



Visual[®] Lighting Plugin
For Autodesk Revit
User Guide

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Solution Overview

Description

The Visual® Lighting Plugin for Autodesk Revit provides a fast, intuitive design solution for creating lighting layouts in complicated Revit projects. More easily navigate projects with Visual's isolation focus workflows to design the spaces you need. Enhanced product selection helps you find and manage the luminaires you need. New automation tools like AutoLayout can reduce your design time by creating layouts with the click of a button. As you conclude your progress in Visual® Lighting, seamlessly return all luminaires, calculation zones, and schedules back to the Revit project to update your file and save your progress. Return to Visual® Lighting again at any time to update your design.

Setup and Startup

Authorization

To run the Visual® Lighting plugin within Revit, you will need to give Revit permission to utilize the plugin and agree to Acuity Brands' Terms and Conditions. Follow the instructions below to download, setup, and run the Visual® Lighting plugin.

1. After downloading the setup file, close any running Revit software before running the installer.
2. Follow the instructions that appear on the installation screen.
3. After installation has been completed, launch Revit.
4. The first time you launch Revit with a new plugin, you will be met with a message alerting you to a new add-in. Select "Always Load" to proceed and dismiss the message for the future.
5. When you launch the plugin inside Revit for the first time, follow the instructions for setting up an SSO account. Create an account using an email address that matches your existing Visual 3D account. If you do not have a Visual 3D account, create one before proceeding.
6. The credentials should persist for a period of time, but if you are ever asked to login again, use the new SSO credentials you just created to proceed.

Startup

To launch the Visual Plugin, first open a project in Revit. A new Acuity Brands tab will appear in the Revit Ribbon Bar. From the Acuity Brands tab, select Design with Visual to launch the plugin.

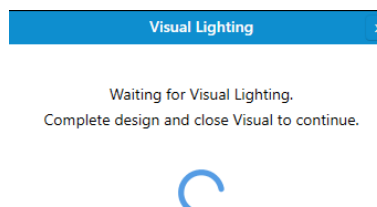


Figure 1. Visual® Lighting Interface

While Visual® Lighting is running, the Revit project will be locked down. A message will be displayed in Revit requiring Visual® Lighting to first be closed before any changes in Revit can be applied. The workflow is setup so that no changes to a Revit model should be happening while you are running Visual® Lighting, ensuring no conflicts occur between what is sent and what returns from Revit. (Figure 1)

Visual® Lighting Interface

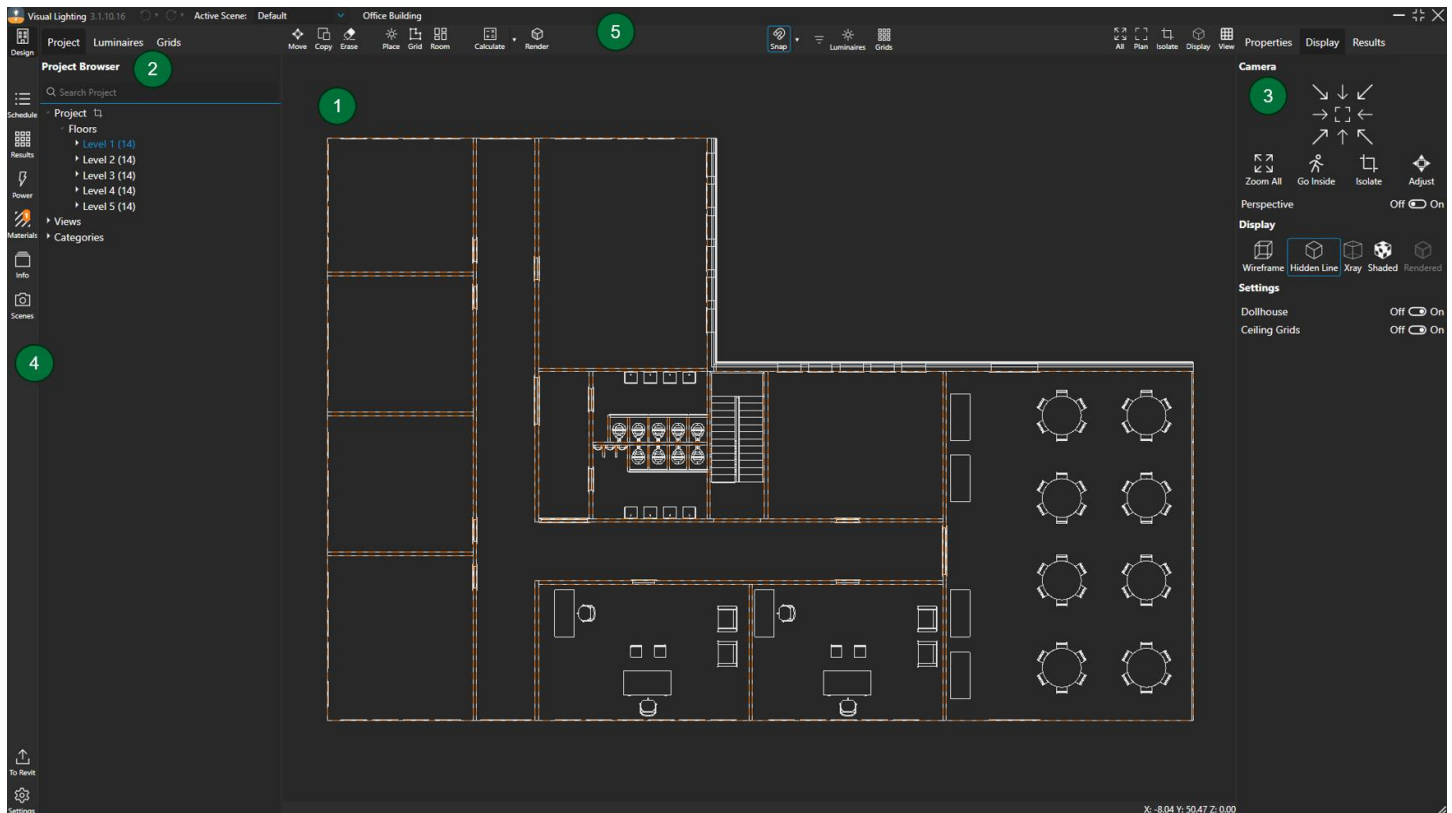


Figure 2. Visual® Lighting Interface

1 – **Design Environment** – Revit projects will load in the matching the last perspective and view of the project in the Revit environment.

