

# TracePro Revision History

## TracePro 7.8.1 Release

- New: Add an application-wide random number generator accessible through Scheme:  
(tracepro:get-random-number )
- New: The Face Selector Tool has been enhanced. Previously, the face selector tool selected all faces that had any portion of their bounding box inside the selection region. Now, this tool can also be used to select only the faces whose entire bounding box is inside the selection region. There are two ways the user can implement this. 1.) By creating the selection region in a right-to-left manner. OR 2.) By holding the shift key while creating the selection region.
- New: Add new RepTile geometry shape – Pyramid. Allow control of number of faces and angles on pyramid geometry – 6939
- New: Enhance (geometry:part ) to accept all formats that TracePro can open
- Update: Fix crash in property editors when deleting some data
- Update: Fix multi-byte conversion issues in the path for CAD file export
- Update: Fix temperature interpolation issues on surfaces that contained temperature distributions whose boundary was smaller than the surface boundary
- Update: Data directory can now be nulled out with an empty string
- Update: Properly truncate ray distribution to match Grid Boundary in a Grid Source with Spatial Gaussian Distribution – uniform flux / weighted position – 7191
- Update: Fix uninitialized temperature issue with temperature distributions on surfaces
- Update: Restore code to calculate local bounding box for a Coating DLL
- Update: Fix raytracing of anisotropic grating where only the azimuth = 0 data was used – 7196
- Update: Update macro reference description of (property:apply surface ... )
- Update: Fix localZ calculation for irregular cylinders
- Update: Allow the application of cylindrical Temperature distributions to irregularly bounded surface sources
- Update: Disable origin entry when circular and cylindrical faces match the surface boundaries for Temperature Distribution properties
- Update: Fix Help for surface property import/export format
- Update: Improve documentation for coincident surfaces – 7164
- Update: Disable importing of Zernike polynomials which led to a crash – 7102
- Update: Fix Anisotropic surface property with ABg BSDF – the azimuthal variation of the BSDF was ignored – 7079
- Update: The macro command (property:remove-importance-targets ) now also removes body targets as well as face targets – 7184
- Update: Fix in 1D Table BSDF and Asymmetric Table BSDF when used for BTDF beyond the critical angle
- Update: Fix for hanging bug with 1D Table BSDF found internally
- Update: Change wording in message to handle all types of Surface Properties that cannot be plotted in the Surface Property Viewer – 7155
- Update: Fix file format issue of exported LDT files when using different symmetry options in Candela Plots – 7130
- Update: Fix bug in Path Sort filtering
- Update: Fix internally found bug importing lenses with central obscurations from OSLO
- Update: Fix unclear error message when ray tracing with grating with zero grating spacing – 7111
- Update: Resolve issue in Check For Updates for Early Access releases
- Update: Fix to TIR calculation on a medium with large extinction coefficient – 7132
- Update: Update macro reference documentation for example listed for (face:spline ) – 3459
- Update: Fix typo on syntax line for (entity:selected? ) – 7096
- Update: Properly update model tree after Boolean Unite operation – 7094

## **TracePro Utilities Revisions...**

### **BSDF Converter:**

Update: Fix the issue that when attempt to export property results in “Action Forbidden! Negative Solved Absorptance!” message – 7160

### **IES/LDT Analysis:**

Update: Fix the issue that when using ultra high resolution display, the UI layout is wrong

Update: Fix the issue of importing LDT file with symmetry option 3: C90-C270 - 7130

Update: Fix the issue that sending Candela result to the IES/LDT tool will result in the error – “Incorrect file format” – 7165

### **Surface Source Property Generator:**

New: Add header and version info in the saved file

New: Add capability of editing spectrum in log scale

Update: Fix the issue that when using ultra high resolution display, the UI layout is wrong

### **Texture Optimizer II:**

New: Add new supported reptile geometry - Pyramid

New: Add new dot pattern – 1D grid

New: Add new boundary operation – Reflection

Update: Remove the option of loading boundary from file which is not completely support

Update: Fix the issue that when 3 continuous worse result occurs, the optimization won't stop

Update: Fix the issue that when loading void bitmap, press Accept button will crash program – 7185

Update: Fix the issue that when minimizing the Dot generator window or Optimization window, the utility crashes

Update: Fix the issue that when deleting or clearing source in the density map editor, the deleted source is still showing

Update: Fix the issue that when finishing density map editor, the main window is behind

Update: Fix the issue that generating dot as density map is not working

### **3D Interactive Optimizer:**

New: Add new features of setting segment length and y-angle

New: Add capability of pasting bitmap in the Candela and Irradiance target editors

New: Add capability of pasting bitmap from a copied file – 7170

New: Add capability of setting map options for each operand

New: Add new features of copying/pasting operand

New: Add “Uniform profile” button in the Irradiance profile definer as a short cut to generate uniform target

New: Add new variable type – Function for the Periodic segment

New: Add a “Point Info” Button in the Surface List Window for displaying the control point is set as pick-up and symmetric

New: Add new properties – “Center feature option” for the Periodic segment

New: Add new properties – “Shift” for the Periodic segment

New: Add new segment properties – “Absorptive” as the flag that ray stopped when hitting it in 2D real-time raytrace

New: Add new object type – “Advanced Sweep Object” – 7163

New: Add new capability of generating a thin sheet object in TracePro by extruding a path

New: Add capability of saving visible flag in Object Window and Output flag in Optimization window in the saved file

