Update Guide
Release 7.8

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INTRODUCTION

TracePro 7.8 is a minor release. This document serves as a guide for you to transition from TracePro 7.7 to 7.8. The major enhancements in TracePro 7.8 are new features for Path Sort Tables, True Color plots, and performance improvements for Photorealistic Rendering.

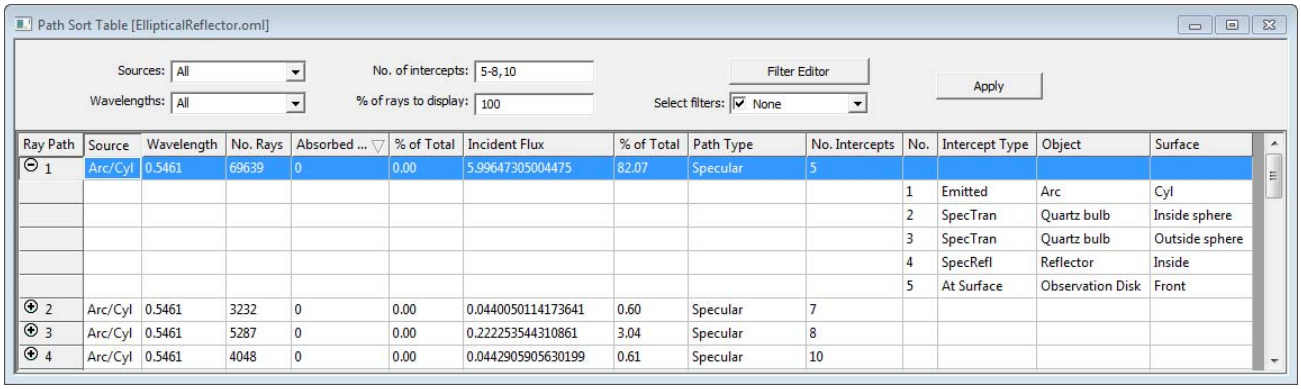
WHAT'S NEW IN TRACEPRO 7.8?

Changes in TracePro 7.8 compared to 7.7 are summarized as follows:

- New Path Sort Filtering for tailoring the Path Sort Table.
- Adjustable Gamma for True Color plots

PATH SORT FILTERING

The Part Sort Table has been greatly enhanced with new controls for refining the results of path sorting. New controls have been added to the Path Sort Table window as shown in Figure 1, and you can also define filters using Boolean operators for analyzing the paths.



Ray Path	Source	Wavelength	No. Rays	Absorbed ...	% of Total	Incident Flux	% of Total	Path Type	No. Intercepts	No.	Intercept Type	Object	Surface
1	Arc/Cyl	0.5461	69639	0	0.00	5.99647305004475	82.07	Specular	5				
										1	Emitted	Arc	Cyl
										2	SpecTran	Quartz bulb	Inside sphere
										3	SpecTran	Quartz bulb	Outside sphere
										4	SpecRefl	Reflector	Inside
										5	At Surface	Observation Disk	Front
2	Arc/Cyl	0.5461	3232	0	0.00	0.0440050114173641	0.60	Specular	7				
3	Arc/Cyl	0.5461	5287	0	0.00	0.222253544310861	3.04	Specular	8				
4	Arc/Cyl	0.5461	4048	0	0.00	0.0442905905630199	0.61	Specular	10				

Figure 1. Path Sort Table window with new controls at the top.

Path Sort Table Settings

Path Sort Table settings enable you to customize the filtering of paths according to your needs. You can filter by source, wavelength, and number of intercepts along a path. You can also choose the percent of rays to display (when **Analysis|Display Selected Paths** is selected), or make custom filters to further control the table. The settings are summarized in Table 1.

Table 1. Path Sort Table Settings

Sources	Select from the list which sources you wish to be included in the Path Sort Table.
Wavelengths	Select from the list which wavelengths you wish to be included in the Path Sort Table.
No. of intercepts	Filters the paths by the total number of ray-surface intercepts along a path. Enter intercepts and/or ranges of intercepts separated by commas. For example: 5-8,10,12
% of rays to display	When **Analysis|Display Selected Paths** is checked, this entry controls the percent of rays matching the selection that will be displayed.
Filter Editor	Opens the Path Sort Filter Editor window that allows you to define one or more filters for refining the path sort table.
Select filters	Apply one or more filters to the path sort table by using the checkbox for each filter.
Apply	Applies all the settings to the path sort table.

Path Sort Filter Editor

The Path Sort Filter Editor allows you to refine the path sort table by selecting which surfaces or objects must (or must not) be intersected by rays along the path. Surfaces and/or objects matched with intercept types can be combined together using Boolean AND and OR operators.