2 – The Left Panel contains the **Project Browser**, the **Luminaires** tab, and the **Grids** tab. The **Project Browser** will have a breakdown of each floor and room detected in the Revit project. Categories provide visibility and calculation control over different object categories in the file. Select and place Luminaires from the **Luminaires** tab. Place and manage Calculation Grids from the **Grids** tab.

3 – The Right Panel contains tabs for **Properties**, **Display**, and Calculation **Results**. Select objects with a left click in the design environment to access their **Properties** in the first tab. From the **Display** tab, use the navigation tools to move around the design or create new isolation boundaries, and choose from a range of display modes like Wireframe, Hidden Line, or Shaded mode. From the **Results** tab, view relative calculated results for rooms/floors currently visible in the design environment.

4 – The Main Menu bar on the left provides access to the **Design Environment**, the luminaire **Schedule**, full project **Calculation Results**, auto generated **Power Density** table, **Materials** manager, **Project Info**, and the **Scenes** manager. Use the commands at the bottom to view **Project Settings** or return your work back **To Revit**.

5 – **The Quick Access Toolbar** houses persistent access to basic placement commands for **Luminaires**, **Grids**, and **Rooms**, as well as interactive commands like **Move**, **Copy**, and **Erase**. Toggle various **Snap** commands for design assistance as well as **Selection Filters**. **Display** and **Navigation** commands are available on the toolbar to assist in situations where their tabs are not active.

Navigating a Project

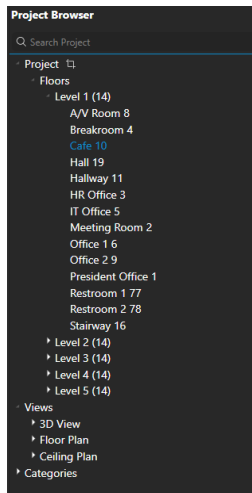


Figure 3. Project Browser

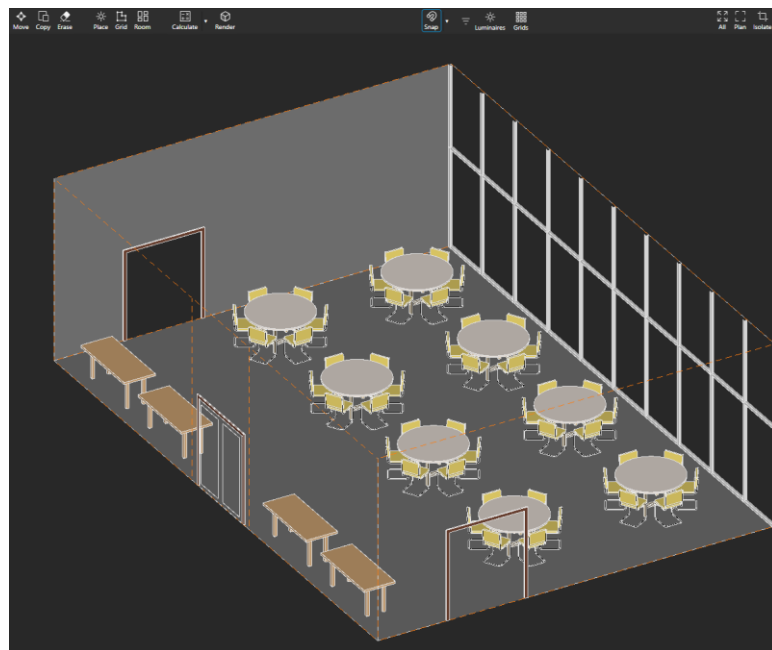


Figure 4. Isolated Room

Project View Structure

The project browser will list any rooms and floors detected in the Revit project loaded into Visual® Lighting. Rooms are captured based on *Room Tags* that have been placed in the Revit project prior to being loaded in the plugin. With room tags and floors designated in the Revit project, Visual® Lighting can create isolated views for each of the floors and rooms. Select a Level from the list and the Design Environment will isolate to just that floor. Select a room from the list and an isolated view will be displayed (Figure 4).

Any Views and Plans saved from Revit will also be available in the Project Browser. Selecting a captured View will convert the project to the correct projection if saved in a Perspective or Ortho mode. To return to a standard Ortho perspective, select the toggle from the Display Tab. (Figure 5)

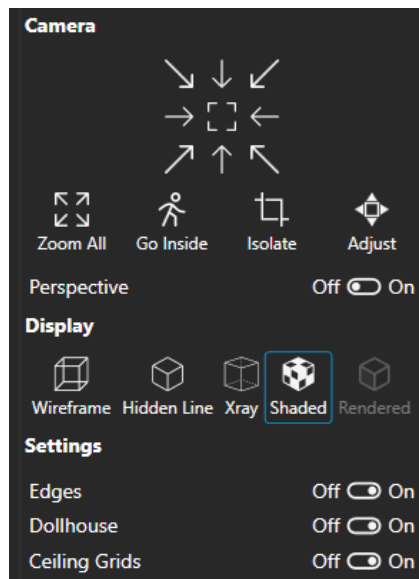


Figure 5. Perspective Toggle (Display Tab)

Custom Isolation, Rooms, and Project Extents

For instances where design boundaries extend beyond existing regions or floors, from the Display tab, the Isolate command can be used to select multiple regions for a specialized view box. Select Isolate, and any region in the drawn selection box will be grouped together in a new temporary isolation view.

To create permanent custom isolations, use the Room command found on the Quick Access Toolbar. Draw a region and specify a height and the new Room will be added to the Project Navigation section, including a new *Visual Regions* section.