New: Add Post-after-scheme row in the Optimization window

New: Add new periodic feature – Trapedium

New: Add new method for pasting bitmap – Vector mode

New: Add new support to asymmetric profile for a biaxial object  
New: Add sorting of wavelength in the Irradiance map option  
Update: Fix the issue that when modifying object the surface list is not updated if there is any newly added surface  
Update: Fix the issue that generated object doesn't agree with surface view – 7195  
Update: Fix the issue that changing position in property window cannot be undo/redo  
Update: Fix the issue that the name of new object always be “Object 0”  
Update: Fix the issue that control point sometimes lose the capability of moving – 7014  
Update: Fix the issue that when editing Freeform surface – Radial type, if moving control points on base profile to one side, program crashed.  
Update: Fix the issue that when setting language and Region to Turkey, loading io2 file throws exception – 7181  
Update: Change the default value of opacity to 0.5  
Update: Fix the issue that the variable setting with a local position in Conic segment is not saved – 7175  
Update: Fix the issue that post-scheme is not working in optimization  
Update: Refresh TracePro model tree view after export Object or Surface from Object and Surface Viewer – 7167  
Update: Fix the issue that generated ellipsoid in TracePro has different dimension with the setup in 3D Interactive Optimizer – 7091  
Update: Fix the issue that fail to generate an Extruded Object in TracePro when Windows Language and Region is set as Spanish – 7112  
Update: Fix the issue that the light source's divergence is incorrect – 7109  
Update: Fix the issue that when modifying light source, utility hangs – 7108  
Update: Fix the issue when updating model from the Optimization Log window, all disabled variables will be enabled automatically  
Update: Fix the issue that selecting control point in variable list will crash program  
Update: Fix the issue that after updating variable, the optimization dialog has not been updated as well  
Update: Fix the error that loading a saved file crashes utility if the saved file contains control points with ID that is larger than the number of control points  
Update: Fix the issue that in pickup mode, selecting a 3D path will deactivate the pickup mode  
Update: Fix the issue that Sweep body cannot be copied  
Update: Fix the issue that 3D Path is not editable if there are other profiles selected  
Update: Fix the issue that when loading a saved file with missing pickup link, an error will show up. Now it will automatically remove the missing pickup from the object

#### Solar Emulator:

Update: Fix the issue that the result of exporting Sun model has different center of the exported Clear Sky model – 7159

#### Analysis Toolkit:

New: Add new switchable mode – Multiple document interface  
Update: Set the 3D Candela view opened when launching utility

#### Lighting Toolkit:

Update: Fix Regulation Table output from a Rectangular Iso Candela Plot – 7174

## TracePro 7.8.0 Release

New: Path Sort Filtering  
New: Adjustable Brightness, Contrast, and Gamma for True Color Plots  
New: Add command (rayrtace:only-these-sources ...) to support UI capability of right-click/Trace Selection in the Source Tree – 7060

New: Enhancements to the use of Temperature Distribution properties – 7002

New: Add capability to select “hollow” or “solid” when inserting a tube – 7012

New: Add capability to select all object/surfaces with the same name – 7017

New: Add “OK to All” button in Surface Property Editor to respond to Solve For messages – 3740

New: IES TM-25 Ray File format is now supported – 6953

Update: Fix RepTile display for the case with Use Surface Bounds and the Origin for tile(0,0) is not at the center of the surface – 7084

Update: Fix the incorrect luminance value for calculated wavelength in Photo Realistic Rendering

Update: Update documentation to (property:apply-annular-importance-target ) and (property:apply-rectangular-importance-target ) – 7043

Update: Fix problem of incorrect bulk absorbed flux with bulk scatter and fluorescence property and Fluorescence setting turned Off

Update: Documentation updates to the Macro Reference – 7053

Update: Fix photo-realistic rendering problem with sources with calculated wavelengths

Update: Fix program crash due to stack overflow on a specific customer model – 7068

Update: Fix Surface Property Editor’s incorrect display of Phase Refl after copying or editing a property – 7065

Update: Fix potential crash that could occur when using two-sided surface properties

Update: Fix small memory leak that could occur when switching databases in-session (rare)

Update: Limit raytrace warning messages that are so prevalent that they adversely impact the raytrace time – 6487

Update: Limit conserve energy error messages to 10 for any given property that has conservation of energy issues

Update: Fix database transaction problem that could occur when performing a Solve For on a very large data set – 7058

Update: 3D Irradiance Maps now work on RepTile surfaces

Update: Fix issue with Table BSDF property as part of a composite BSDF

Update: Add an optional argument to the following Scheme command to explicitly turn on or turn off the display: (view:set-display-objects ... ), (view:set-display-wcs ... ), and (view:set-display-object-wcs ... ). Without the optional argument the display flag is toggled.

Update: Fix RepTile Analysis results – some analysis results erroneously include the incident ray with the CAD surface and the RepTile surface. The results should only include the RepTile surface. – 7054

Update: Fix raytracing problem with gratings with ray splitting off and polarization on

Update: Do not allow the creation of direction sensitive surface properties that have the same material property on both sides – 7035

Update: Fix the object name being displayed in the Progress dialog if it was previously changed in-session – 7046

Update: Add scheme command: (tools:measure-distance ... ) – 7029

Update: Fix raytracing issue on a surface with a Direction Sensitive Grating and a Temperature Distribution – 7026

Update: Save single zoom window option

Update: Correction to calculation of plane of incidence in BSDF evaluation when ‘Use fixed axis for zero-azimuth for asymmetric scatter’ is not checked

Update: Decouple the asymmetric scatter axis from the grating up vector

Update: Turn on ‘Asymmetric Axis’ page for asymmetrical scatter for grating properties too if an asymmetric scatter model is used

Update: Ensure the grating vector is always available for data entry when a grating property is to be applied – it was turned off for rare cases

