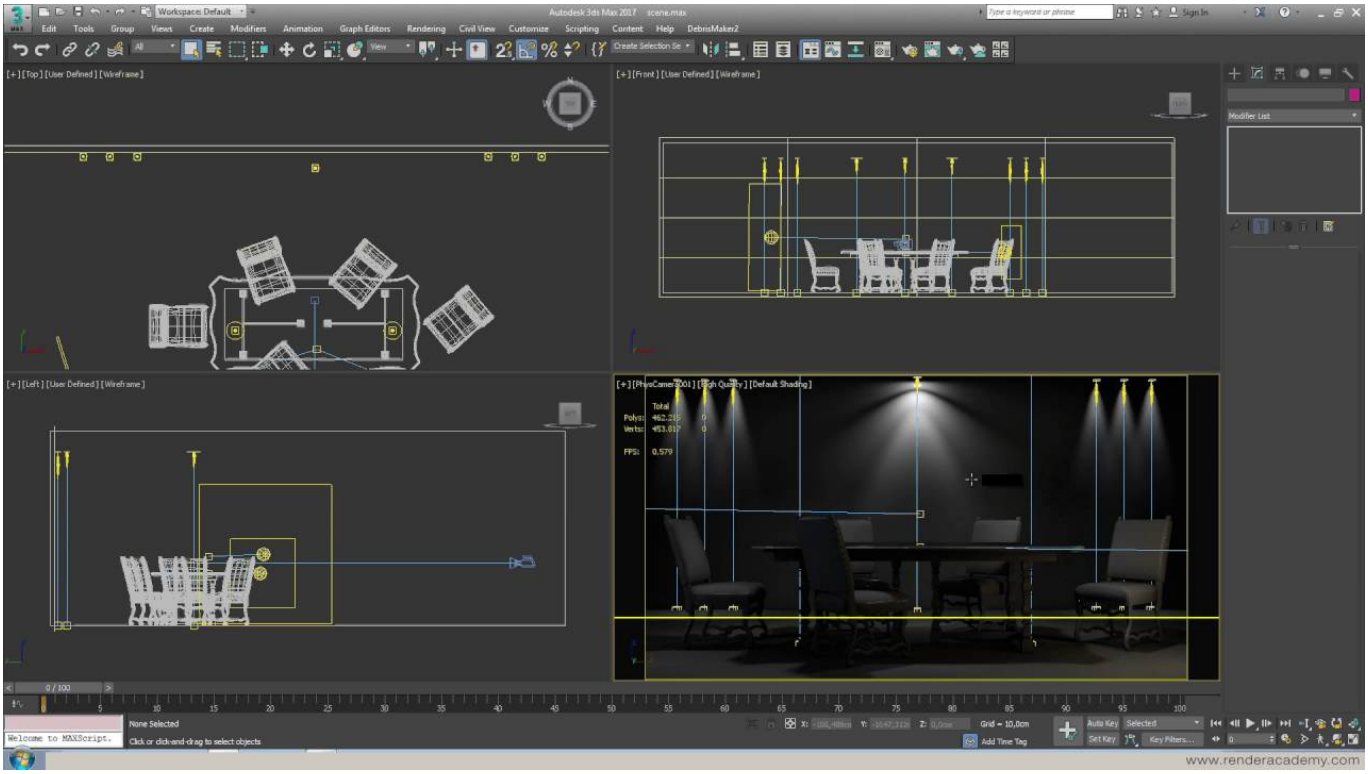
User Interface

ALT + 1	vertical (polar) angles C0-180 plane
ALT + 2	horizontal (azimuth) angles C90-270 plane
ALT + C	LightCone
ALT + L	LightList
ALT + G	LightGraph
ALT + P	Parameters
ALT + S	Snapshots
ALT + S + 1	acquire snapshot state 1
ALT + S + 2	acquire snapshot state 2
ALT + S + 3	acquire snapshot state 3