In cases where the area that needs to be designed is a subsection of the entire project, **Edit Project Extents** can be used to narrow the view box of an area. At the Project level of the Project Browser, select the Extents icon to enable a controllable View Box to resize the scope of the design. (Figure 6)

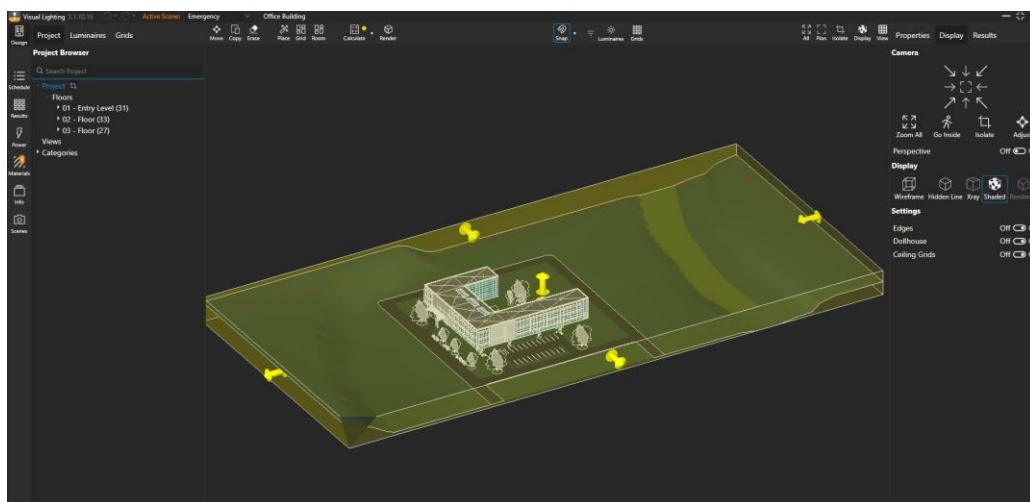


Figure 6. Edit Extents

Display Modes and Camera Controls

From the Display Tab, use the Navigation Cube to select from isometric and elevation views. Use the center box to return to an overhead plan view of the design. The display Settings toggles at the bottom grant additional visibility control over the design. Modify the edge style for better visibility in the design. Turn on/off Dollhouse mode to see through surfaces into a space. Use the Ceiling Grids toggle to change the visibility of Revit Ceiling Grids.

Mouse Commands

The middle mouse button in the design environment will pan around the design. Holding Shift + Middle Mouse button will engage a 3D orbit around the design. Scroll up and down to zoom in and out.

Creating a Schedule

Adding Luminaires

To support different workflows, you can add luminaires to your design in a multiple ways. From the Luminaire tab, you can directly search Acuity's library of photometry and add it to your schedule to be placed in the design. (Figure 7)

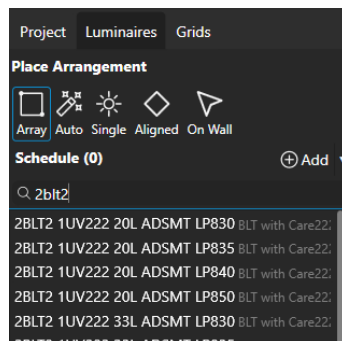


Figure 7. Quick Search

Select the **Add** button to launch the product selection environment. The Product Selection window is divided into 4 sections; **Filter**, **Search**, **Browse**, and **Local**.

Filter – Use the filters at the top of the page to find the luminaire series you need based on product features, application type, mounting information, etc.

Search – Type in product nomenclature to help find a specific series of luminaire options, or use product descriptors to find several products of a similar type (troffer, downlight, linear, etc)

Browse – Navigate through the variety of brands under the Acuity banner. Expand Brands into product type, series and available photometry.

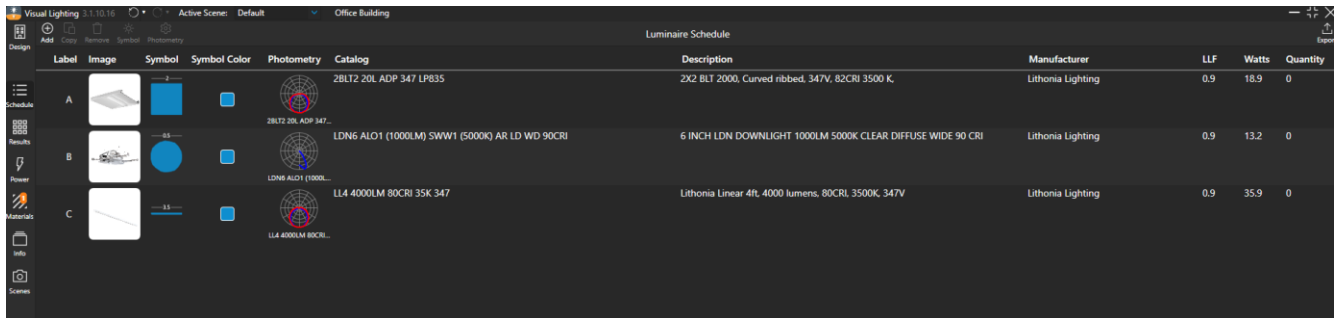
Local – Quickly access IES files stored in local folders. Add any personal folders to the favorites panel. Each folder will have a callout identifying how many IES files are stored in that location.

After selecting the IES file you need, additional information and any available product links will be shown in the right panel. Click **Select** to add the luminaire to your design schedule.

Placeholders

Using the drop-down menu next to the **Add** button, you can select from a list of placeholder models to use in your design. Placeholder models will not have photometry attached but can be placed in the design and later assigned the appropriate photometry from the **Schedule**.

Luminaire Schedule



Label	Image	Symbol	Symbol Color	Photometry	Catalog	Description	Manufacturer	LLF	Watts	Quantity
A					ZBLT2 20L ADP 347 LPB35	2X2 BLT 2000, Curved ribbed, 347V, 82CRI 3500 K	Lithonia Lighting	0.9	18.9	0
B					LDN6 ALO1 (1000LM) SWW1 (5000K) AR LD WD 90CRI	6 INCH LDN DOWNLIGHT 1000LM 5000K CLEAR DIFFUSE WIDE 90 CRI	Lithonia Lighting	0.9	13.2	0
C					LL4 4000LM 80CRI 35K 347	Lithonia Linear 4ft 4000 lumens, 80CRI, 3500K, 347V	Lithonia Lighting	0.9	35.9	0

Figure 8. Schedule

From the **Main Menu** launch the **Schedule**. (Figure 8) As luminaires are added to your design, they will populate in the schedule. Each luminaire will include a Label, product image (when available), Symbol size and color, Photometric Web preview, Catalog, Description, Manufacturer, Light Loss Factor (LLF), Wattage, and Quantity currently placed in the design. Most text fields can be edited to customize the luminaire. *The LLF can even be set to a default value ahead of time in the **Settings** section of the **Main Menu**.*

Select to highlight a row to access the tools in the top toolbar. Copy or Remove luminaires, Edit the product symbol and orientation, or modify the photometry associated with the model.