Update: In the Surface Property Editor - fix indexing issue into Table BSDF array when a grating is also in the property

Update: Fix file naming when importing CAD files with 4 letter extension (such as \*.step)

Update: Fix minor glitch in checking for updates on startup

Update: Fix indexing problem in evaluating surface temperature distributions

Update: Update documentation with regards to Display Selected Rays for Irradiance/Illuminance Maps – 6221

Update: Update documentation for Photorealistic Rendering with regards to brightness, contrast, and gamma – 7025

Update: Fix displaying multiple objects bug – 7033

Update: Fix ray generation for Gaussian Spatial and Angular Distribution in Grid Sources. Some rays were being generated outside the grid boundary – 7030

Update: Fix crash on user-supplied model – 7031

Update: Implement database converter for very old Access property databases – 5052

Update: Keep group nodes intact when inserting a part – 6624, 6945

Update: Improve macro performance by limiting reloading of the system tree to model modifications only – 6828

Update: Fix raytrace error – rays incident on temperature-dependent Grating were not responding to Temperature Distribution – 7020

Update: Documentation fix to corrupted Macro Reference pages – 7018, 7019

Update: Skip message for non-ANSI characters – 6165

Update: Add an optional string parameter to the following macro commands to rename an entity, grid source, or file source:

- (edit:scale ... )
- (edit:move ... )
- (edit:rotate ... )
- (edit:move-grid-source ... )
- (edit:move-file-source ... )
- (edit:rotate-grid-source ... )
- (edit:rotate-file-source ... )

Update: Set ‘Solve For’ in dialog using value in database and automatically use this solve if the property does not conserve energy – 7011

Update: Restore and improve raytrace performance on machines with many cores and using new series of Quadro graphics cards – 7001

Update: Save material property when importing an OSLO file

Update: Enable tooltip on “Set Defaults” button. Add a page in options to reset defaults. – 7000

Update: Installer will proceed with TracePro installation even if Notepad++ is not successfully installed to the (proper) default directory – 6764

Update: Add units to the legend of luminance view in Photorealistic Rendering – 7009

Update: Greatly improve performance of displaying selected paths – 7008

Update: Fix to Photorealistic Rendering raytracing in cases with a Perfect Absorber applied to a RepTile Surface and/or RepTile Geometry – 6995

Update: Improvements to Grid Source settings in lens design import

Update: Fix incorrect raytrace with octree voxels on customer-supplied model – 6999

### **TracePro Utilities Revisions...**

#### **BSDF Converter:**

New: Add support to RPC Photonics Rawdata files

Update: Fix the file support to DiffractMod format – 6983

#### **Fluorescence Property Generator:**

New: Add new capability of multiple emission spectra

#### **IES/LDT Analysis:**

Update: Fix the issue that the button to save file or close dialog is missing – 7044

Update: Changed the wording “Wanted Intensity (ratio)” to “Intensity (ratio)”

#### **Texture Optimizer II:**

Update: Fix the issue that Enhanced Prism cannot be created as real geometries in TracePro correctly

Update: Fix the issue that different sign of CV will cause different sag

Update: Changes the behavior that when changing conic type to any except Free, the “Use Asphere terms?”

option will be automatically set to false

Update: Add message to remind users the emitting flux or the collected energies on target plane probably is too low – 7021

Update: Fix the issue that the dots are not loaded when loading position files in the current cells

Update: Fix the issue that saved distribution method cannot be updated to UI when loading the saved file – 6998

Update: Fix the crash when starting optimization if the input parameters are empty – 6998

### 3D Interactive Optimizer:

New: Add the feature that when user clicking on the variable the corresponding control point will be selected in the surface view

New: Add the capability of Importing/Exporting profile surface from/to file – 7055

New: Add the capability of copying bitmap layer

New: Highlight the worst solution in Optimization Log – 6782

New: Add capability of exporting to /importing from text file for a typeB surface

New: Add new option for converting a symmetric profile to an asymmetric profile

Update: Fix the issue that after added/modified object, the application will go behind when the dialog closed

Update: Fix the issue that For-Next loop cannot allow the start value is negative

Update: Fix the issue that optimization fails when Target Surface Name includes a quotation mark – 6996

Update: Fix the issue that the pickup point is movable

Update: Fix the issue that loading radial freeform surface with pickup will produce error message

Update: Fix the issue that saving bitmap layer, the opacity value will affect the saved bitmap

Update: Improve the responsibility of After-scheme editor

Update: Fix the issue that if the TIR lens is too tall, the generated object is truncated

Update: Fix the issue of calculating beam width if the peak is not at center

Update: Fix the issue that value type will not be recognized correctly for user-define variable

Update: Fix the issue that entering XY Polynomial setup dialog will crash utility

Update: Fix the issue that for some cases, updating property dialog will leave one row empty

Update: Fix the issue if change point value in the irradiance profile target by manual input with path definition, the new data won't be updated

Update: Fix the issue of wrong calculated conic curve if the asphere terms are existing

Update: Fix the issue that after left clicking on the checkbox for a surface (1) the box is NOT checked and (2) the text of the surface name is NOT highlighted in blue – 7039

Update: Fix the issue that right-click on one of the item in optimization log is not doing anything – 7038

Update: Fix the issue that if the material property containing '\ ' character, TracePro will crash – 7010

### Solar Emulator:

New: Add lines for the attentions needed for the exported file source and surface source property – 7098

Update: Fix the wrong rotation direction of the sky source when pupil shape is rectangular

Update: Rewording “Hot limit” to “Tilt limit”

Update: Fix the issue of mapping location on Google map due to IE compatibility issue – 6549