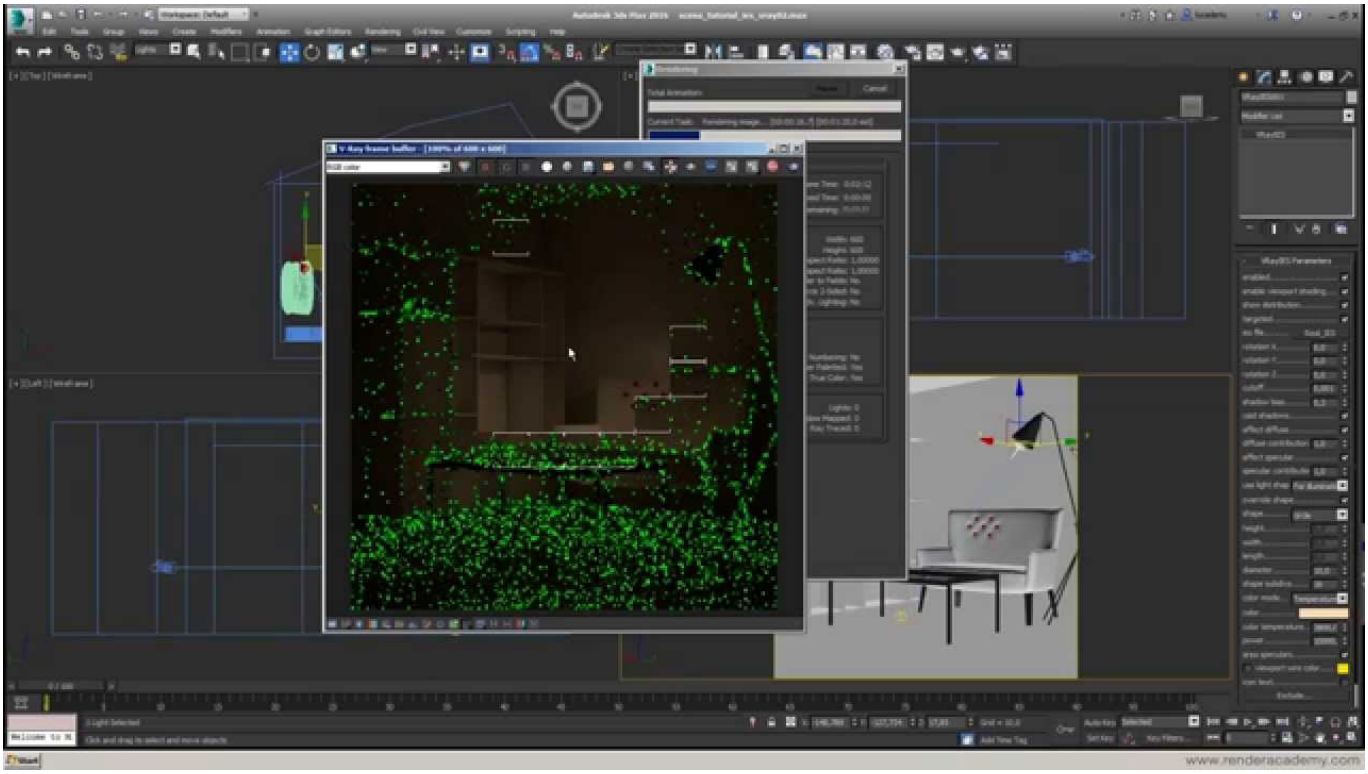
> Suggest new shortcuts to us at support@renderacademy.com

Tutorials

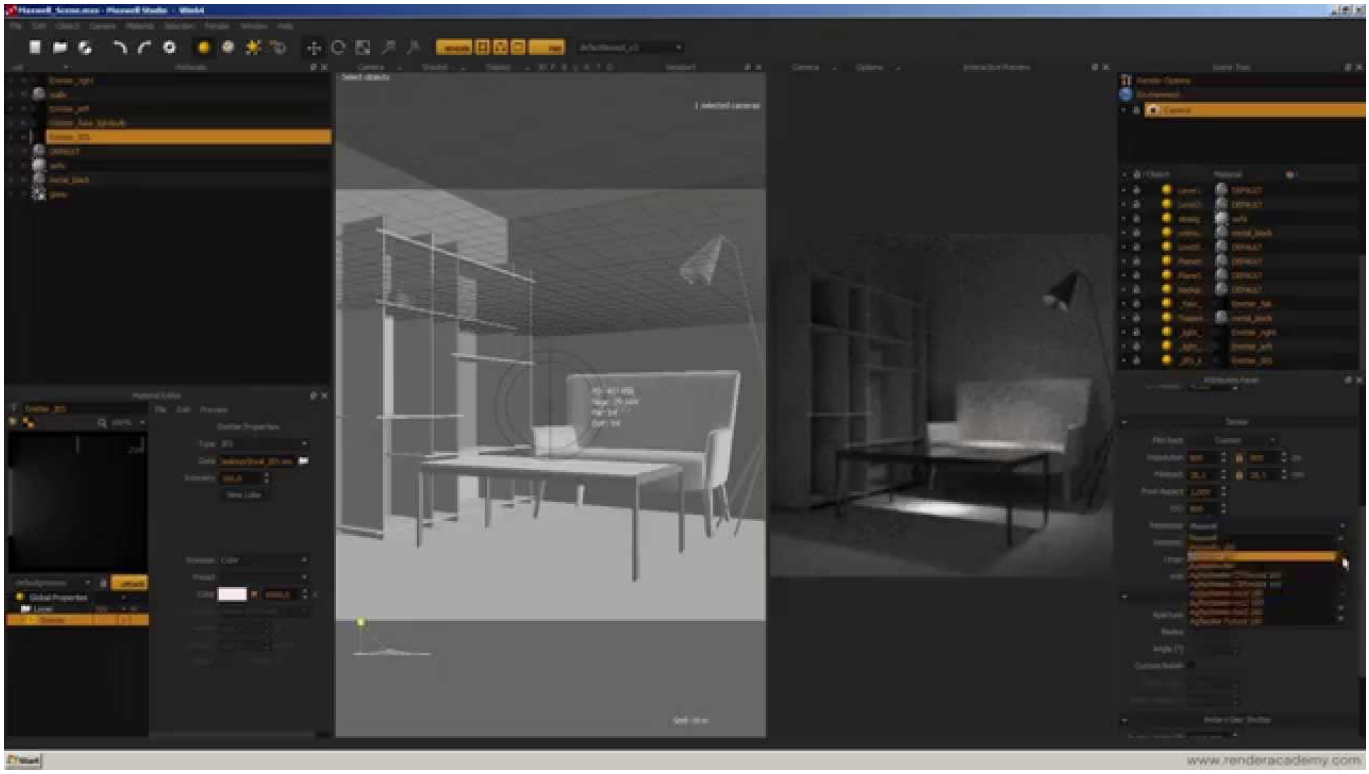
Photometric lights in 3DS Max 2017 and Art Renderer