With the **Edit** command, you can reshape the volume of the luminaire and reposition the light source associated with the model. Photometric positioning is in **Orange**, and Luminaire geometry is in **Blue**. (Figure 9)

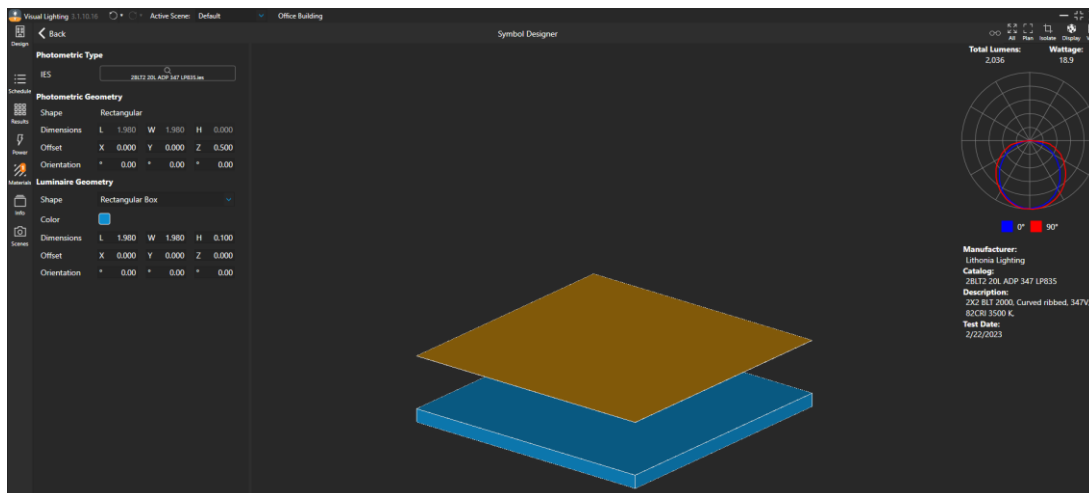


Figure 9. Symbol Editor

The **Photometry** command is used to either replace or add an alternate IES file to the currently selected model. Like Revit luminaires, a single model can hold multiple configurations, supporting multiple assigned IES files. Use the check box next to the IES configuration to make it the active photometric file. (Figure 10).

Label	Image	Symbol	Symbol Color	Photometry	Catalog	Description	Manufacturer	LLF	Watts	Quantity
A					2BLT2 20L LUGRT 347 LP940	2X2 BLT 2000, Curved low UGR lens with trim 347V, 90CRI 4000 K.	Lithonia Lighting	0.9	18.9	0
					2BLT2 20L ADP 347 LP835	2X2 BLT 2000, Curved ribbed, 347V, 82CRI 3500 K.	Lithonia Lighting		2036	18.9
					2BLT2 20L ADP 347 LP940	2X2 BLT 2000, Curved low UGR lens with trim 347V, 90CRI 4000 K.	Lithonia Lighting		1900	18.9
					2BLT2 20L LUGRT 347 LP940	2X2 BLT 2000, Curved low UGR lens with trim 347V, 90CRI 4000 K.	Lithonia Lighting		1900	18.9
B					LDN6 ALO1 (1000LM) SWW1 (5000K) AR LD WD 90CRI	6 INCH LDN DOWNLIGHT 1000LM 5000K CLEAR DIFFUSE WIDE 90 CRI	Lithonia Lighting	0.9	13.2	0
C					LL4 4000LM 80CRI 35K 347	Lithonia Linear 4ft. 4000 lumens, 80CRI 3500K, 347V	Lithonia Lighting	0.9	35.9	0

Figure 10. Photometry Selection

If luminaires already exist in a Revit project before loading into Visual® Lighting, they will be included in the schedule. However, to ensure that design intent is met within Visual® Lighting, photometry within established Revit luminaires will need to be activated the first time you load into the plugin. Activating an IES file within the model will substitute in a Visual version of the luminaire that matches the size and shape of the luminous volume found in the IES file, ensuring you are designing with the most accurate representation of the luminaire.

Creating a Layout

Placing Luminaires

Luminaires can be placed using commands on the **Luminaires** tab. Select from the list of placement options to being the command. Within a placement command, choose the desired luminaire from the drop-down menu, and define any placement properties in the panel. Left click to place the luminaire in the design. The options for placement include **Array**, **Auto**, **Single**, **Aligned**, and **On Wall**.

Array – Use the **Array** command to create a uniform arrangement of luminaires. Choose to arrange your luminaires by selecting a Type, by quantity or by spacing. Change the positioning of the arrangement within your boundary by choosing an option from the Position dropdown. Arrangements can be modified later by selecting a luminaire and altering the properties.

Auto – The **AutoLayout** option will create a uniform layout of a selected luminaire, with the intent of hitting a certain design criteria. The AutoLayout command will combine placing luminaires and a calculation zone in one process. After starting the command, choose the desired luminaire and modify its placement properties. Predefine the calculation grid spacing and height and choose a criteria to drive the placement. **Illuminance** will target a specific footcandle level. **Power Density** will limit arrangements by its power usage. **Quantity** will constrain the arrangement to a select number of luminaires. Use the Ceiling drop down to choose whether the AutoLayout should respect an open or gridded ceiling. Like standard arrays, the arrangements can be altered after placement through the properties tab. Arrangements can be set to meet different criteria or target or you can swap product types and update the arrangement to compensate.

- Single** – Select and place a luminaire one instance at a time. Use the ceiling options to have the luminaire automatically orient and align with any existing ceiling grids and planes.
- Aligned** – Similar to the Array command, the **Aligned** command will create a uniform arrangement for a selected luminaire, choosing the type and positioning in the properties. When initiating the placement, first choose an angle to orient the arrangement to the desired region.
- On Wall** – Use the **On Wall** command to place luminaires on an existing surface. After selecting a wall or surface to place a luminaire, the luminaire will be “locked in” to the selected plane. Use the Offset and Height to refine the location of the luminaire on the selected surface.

Adjusting Layouts

Selecting a luminaire or luminaire arrangement will open the Properties Tab. Adjust the orientation or height of luminaire, swap product types, or enable the Orient command for precision repositioning. The Display options at the bottom of the Luminaire tab provide additional control over the luminaires in the design. (Figure 11).