### Analysis Toolkit:

New: Add capability of reading binary source file

New: Add capability of reading irradiance map

New: Add new analysis – NEMA Types

New: Add new analysis – “RCG Rectangular Map”

New: Add support to TracePro irradiance map format

Update: Fix saving of new regulation results – 7069

## TracePro 7.7.2 Release

- Update: Restore (read-event ) macro functionality – this is a regression in 7.7.0 – 6992
- Update: Fix erroneous ‘does not conserve energy’ message for a grating in the Surface Property Editor – 6993
- Update: Label the flux column with either radiometric or photometric units in the Apply Surface Source dialog – 4680
- Update: Fix Photorealistic Rendering with RepTile and scattering Surface Property on RepTile geometry – 6902
- Update: Replace combo boxes with text boxes in Surface Source Property Editor – 5420
- Update: True color options for brightness, contrast, and gamma now use spin controls instead of sliders
- Update: Fix bilinear interpolation in ies type A and type B files – 6988
- Update: Fix problem with progress dialog for photon tracing in photorendering with surface sources in photometric units.
- Update: Improve exception handling during ray tracing
- Update: Fix save-as bmp accidently pops up ies dialog – 6985
- Update: Fix save-as bmp problem – 6984
- Update: Fix ray history file header with exit surface name – 3575
- Update: Save each exit surface ray history to a separate file – 6838
- Update: Fix problem in photorealistic rendering where more photons were traced than specified by the user
- Update: Display the cancel raytrace warning message from the progress dialog when the option is set
- Update: Set last ray direction to null in ray history to avoid errant data
- Update: Change default to use axis for asymmetric BSDF properties
- Update: Change simulation filename after saving as another document – 6693

## TracePro Utilities Revisions...

### General:

- Update: Fix the truncated text issue – 6956

### IES/LDT Analysis:

- Update: Fix the issue of displaying incorrect value for Field Integration Lumens – 6978

### 3D Interactive Optimizer:

- Update: Fix the issue that program crashes when input “()” in the after-scheme editor
- Update: Fix the issue that when loading a saved conic reflector, the cc and cv values are not correctly updated
- Update: Fix the issue that when moving the segment points for a conic reflector, the control points will move by double distances
- Update: Fix the issue that TracePro hangs after sending a biaxial TIR object to TracePro – 6899
- Update: Fix the European Decimal Separator issue – 6987

## TracePro 7.7.1 Release

- Update: Fix problem interpolating customer-supplied 2-sided grating property for edge case – 6976
- Update: For measurements involving a surface, allow the surface to be selected in the system tree – 6881
- Update: Change grid source beam spatial profile label – 6775
- Update: Greatly improve performance in Path Sort Table – 6968
- Update: Ensure context file is generated from the correct license in the Troubleshooter – 6970
- Update: Fix erroneous flux value for selected rays on a Polar Iso-Candela Plot – 6914
- Update: Remove menu item “Open in IES...” for polar iso plot – 6934
- Update: Properly remove progress dialog in the event of an exception during raytracing
- Update: Fix exception thrown when tracing without a source (this is a regression in 7.7.0) – 6975
- Update: Save and restore min rays setting when doing photorealistic rendering

Update: Properly handle user interactive with the color grid control

Update: Fix crash when picking in the Path Sort Table of a model that isn't active when there is an Irradiance Map displayed. Also fix crash for closing the Path Sort Table under similar circumstances.

### **TracePro Utilities Revisions...**

BSDF Converter:

Update: Fix the issue that loading an Imaging Sphere Version:1.5.10.0 BSDF file with all data equal to 0.0, utility crashes – 6964

Update: Fix the issue that the file type of Diffract Mod is not in the list – 6972

IES/LDT Analysis:

Update: Fix the issue that when opening LDT file errors and omissions in display and text – 6973

3D Interactive Optimizer:

Update: Change the method of creating biaxial object to avoid crash when sending to TracePro – 6946

### **TracePro 7.7.0 Release**

New: Candela Viewer

New: Raytrace Mode Prompt

New: Property Database Update

New: Viewing Candela Plots from the Simulation File Manager

New: New Options for Photorealistic Rendering

New: Automotive Lighting Toolkit – this is available as BETA software

Update: Performance improvements for Photorealistic Rendering

Update: The Scheme command (edit:surface-sweep ... ) now works with wires and edges

Update: Fix crash that could happen when using an anisotropic property from GSolver – 6937

Update: Fix Progress Dialog which errantly reported pessimistic estimates to complete photon trace for large photorealistic renderings – 6865

Update: Fix rare crash when a ray hits the improper branch of a lemon or apple torus used in RepTile

Update: Change location of online user manual – 6940

Update: Fix torus raytracing issue on submitted model – 6930

Update: Fix normalization of weights in Apply Properties Surface Source when using Surface Source property with discrete wavelengths – 6913

Update: Each property editor's import function will now import all properties within the file, regardless of their type – 3579

Update: Fix hyperbolic reflector UI problem – incorrect values were displayed in dialog box – 6906

Update: Fix loading of IES data for certain Candela options – 6907

Update: Fix crash after changing surface source type in source editor – 6908

Update: The Scheme function (analysis:candela-save-ies ... ) has been deprecated. It has been replaced with the following functions:

(analysis:candela-save-ies-type-a ... )

(analysis:candela-save-ies-type-b ... )

(analysis:candela-save-ies-type-c ... )

Update: Overhaul of saving IES files – 6852, 6955

Update: Fix bug associated with Candela options regarding setting contour levels – 6893

Update: Expose better information to user if a file exception occurs. Some examples of this are sharing violations or a full disk.