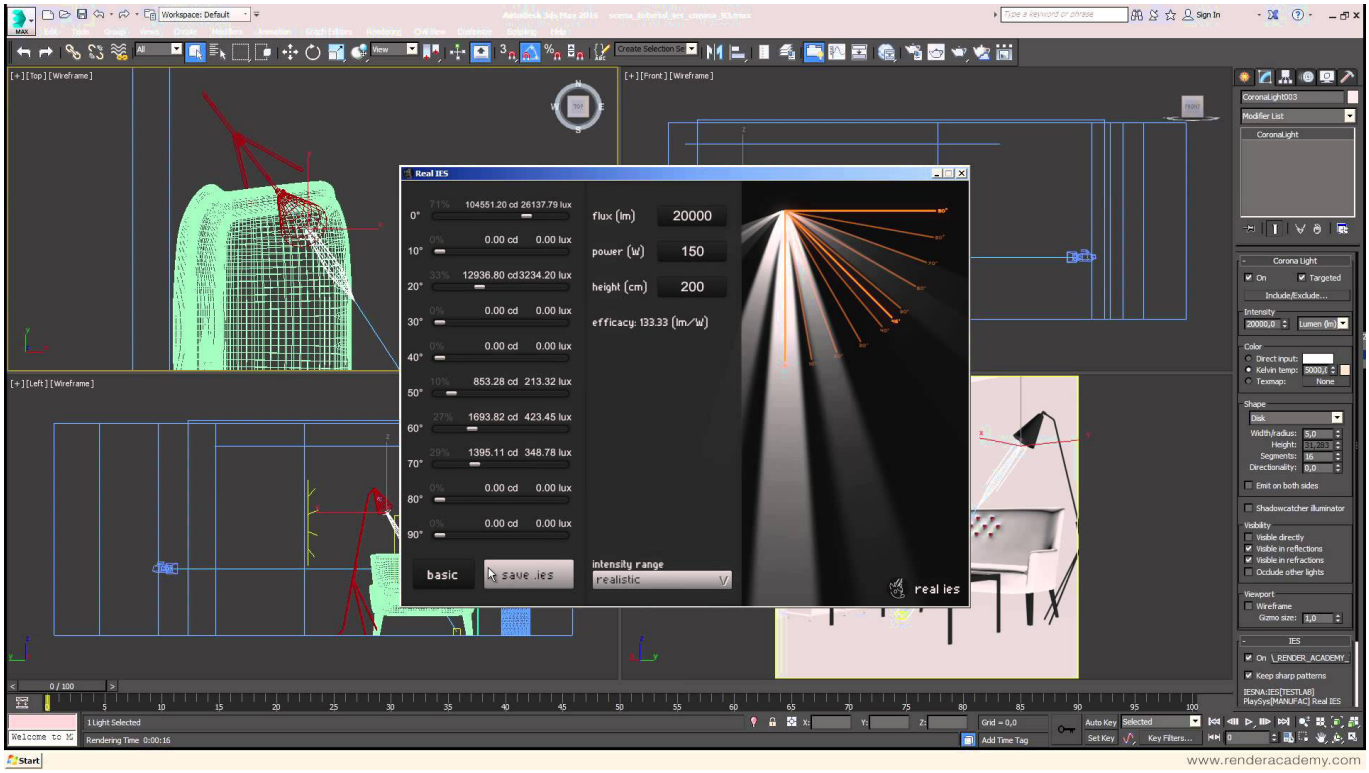
Photometric lights in V-Ray 3.20



Photometric lights in Maxwell Render



Photometric lights in Corona Renderer



Photometric lights in Unreal Engine