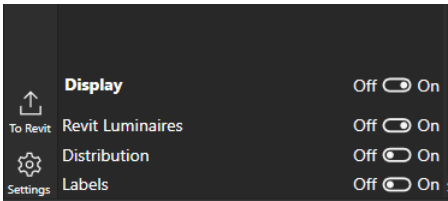


Figure 11. Luminaire Display Options

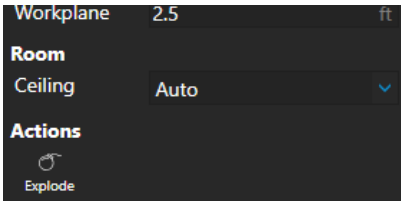


Figure 12. Explode Arrangements

- The Display toggle will hide all luminaires in the design. Revit Luminaires can be toggled on/off specifically in the design. Use the Distribution option to view photometric webs in the design. Labels will enable a visualization of the assigned label for each luminaire.
- For Arrangements, to make individual changes to luminaires, they must first be Exploded. Select an arrangement and choose the Explode option found in the properties tab. (Figure 12)
- To precisely orient a luminaire, use the Orient command found in the luminaire properties. When enabled, manipulate the 3 axis of rotation to modify the luminaires. (Figure 13) Use the command properties for precision control. (Figure 14)

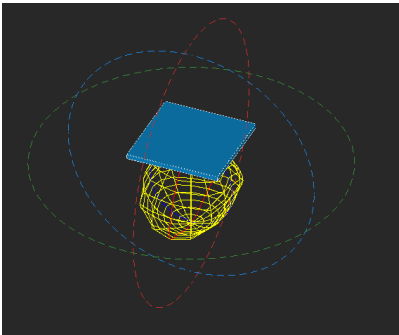


Figure 13. Explode Arrangements

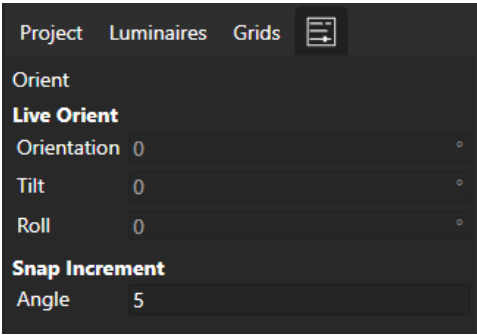


Figure 14. Explode Arrangements

Calculating and Viewing Results

Placing Grids

Grids can be placed using commands on the **Grids** tab. Select from the list of placement options to being the command. (Figure 15)

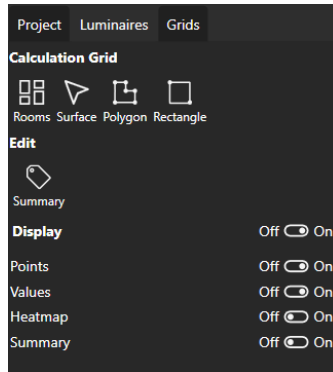


Figure 15. Grids Tab

Use available placement options to create grids in your design.

Begin the **Rooms** – Grid command to select a room boundary in the design and confirm with a right click to place a calculation grid that matches the boundary and settings defined during placement. The name of the Grid will also match the room it is placed in.

The **Surface** command can be used to select a surface and confirm with a right click to place a calculation grid matching the orientation and boundary of a selected geometric surface.

For more customized placement, the **Polygon** and **Rectangle** commands can add specifically sized and shaped grids to the design.

Calculating

To begin the calculation process, select the **Calculate** command from the **Quick Access Toolbar**. A dialog box will pop up showing the progress of the calculation command and close when complete. (Figure 16)

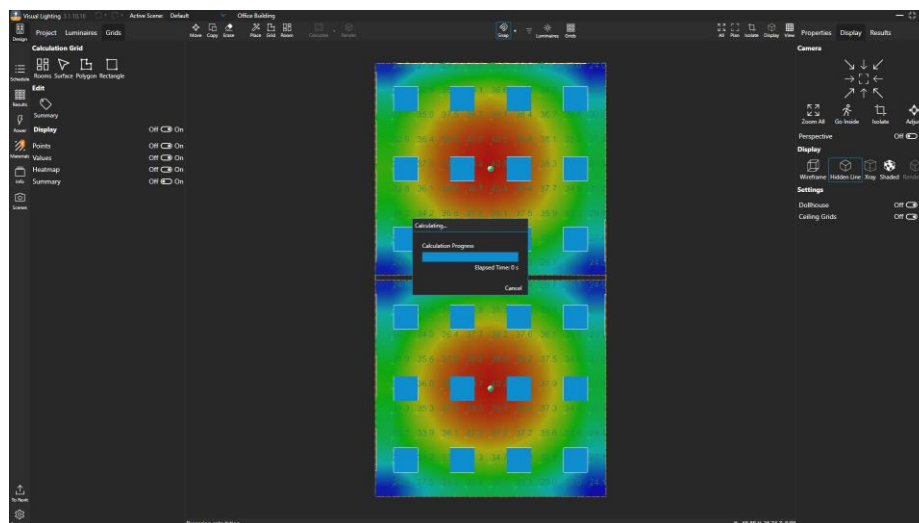


Figure 16. Grids Tab

After running the calculation command, you can review the quick results on the **Results** tab of the right panel. (Figure 17)

Properties Display Results			
Results			
Grid	Avg (Tar.)	Max	Min
Breakroom 4	32.9 (30) fc	39.8 fc	23.8 fc
HR Office 3	33.3 (30) fc	40.2 fc	24.1 fc
IT Office 5	29.7 (30) fc	36.2 fc	20.3 fc
President Office 1	33.7 (30) fc	40.8 fc	24.0 fc

Figure 17. Quick Results

Calculations can be restricted to the regions currently in isolation, so calculations aren't run for the entire project because of changes made in a singular location. To perform a localized calc, view any floor or region in isolation and run the **Calculate** command. The process will only run for the area currently in view, while not disrupting any previously calculated or uncalculated areas. To calculate the entire project, return to the Project level of navigation and run the command.

Calculation results will also only “stale” per region as changes are made. Modifying luminaires or arrangements in one room will not disrupt calculations made in a disconnected area.

In the Design Environment, additional **Display** options can be modified on the **Grids** tab. Globally control the visibility of all grids with the Display toggle. Turn off Points and Values or enable a pseudo color heat map overlay on the grids. The Summary option provide a quick output review on each zone, making it easier to quickly recall key values.