Update: Fix failure to import GRIN data with the OSLO translator – 1025

Update: Add two scheme commands: (analysis:ray-history-close ) and (analysis:polarization-maps-close ) – 1119

Update: Documentation update to Scheme Macro Reference descriptions for Path Sort table commands



Update: Fix surface selection when the surface is blocked by an importance target in Render, Wireframe, or Hidden Line view – 6760

Update: Ensure path sort table is properly cleared before each raytrace

Update: Change dialog name to “Path Sort Table” to agree with name on Analysis menu – 6835

Update: Fix issues with updating the status bar on the Select Rays dialog – 6879

Update: Add a retry capability to open sim files on a sharing violation. This is a rare occurrence that was discovered with an aggressive virus-checking program interfering with a long simulation run.

Update: Fix a rare race condition with regards to the static random number generator

Update: The Raytrace Report has been simplified – 6872

Update: Fix GRIN ray tracing error at coincident surfaces – 6887

Update: Ensure all text files saved to disk adhere to the “Save text file in Unicode format” TracePro option

Update: Include model name in header of RGB raw data file from photorealistic rendering

Update: Immediately save oml file to disk after open a CAD translated or lens design translated file

Update: Prevent crash when adding another wavelength, temperature, or incident angle to a property with no scattering – 6877

Update: Enhancements to saved ies format – 6834, 6738

Update: More efficient use of random number generator when generating a random ray direction

Update: Improvements to lens design import of designs with global reference surfaces

Update: Fix OSLO translator bug – OSLO files specifies “tilt, then decenter” but TracePro is translating as “decenter, then tilt” – 4009

Update: Updates to online help – 2652, 4829, 6245, 6842

### **TracePro Utilities Revisions...**

#### Bitmap Source:

New: Add new capability of exporting ray file in binary format – 6595

New: Add option for rays to start from the Scene, Target or a third plane between the Scene and Target – 5779

#### BSDF Converter:

New: Add capability of loading data from Diffract MOD – 6894

Update: Fix the issue that getting error message when attempting to update BSDF-beta plot after entering ABg values, when no data file is loaded – 6623

#### IES/LDT Analysis:

New: Add more preset views for the 3D plot – 6935

Update: Fix issue of loading IES TypeA, TypeB, TypeC

Update: Fix issue of erroneously number of horizontal angles – 6952

Update: Increase the accuracy of RCG analysis

Update: Fix the incorrect RCG report in Street light analysis – 6890

Update: Fix the issue when an IES file is loaded, the value that appears in the Emission Field is incorrect (the integrated value should appear instead) – 5583

#### Texture Optimizer:

Update: Fix issues when language is set to Finnish – 6864

#### Texture Optimizer II:

New: Add new tool to edit density map

New: Add capability of saving and loading density files

New: Add capability of importing cells from data sheet and TracePro faces

Update: Fix issue that editing density map by sheet is not working correctly

Update: Fix issue that when optimizing dot pattern with many rows, the resulting pattern looks unsmooth

Update: Fix the issue that the last dot won't be read when importing the text file

Update: Fix issue with invalid conversion during optimization – 6880

### 3D Interactive Optimizer:

- New: Add the capability of opening the linked model in TracePro when loading the io2 file – 6784
- New: Add the feature of setting step number for a radial symmetric object with asymmetric profile – 6747
- New: Add new supported profile – freeform loop
- New: Add new supported surface type – freeform radial
- New: Add the ability to click on an iteration in the trend chart and have it highlighted in the optimization log – 6783
- Update: Fix the issue that pickup on segment point for the Freeform Radial Surface is not working – 6950
- Update: Fix the issue that extruded object created from symmetric profile with detailed structure, object only has structure on half the surface – 6943
- Update: Fix the issue that extruded object created from asymmetric profile with detailed structure, object has extra geometry – 6944
- Update: Fix the issue that when setting operand to Intensity, the optimizer will give an unhandled exception error when trying to start raytrace – 6928
- Update: Fix the issue that cannot re-open the saved io2 file with an intensity operand – 6928
- Update: Add description for the relationship between the control point locations and the resulting conic constant and curvature – 6848
- Update: Fix the issue that an error indicating a conversion error when launching program if the Window region and Language is set to French – 6884

### Solar Emulator:

- Update: Changed the input of vector data to 3 different fields to make input easier – 6910

## TracePro 7.6.4 Release

- Update: Improve the Scheme commands (property:apply-importance-target ... ) and (property:remove-importance-targets ... ) by permitting their use for multiple surface at once. The first parameter can now be either an entity or an entity list.
- Update: Fix for opening large binary ray files (larger than 2GB)
- Update: Fix rotational symmetry issue with Candela distribution plots – 6857
- Update: Fix to macro recording of file path when recording the saving of a path sort
- Update: Adjust conservation of energy tolerance for diffraction gratings slightly to account for numerical round-off – 4234
- Update: Fix File/Send – 6851
- Update: Fix updating to Display Selected Paths – 6863
- Update: Disable saving as ies or ldt formats from Iso Candela plots. These options are only available from Candela distributions plots. – 6853
- Update: Re-establish tabular file format for Candela distribution files, improve angular resolution of smoothed data, add header information for future use – 4320, 6827
- Update: Restore the use of an energy conservation tolerance for diffraction gratings (this is a regression from 7.4.3)
- Update: Add wavelength weight argument to (raytrace:apply-source-wavelengths ... ) – 6833
- Update: Ensure proper menu selections are available for TracePro Standard and TracePro LC
- Update: Fix crash when doing Path Sort Table on rays with GRIN intersections
- Update: Prevent low level attributes from being shared when they should not have been. This could have happened in very rare circumstances.
- Update: Slight performance improvement in radial polynomial calculations