To edit filters, click the Filter Editor button in the Path Sort Table window. The Filter Editor window is shown in Figure 1. The meaning of each selection is summarized in Table 2.

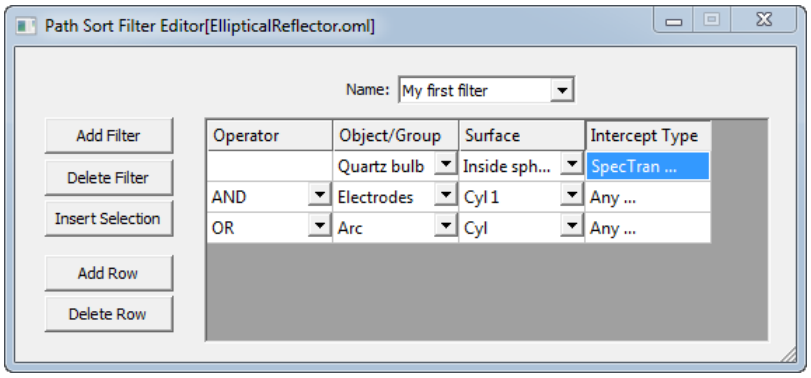


Figure 2. Path Sort Filter Editor.

Table 2. Path Sort Filter Editor items.

Name	Choose the name of the filter you wish to edit from the list.
Add Filter	Add a new filter for use by the current model's Path Sort Table.
Delete Filter	Delete the current filter.
Insert Selection	Add new row(s) to the filter, one row for each surface, object, or group selected in the Model Window for the current model.
Add Row	Add a (blank) row to the current filter.
Delete Row	Delete the selected row(s) in the current filter.
Operator	Select a Boolean operator (AND or OR) to be used to combine the result of the current row with the result of the previous row(s).
Object/Group	Select an object or System Tree group to be used in the current filter row.
Surface	Select a member surface of the selected Object/Group. Select <Any> to indicate that a ray intersecting any member surface of the object or group can satisfy the test. For bulk scatter intercept types (RandVolume or ImpVolume), the Surface selection is ignored.
Intercept Type	Open the Intercept Types window for selecting intercept types for the current row.

Path Sort Filter Intercept Types

To select which Intercept Types are used for the current row, click on the Intercept Type cell for the desired row to open the Intercept Types window as shown in Figure 3. You can select as many specific intercept types as you wish, and they will be used in the current row of the filter.

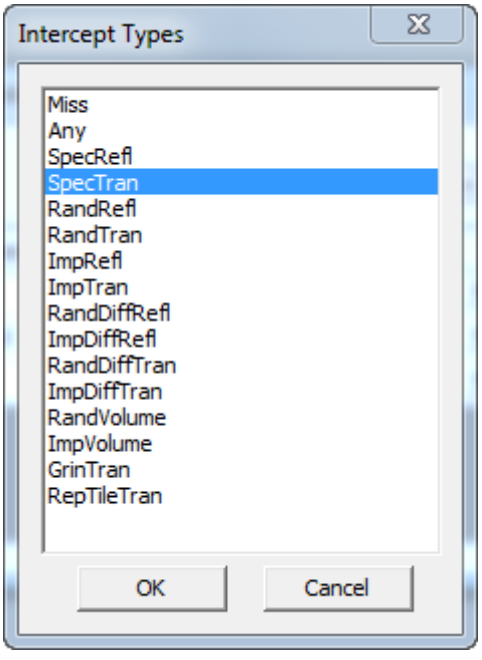


Figure 3. Path Sort Filter Intercept Types selection window.

Miss

Select **Miss** to specify that all rays must miss the selected surface(s) in order to pass the filter. Selecting Miss will clear all other Intercept Type selections.

Any

Select **Any** to specify that a ray of any intercept type will pass the filter. Selecting Any will clear all other Intercept Type selections.

ADJUSTABLE BRIGHTNESS, CONTRAST, AND GAMMA FOR TRUE COLOR PLOTS

The Photorealistic Rendering Options controls for Brightness, Contrast and Gamma have been changed to numeric input controls as shown in Figure 4. In addition, all plots that have a True Color option now have controls for Brightness, Contrast, and Gamma when True Color is selected. These controls for Irradiance/Illuminance Maps, Luminance Maps, and 3D Irradiance/Illuminance Maps only appear when True Color is selected, as shown in Figure 5, Figure 6, and Figure 7 respectively.