Results

After running the **Calculate** command, use the Results tab to display the Average, Max, and Min values for any room or floor currently in the Design Environment. Grids that were assigned a target value will include that value in the Average for comparison, highlighting which rooms may need additional design. (Figure 17)

To review the full project results, select the **Results** section from the **Main Menu**. (Figure 18)

Label	Detail	Floor	Room	Target (fc)	Average (fc)	Maximum (fc)	Minimum (fc)	Max/Min	Avg/Min
A/V Room 8	Workplane	Level 1	A/V Room 8	30	37.5	51.1	26.2	2.0:1	1.4:1
Breakroom 4	Workplane	Level 1	Breakroom 4	30	34.2	56.3	24.2	2.3:1	1.4:1
Cafe 10	Workplane	Level 1	Cafe 10	30	31.5	53.8	18.0	3.0:1	1.8:1
Hall 19	Workplane	Level 1	Hall 19	30	43.2	64.9	32.5	2.0:1	1.3:1
Hallway 11	Workplane	Level 1	Hallway 11	30	33.8	57.0	18.0	3.2:1	1.9:1
HR Office 3	Workplane	Level 1	HR Office 3	30	34.2	50.5	24.2	2.1:1	1.4:1
IT Office 5	Workplane	Level 1	IT Office 5	30	30.6	47.6	20.5	2.3:1	1.5:1
Meeting Room 2	Workplane	Level 1	Meeting Room 2	30	33.1	59.9	20.6	2.9:1	1.6:1
Office 1 6	Workplane	Level 1	Office 1 6	30	33.4	77.5	6.3	12.3:1	5.3:1
Office 2 9	Workplane	Level 1	Office 2 9	30	36.0	73.1	6.3	11.6:1	5.7:1
President Office 1	Workplane	Level 1	President Office 1	30	34.6	48.4	24.2	2.0:1	1.4:1
Restroom 1 77	Workplane	Level 1	Restroom 1 77	30	17.8	28.5	0.2	142.5:1	86.5:1
Restroom 2 78	Workplane	Level 1	Restroom 2 78	30	23.8	28.7	7.1	4.0:1	3.2:1
Stairway 16	Workplane	Level 1	Stairway 16	30	22.7	38.1	2.5	15.2:1	9.1:1
Cafe 26	Workplane	Level 2	Cafe 26	30	36.9	52.2	19.9	2.6:1	1.9:1
Hall 33	Workplane	Level 2	Hall 33	30	44.8	65.9	32.5	2.0:1	1.4:1
Hallway 29	Workplane	Level 2	Hallway 29	30	40.1	61.8	21.7	2.8:1	1.8:1
Meeting Room 28	Workplane	Level 2	Meeting Room 28	30	39.8	51.1	18.4	2.9:1	2.1:1
Office 1 24	Workplane	Level 2	Office 1 24	30	39.0	84.2	21.4	3.9:1	1.8:1
Office 2 25	Workplane	Level 2	Office 2 25	30	41.4	76.6	25.7	3.0:1	1.6:1
Office 3 22	Workplane	Level 2	Office 3 22	30	38.0	57.7	21.4	2.7:1	1.8:1
Office 4 21	Workplane	Level 2	Office 4 21	30	37.1	53.4	24.1	2.2:1	1.5:1
Presentation Room 27	Workplane	Level 2	Presentation Room 27	30	42.6	57.8	26.6	2.2:1	1.6:1
Private Office 20	Workplane	Level 2	Private Office 20	30	37.7	52.7	23.8	2.2:1	1.6:1
Private Office 23	Workplane	Level 2	Private Office 23	30	33.2	50.2	18.6	2.7:1	1.8:1
Restroom 1 79	Workplane	Level 2	Restroom 1 79	30	17.6	29.6	0.2	146.0:1	88.0:1
Restroom 2 80	Workplane	Level 2	Restroom 2 80	30	23.2	29.2	7.2	4.1:1	3.2:1
Stairway 32	Workplane	Level 2	Stairway 32	30	22.9	38.4	4.0	9.6:1	5.7:1
Breakroom 36	Workplane	Level 3	Breakroom 36	30	39.6	54.4	17.0	3.2:1	2.3:1
Cafe 46	Workplane	Level 3	Cafe 46	30	52.5	64.9	27.5	2.4:1	1.9:1
Conference Room 41	Workplane	Level 3	Conference Room 41	30	45.9	65.0	22.7	2.9:1	2.0:1
Hall 43	Workplane	Level 3	Hall 43	30	45.3	64.6	33.0	2.0:1	1.4:1
Hallway 38	Workplane	Level 3	Hallway 38	30	47.3	78.4	18.7	4.2:1	2.5:1

Figure 18. Project Results

Additional details can be found in the full project **Results**. Values also include a Max/Min and Avg/Min uniformity ratio. Use the **Below Target** action to limit the results to just rooms that fall below the target footcandle level. Select a row and use **Show** to quickly open that room in isolation.

Power Density

From the **Main Menu**, select the **Power** section to open the Power Density table. As luminaires are placed in a design, the power density value is populated automatically in the Power Density table. As luminaire arrangements are modified or types changed, the table will update accordingly. (Figure 19)

Room	Floor	Watts/ft²	Quantity	Area ft²	Total Watts
Cafe 10	Level 1	0.43	32	1,424.72	605.76
Office 2 9	Level 1	0.66	15	429.77	283.95
A/V Room 8	Level 1	0.67	15	424.93	283.95
Office 1 6	Level 1	0.60	15	474.36	283.95
IT Office 5	Level 1	0.57	12	397.03	227.16
Breakroom 4	Level 1	0.69	12	328.63	227.16
HR Office 3	Level 1	0.69	12	328.63	227.16
Meeting Room 2	Level 1	0.53	18	639.61	340.74
President Office 1	Level 1	0.71	12	322.09	227.16
Hallway 11	Level 1	0.75	38	957.87	718.34
Stairway 16	Level 1	1.16	8	131.02	151.44
Hall 19	Level 1	1.24	8	122.36	151.44
Private Office 20	Level 2	0.53	9	322.09	170.37
Office 4 21	Level 2	0.52	9	328.63	170.37
Office 3 22	Level 2	0.52	9	328.63	170.37
Private Office 23	Level 2	0.43	9	397.03	170.37
Office 1 24	Level 2	0.48	12	474.36	227.16
Office 2 25	Level 2	0.53	12	429.77	227.16
Cafe 26	Level 2	0.37	28	1,424.72	530.04
Presentation Room 27	Level 2	0.54	12	423.96	227.16
Meeting Room 28	Level 2	0.44	15	639.61	283.95
Hallway 29	Level 2	0.59	30	960.07	567.90
Stairway 32	Level 2	1.16	8	130.73	151.44

Figure 19. Project Results

Rendering

Use the **Render** command on the **Quick Access Toolbar** to begin rendering the current Design Environment. A dialog box will launch showing the progress of the process. When it is completed, the Rendered Display mode will be active, showing the newly rendered region. If regions are rendered in isolation, returning to a higher level of the project will display a hybrid render mode, showing which regions have been processed by the renderer and which have not. (Figure 20) An up-to-date calculation is always required before rendering can process. If one has not been run yet, starting the rendering process may initiate a calculation phase first automatically.