## TracePro Utilities Revisions...

General:

Update: Updates to understand tabular file format of Candela distribution files that was re-established and improved with this release

Update: Fix the issue that if the length of string sent to TracePro thru DDE exceeds 255, the exceeding string will be dropped

#### IES/LDT Analysis:

Update: Fix the issue of importing Polar and Rectangle ISO Candela files from TracePro – 6844, 6867

Update: Fix the issue when loading the Candela Distribution file saved by TracePro 7.6.3 and the Language setting is French, the operation will fail – 6866

#### Surface Source Property Generator:

New: Add a unit selector of mm or nm for wavelength in defining the spectrum range – 6790

New: Add new capability of displaying CIE chromaticity diagram when mouse is hovering on the color box – 6791

Update: Fix the issue that cannot export property directly when using imported Candela file – 6843

#### Texture Optimizer II:

Update: Fix the broken function of optimizing dot pattern with the current dot positions

#### 3D Interactive Optimizer:

New: Add new capability of pasting an irradiance map on the uniformity defining dialog

New: Add “Remove background” button in the uniformity operand definition dialog

Update: Fix the issue that cannot get the incident Candela profile on a specified surface if TracePro is running in Simulation mode

Update: Fix the drawing issue with the lens object

## TracePro 7.6.3 Release

Update: Fix Copy/Paste issue when save text as Unicode is selected – 6829

Update: Efficiency improvement in raytrace for ABg BSDF when g is an integer

Update: Add Photorealistic Rendering Options to popup menu for all languages --previously it was only there for English

Update: Fix bug that caused extra simulation files to be errantly created

Update: Make insert icons work under Geometry menu – 6825

Update: Fix a tree node bad state that occurred after a specific editing sequence – 6800

Update: Properly delete property cache after importing from a file – 6824

Update: Fix crash in non-English versions of TracePro when launching the Candela Options dialog – 6822

Update: Improve raytrace performance of rotationally symmetric aspheric surfaces – 6796

Update: An optional argument has been added to the macro command (raytrace:add-file-source ...) to define a wavelength when the file source doesn't contain wavelength information – 5341

Update: The macro command (raytrace:set-wavelengths ...) can now set the wavelength weights for file sources

## TracePro Utilities Revisions...

#### IES/LDT Analysis:

Update: Fix issue that the orientation of the export file source & surface source property doesn't match the loaded IES file – 6446

#### 3D Interactive Optimizer:

Update: Fix the issue that when changing ray type the cell of surface is not editable if the selected operand is Beam width

Update: Fix the issue that when creating a radial symmetric object with an initial TIR profile, an error indicating null array occurs

Update: Fix the issue that cannot modify the position of bitmap

Update: Fix the issue that if the material catalog name contains colon, the property will be missing when

loaded – 6821

Update: Fix the issue that fail in optimization due to new Candela distribution format – 6820

Solar Emulator:

Update: Fix the issue that error occurred after starting analysis – 6823

Analysis Toolkit:

Update: Fix the issue that the feature of spectrum analysis is failed due to new incident ray table format – 6826

## TracePro 7.6.2 Release

New: Add the capability of displaying Luminance value when moving mouse over a Photorealistic Rendered image

New: Add the capability of adjusting the gamma value of the rendering result

New: Add the capability of saving raw data including r,g,b and luminance as a text file

New: Macro commands added for Photorealistic Rendering Setup dialog

Update: Fix issue with sweeping a planar surface with Sweep Angle – 6815

Update: Fixes to Auto Level settings in Simulation File Manager / Irradiance Viewer – 6802, 6803

Update: Simulation File Manager / Irradiance Viewer Options – auto levels setting are now available for editing – 6804

Update: Improve calculation of default brightness level for Photorealistic Rendering – 6814

Update: Fix performance issue in volume flux calculation – 6812

Update: Fix errant message in progress dialog – 6797

Update: A valid orientation vector is not required if a 2-sided surface property is isotropic – 6806

Update: Fix issue with applying a 2-sided surface property

Update: Context file for requesting a license is now saved to the desktop instead of the ProgramData folder

Update: Improvements to OSLO translator

Update: Fix raytracing error on submitted lens. Moving this lens in-session and re-raytracing produced incorrect raytrace results – 6770

Update: Enable GRIN raytracing to aspheric surfaces

Update: Improve the brightness calculation of a photorealistic rendered image

Update: Improve calculation of missing aperture semi-diameter on imported lenses

Update: Improve handing of ray files with bad wavelengths which previously confused the ray counters – 6755

Update: Do not allow saving of IES or LDT files unless the Analysis Units are set to Photometric – 6762

Update: Fix the irradiance map surface outline to properly account for the scale – 6758

Update: Fix an access violation tracing surface sources on objects that have been removed from the ray trace

Update: Fix an issue on the Polar Iso Candela Plot where the Total Flux is incorrect in some circumstances – 6416

Update: For models with multiple instances of the same file source, read that file from disk only once – 6754

Update: Fix an error in calculating the bulk scatter in RGB mode

Update: Lost flux in an object (e.g. due to bulk scatter) was not correctly reported in the flux report. This is now fixed. – 6635

## TracePro Utilities Revisions...

BSDF Converter:

Update: Fix the issue that cannot read the SPEOS anisotropic bsdf file – 6099

Update: Fix the issue that cannot auto-detect the file type if the extensions are all .txt – 6543, 6544

Surface Source Property Generator:

Update: Fix the issue of failing to export property when the loaded spg file contains multiple profiles – 6813

#### Texture Optimizer II:

New: Add Polygon shape support

Update: Fix the issue when importing texture file in the current cells but there are not cells existing, program crashes