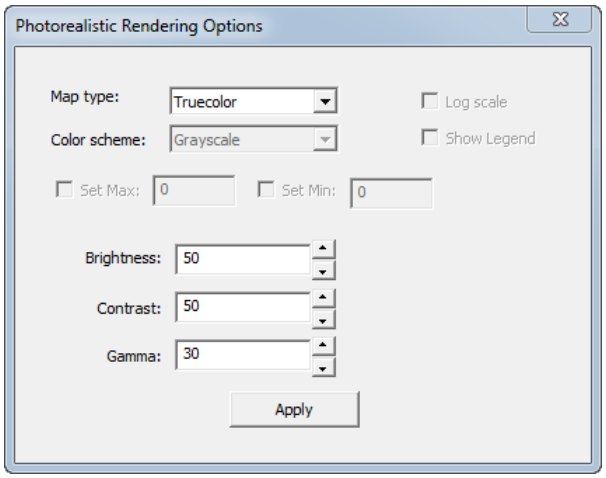


Figure 4. Photorealistic Rendering Options with new Gamma control.

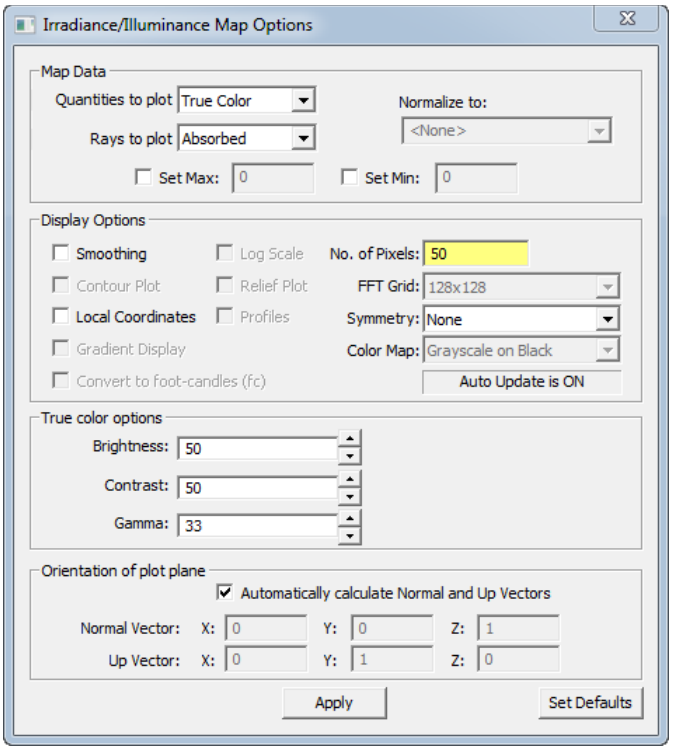


Figure 5. Irradiance/Illuminance Map Options dialog box showing Brightness, Contrast, and Gamma settings when *Quantities to plot* is set to True Color.

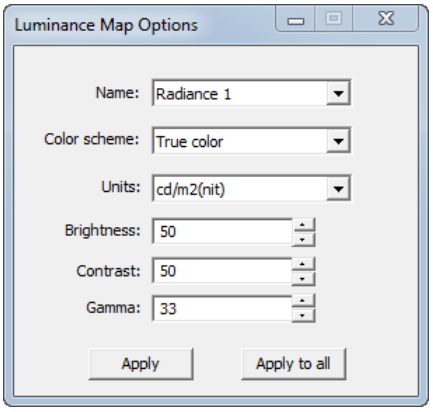


Figure 6. Luminance Map Options dialog box showing Brightness, Contrast, and Gamma settings when *Color scheme* is set to True Color.

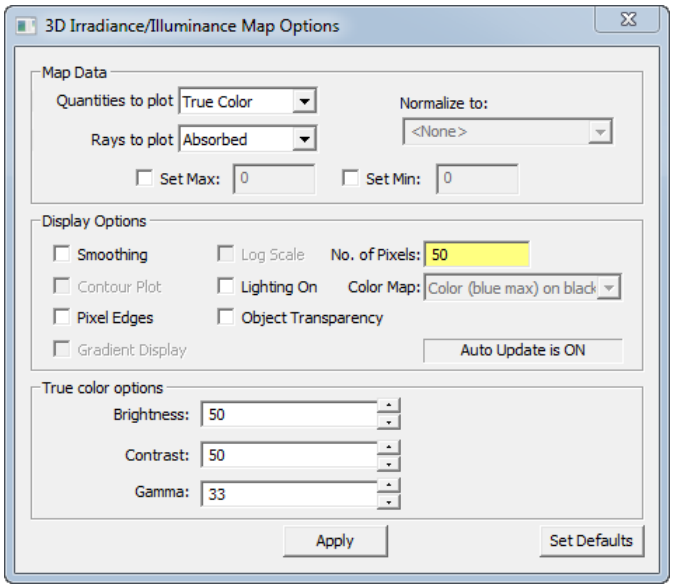


Figure 7. 3D Irradiance/Illuminance Map Options dialog box showing Brightness, Contrast, and Gamma settings when *Quantities to plot* is set to True Color.