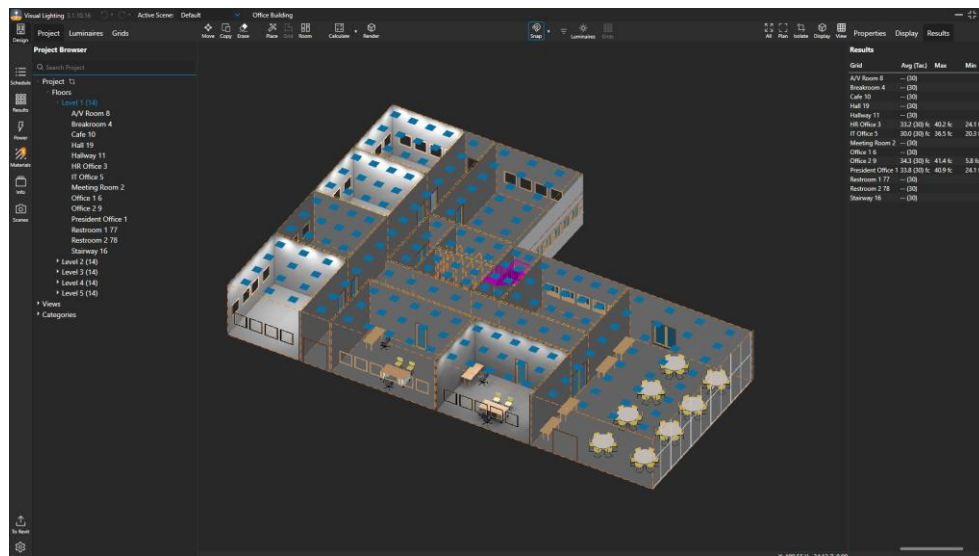


Figure 20. Hybrid Render Display

Scenes

Scenes can be used in Visual® Lighting to generate separate layouts for your general lighting and emergency calculations. From the **Main Menu**, select the **Scenes** option to open the Scenes Manager. (Figure 21) Use the **Active Scene** drop-down at the top of the menu to switch to the Emergency scene.

Visual Lighting 3.10.16 Active Scene: Emergency Office Building

Change active scene to edit its luminaire and grid settings:

Luminaires				Calculation Areas				Direct Only Off On	
Label	Catalog	Quantity	On	Output %	Label	Detail	Room	Floor	Included
A-EM	2BLT2 20L ADP 347 LP830 EM	12	<input checked="" type="checkbox"/>	100%	Breakroom 4	Workplane	Breakroom 4	Level 1	
Schedule A	2BLT2 20L ADP 347 LP830	262	<input type="checkbox"/>	100%	EM - Breakroom 4	Floor	Breakroom 4	Level 1	<input checked="" type="checkbox"/>
					EM - HR Office 3	Floor	HR Office 3	Level 1	<input checked="" type="checkbox"/>
					EM - President Office 1	Floor	President Office 1	Level 1	<input checked="" type="checkbox"/>
					HR Office 3	Workplane	HR Office 3	Level 1	
					IT Office 5	Workplane	IT Office 5	Level 1	
					Meeting Room 2	Workplane	Meeting Room 2	Level 1	
					President Office 1	Workplane	President Office 1	Level 1	

Figure 21. Scene Manager

Select the **Luminaires** and the calculation **Grids** that should contribute to the Emergency calculation and modify the output of the luminaire as necessary. Returning to the Design, with Emergency set as the **Active Scene**, run the **Calculate** command to generate new results.

The Active Scene drop down selection will determine which results are seen in the Design Environment, the Quick Results tab, the luminaire Schedule, and the Project Results table. In each of those, swap the Active Scene to see specific layouts, luminaires and results per scene. Calculation results will also be stored in each scene, so changes or calculations being run in one, will not stale results in another.

Materials

Visual® Lighting captures any materials associated to objects in the Revit project. They can be reviewed in the **Materials** section of the **Main Menu**. For each material, a color and reflectance percentage based on that color are assigned. Double click in the field to enter a new Reflectance Percentage for a material. This value will affect calculations in the design but will not alter the properties of the material when returning to Revit. These values will also persist whenever the project is returned to Visual® Lighting.

New Materials can also be created using the **Add** command at the top of the window. Rename and assign the necessary values to the new material in the list.

Within the design, materials associated with surfaces can be overwritten through the surface properties. Select a surface with the Shaded Display mode active to view properties. Use the Override filed to replace the material with an alternate option. This change will affect calculations in Visual® Lighting but not make changes when returned to the Revit project. This change will also persist whenever the project is returned to Visual® Lighting. Surfaces can also be assigned to other categories in the project, for simpler group control.

Categories

The categories of objects are captured when projects are imported from Revit. They are organized under the **Project Browser**. For categories that make up a large portion of the objects in the project, a small flame icon will identify them on the list. (Figure 22) Hover over the icon to see precisely the impact on the design.

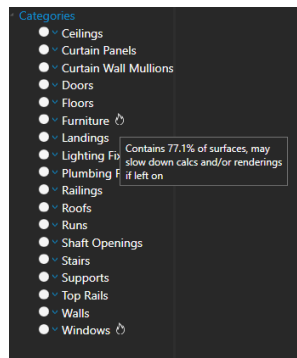


Figure 22. Categories Figure

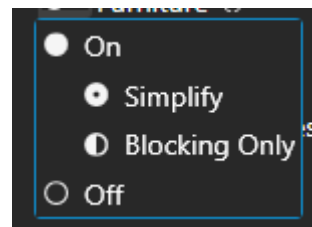


Figure 23. Visibility and Calculation Control

Each Category also has a drop down to provide individual control over how those objects impact calculation and rendering. (Figure 23). Categories that are set to **On** will be visible in the design and fully impact calculation. Set objects to **Simplify** to reduce the complexity of the objects during rendering, improving calculation time. **Blocking Only** will include the object when calculating the space, to generate appropriate shadows, but without the object itself rendered in the image. It will appear flat compared to the rest of the environment. Objects that are **Off** will not be included in calculations or the rendering and will not appear at all in the design.