Update: Fix the issue when importing texture file in uniform cells, program crashes

Update: Fix the issue that program crash when adding cell with blank boundary

Update: Fix the issue that program crash when the combined cell has the same position with current existing cell

Update: Fix the issue that uv mapping method is missing in the Export Real Geometry dialog

Update: Fix the issue that program hangs when after select optimization from Action menu when Dot Preview is selected – 6810

#### 3D Interactive Optimizer:

Update: Fix the crash when copying a radial symmetric object

Update: Fix the crash when drawing a radial symmetric object with an across profile

Update: Improve the abridged after-scheme command window in after-scheme editor – 6746

Update: Fix the issue that surface property not applied to surfaces when surface is the result of setting “Steps” in the Object dialog – 6741

Update: Fix the issue that program crash if the weight value of an operand is empty – 6808

Update: Fix the bugs when selecting missing ray as the target of intensity operand – 6794

#### Analysis Toolkit:

Update: Correct the tip text for the Exit button

### TracePro 7.6.1 Release

Update: Fix a file opening error with models containing irradiance surface sources – this is a regression in 7.6.0 – 6751

### TracePro 7.6.0 Release

New: For a complete description of all new features in TracePro 7.6, please refer to the update guide on the TracePro Manuals webpage

New: Add macro command (analysis:sort-path-sort-columns ...) to sort on the columns of a Path Sort Table – 6701

Update: Fix Solve For calculation in Surface Property Editor for 1DABg BSDF model – 6715

Update: Performance improvement of rotational symmetry calculation for Candela plots – 6440

Update: Fix incorrect result for volume flux with a grid source inside object – 6708

Update: Save max photons setting for photorealistic rendering to the OML file – 6740

Update: Fix message that gives incorrect wavelength – 6737

Update: Fix raytrace error in repeated raytrace of RepTile DMD – 6725

Update: Fix issue with smoothing on Polar Iso Candela plots – 6735

Update: Fix raytrace error for RepTile with “Use Surface Bounds” set as RepTile bounds – 6694

Update: Explicitly set directory for Simulation File Manger to make sure it can be loaded

Update: Ensure deactivated license keys are resolved before upgrading the key, don't list remote keys with the licenses removed, and include server name for remote deactivated keys

Update: (insert:lens-element ...) macro now contains support for “Decenter of Second Surface Relative to the First” and “Tilt of Second Surface Relative to the First” – 6674

### TracePro Utilities Revisions...

BSDF Converter:

Update: Fix the issue of failing to load Radiant Imaging ISSA file saved in older version – 6508

Update: Fix the issue with handling large data files – 6616

Update: Fix the issue of failing to load the .BSDF file when Language is set to Turkish – 6660

#### IES/LDT Analysis:

Update: Fix the incorrect orientation setup of the Street Light Analysis – 6685

#### Texture Optimizer II:

New: Add capability of saving position file in XYZ format for UV mode

Update: Fix the issue that an error shows when expert real geometry to a surface in TracePro – 6724

Update: Fix the incorrect geometry parameter error message when trying to enter values for any parameter while Pointed cone is selected as the dot shape – 6723

Update: Improves the speed of generating dots

Update: Fix the issue of incorrectly filling density/target in cells as a path

#### 3D Interactive Optimizer:

New: Add capability of scaling surface

New: Add new after-scheme command: raytraceflag

New: Add the display of total flux on the irradiance map when viewing it on the Log history window

New: Add new supportive surface type – freeform surface

New: Add new after-scheme commands: export\_surface\_as\_surface and export\_surface\_as\_wirebody

New: Add capability of displaying rays in different color

New: Add capability of deleting rays in selected color

Update: Fix the issue that if conic constant changed to zero, the curve won't be generated in some cases

Update: Fix the issue that when copying an object with surface that has duplicated name, the copied object refers to wrong object

Update: Fix the issue that when changing segment type from conic to spline, program crashes in some cases

Update: Add example to commands unite, subtract and intersect to clarify the difference between the object ID and object name – 6563

#### Solar Emulator:

New: Add capability of defining the rotational axis for Sun tracking options: Uni-axial and Aim to Sun

New: Add the display of Sun attitude and Azimuth angle in the 3D preview window

## TracePro 7.5.7 Release

Info: No changes from TracePro 7.5.6

### TracePro Utilities Revisions...

#### 3D Interactive Optimizer:

Update: Fix the issue that a file saved with a cSegLoop will not open – this is a regression in 7.5.5 – 6720

## TracePro 7.5.6 Release

Update: Enhancements to license troubleshooter – clearer messages and more information in emails sent back to Lambda Research

Update: Fix bug where deactivated keys were not listed in the troubleshooter – 6718

Update: Fix copy/paste issue with irradiance sources – 6717

Update: Improve parsing and handling of OSLO commands in OSLO importer

Update: Fix insert lens issue with 90 degree rotated cylindrical face – 6713

Update: Fix crash in fluorescence raytracing when levels were so low that no fluorescent rays were created at

certain wavelengths – 6714

Update: Fix smoothing factor issue on some Candela plots – this is a regression in 7.5.5 – 6716

Update: Internal improvements to licensing and the Troubleshooter

Update: Change grid source Gaussian Spatial Profile label – 6710

Update: Fix issue with launching license tool

Update: Fix Rectangular Iso Candela plot color map – this is a regression in 7.5.5 – 6704

Update: Fix luminance viewer with photometric units – 6703

Update: Modify menu obtained from right-clicking in the system tree is only available for objects created from TracePro dialogs

### **TracePro Utilities Revisions...**

General:

Update: Change the temp folder to \AppData\Local\Temp which is Microsoft compliant – 6705