Updating Revit Projects

Return to Revit

To return any progress made in the Visual® Lighting plugin back to Revit, select **To Revit** from the bottom of the **Main Menu**. The Visual® Lighting window will close and the dialogue box enforcing the Revit lockdown will change. Select Continue to return the project updates to Revit. Revit will process any added luminaires, calculation zones, and reports returned from Visual® Lighting.

Revit Deliverables

After returning to Revit, new plans and views are added to the design, as not to disrupt the original architectural plans. The new luminaires and Calculation Grids can be viewed in the new Visual Analysis views.

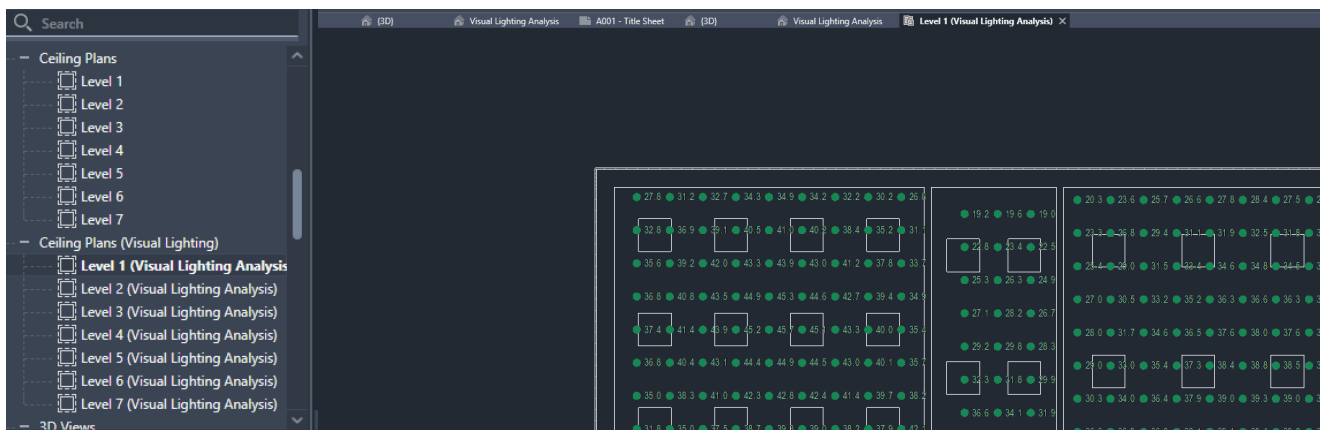


Figure 24. Visual Analysis Views

Values on Calculation grids will be displayed in these views. These values will also persist as the project is closed and reopened. For any changes that may occur in the Revit project, simply return to Visual® Lighting, make any necessary updates, and return the updates to Revit. Visual® Lighting supports a full round-trip workflow, to continually be able to refine your design.

Visual Luminaires that are returned are fully functional Revit luminaires, categorized as *Lighting Fixtures*.

Visual® Lighting will also return prebuilt luminaire schedules and calculation reports. These are added to the Schedules/Quantities section in Revit's project manager. These can be selected and placed in Revit print pages.

A	B	C	D	E	F	G	H	I	J	K
Label	Detail	Room	Floor	TargetAverage	Average	AverageBelowTar	Maximum	Minimum	MaxMin	AvellMin
A/V Room 8	Workplane	A/V Room 8	Level 1	30	32.8	False	39.7	23.0	1.7:1	1.4:1
Breakroom 4	Workplane	Breakroom 4	Level 1	30	38.0	False	45.2	27.5	1.6:1	1.4:1
Cafe 10	Workplane	Cafe 10	Level 1	30	32.8	False	43.1	18.7	2.3:1	1.3:1
Hall 19	Workplane	Hall 19	Level 1	30	34.5	False	49.3	27.1	1.8:1	1.3:1
Hallway 11	Workplane	Hallway 11	Level 1	30	33.9	False	47.2	17.8	2.7:1	1.9:1
HR Office 3	Workplane	HR Office 3	Level 1	30	37.6	False	44.9	27.0	1.7:1	1.4:1
IT Office 5	Workplane	IT Office 5	Level 1	30	34.0	False	40.9	22.7	1.8:1	1.5:1
Meeting Room 2	Workplane	Meeting Room 2	Level 1	30	32.2	False	48.6	19.9	2.4:1	1.6:1
Office 16	Workplane	Office 16	Level 1	30	29.2	True	56.2	4.6	12.2:1	6.3:1
Office 29	Workplane	Office 29	Level 1	30	31.7	False	54.1	5.2	10.4:1	6.1:1
President Office 1	Workplane	President Office 1	Level 1	30	38.2	False	45.7	26.8	1.7:1	1.4:1
Restroom 177	Workplane	Restroom 177	Level 1	30	18.4	True	30.7	0.2	153.5:1	92.0:1
Restroom 278	Workplane	Restroom 278	Level 1	30	24.6	True	31.2	6.9	4.5:1	3.6:1
Stairway 16	Workplane	Stairway 16	Level 1	30	14.6	True	28.1	1.9	14.8:1	7.7:1

Figure 25. Schedules and Reports

Support and FAQ

Software Support

For any questions that you may have while running Visual® Lighting, please reach out to our support channel and VisualSupport@AcuityBrands.com

FAQ

<i>Q: Do I need Revit to access this plugin?</i>	A: Yes. Users require an active license for Revit 2024/2025/2026
<i>Q: Can I use this with Revit LT?</i>	A: No, unfortunately Revit LT does not support plugins, which is how Visual® Lighting works.
<i>Q: Can I use this tool for outdoor lighting calculations?</i>	A: Currently, no. This build is focused on providing an interior solution. Local site lighting and floodlighting are on the roadmap for follow up features.
<i>Q: What kind of specs do I need to run Visual® Lighting?</i>	A: We recommend using the same minimum specs recommended to run Autodesk Revit. Visual will not require any further capabilities.