IES/LDT Analysis:

Update: Correct the message string to improve the clarity of the error message when the loaded IES file doesn't have the Lamp size info in its file header – 6601

2D Interactive Optimizer:

Update: Fix the issue that fails to optimize when windows Region and Language is set to German – 6711

3D Interactive Optimizer:

Update: Add icons in surface window of Y-Z and Z-Y view when a 2D profile is displayed – 6287

Update: Fix the issue that fails to build geometry in TracePro when Language is set to Italian – 6515

Update: Fix the wrong behavior when changing curvature on an angled conic segment

Update: Modify the description about how to define a light source in the object view – 6445

Update: Add description to the periodic segment in the on-line help – 6696

### **TracePro 7.5.5 Release**

New: Added the Scheme command: (view:set-update-system-tree ... )

New: Added the following Scheme commands: – 6668, 6669

(edit:set-model-window-size ... )

(edit:get-model-window-size )

(analysis:candela-set-window-size ... )

(analysis:candela-get-window-size ... )

Update: Restore proper names to Tools | Change Language submenu -- this is a regression in 7.5.2

Update: Fix issue with Photorealistic Rendering image when surface source is using calculated wavelengths – 6686

Update: Add “Set Default” button in Irradiance Viewer Options dialog – 6687

Update: Fix issue with saving Polar ISO Candela data when Contour plotting was selected

Update: Fix crash in Photorealistic Rendering that appears when making an object, that contains a surface source, invisible

Update: Fix erroneous raytrace results in case with RepTile/Texture using Surface Bounds – 6694

Update: Make Simulation File Manager dialog resizable – 6692

Update: Fix default file extension in File|Save As... – 6689

Update: Disable Save menu pick for the irradiance viewer – 6688

Update: Fix crash when performing a Boolean Subtract when the subtracted body has a surface source – 6683

Update: Fix color issue in Photorealistic Rendering – 6682

Update: Fix reported crash in Table BSDF – 6691

Update: Efficiency improvement for optical aspheres

Update: Fix crash in Photorealistic Rendering – 6681

Update: Improve memory management in Photorealistic Rendering – 6413  
Update: Add warning to Volume Flux when a fluorescence property exists – 4664  
Update: Have Export Rays consider the Ray Sorting selection for Flux Display Range – 4839  
Update: Improve performance in system, source, and radiance calculation tree controls  
Update: Several enhancements to the license troubleshooter

### **TracePro Utilities Revisions...**

Surface Source Property Generator:

New: Add new capability of loading Candela file and IES file as radiation pattern

Texture Optimizer II:

New: Add new preference setting for dithering boundary dots

New: Add capability of updating density value by the real generated density value during optimization

New: Add new button to retrieve the center position of the current boundary in the Scale boundary dialog

New: Enable the cell profile display even unchecked the cell display option

New: Add new feature of Gaussian smoothing in the density/target value editors

New: Enable the display of mouse position in the density/target filling dialogs

Update: Fix the issue that when generating dots, the progress bar is glitter

Update: Fix the issue that after rebuilding cells, the selected cell is the old one

Update: Fix the issue that in the optimization dialog, the popup menu on the target map is not functional

Update: Fix the issue that when start optimization with the current texture file, program will crash

Update: Fix the issue that the target map only can display in gray scale

Update: Fix the crash when filling density map if there is no any path defined

Update: Fix the issue that when aborting optimization during the phase of generating dots, program will crash

3D Interactive Optimizer:

New: Add new tool for logging the DDE commands

New: Add capability of creating Fresnel profile on a curved baseline

Update: Fix the issue that sending to TracePro results in error messages when Region and Language is set to German – 6697

Update: Add descriptions about Fresnelization in on-line help – 6698

Update: Fix the issue that one row of facet will be missing to tweak as curved when rotating a TIR profile

Update: Fix the issue that when there are invalid values obtained during optimization, viewing trend chart will hang the program - 6666

Update: Fix the issue that when reducing the number of Asphere terms, the program will crash

Solar Emulator:

New: Add spectrum info for both Sun model and Sky model

New: Add option of ray sampling method for Sky model generation

New: Add new feature that export Sky model as a surface source property

Update: Fix the issue that the slider won't update with the simulation – 6200

### **TracePro 7.5.4 Release**

New: Add option to troubleshooter to set server name when network key is on a different subnet. – 6572

Update: Fix reported irradiance value for surface sources in Property Report

Update: Fix application of irradiance surface source property to multiple faces at once

Update: Change define source menu item order to make it consistent across TracePro – 6667

Update: Improvements to source tree performance



- Update: Fix irradiance value round off problem in UI of grid or surface sources. Models saved from this version forward will not have this problem. – 6661
- Update: Improve macro recording of inserting/modifying grid sources to a more efficient way
- Update: Fix internally found crash when interacting with the Surface Source Editor and multiple documents
- Update: Fix drag/drop issue in the system tree that lead to a crash – 6664
- Update: Fix for incorrect flux in Table BSDF – 6658
- Update: Improvements to memory allocation when a large number of sources are used
- Update: Performance improvement. After inserting a Ray File into the model and performing a ray trace, the file was inefficiently read twice. We now only read the file once. – 6596
- Update: Fix issue with exclude flag errantly toggling in the source tree when modifying a source – 6655
- Update: Fix Source Editor issue where a modification to a source could delete the wavelengths on the source – 6657
- Update: Improve messages and cleanup previously downloaded installers when running Check For Updates
- Update: For all Property Editors, catalog names are case insensitive while property names are case sensitive. Ensure combo boxes in the UI adhere to this.

### **TracePro Utilities Revisions...**

#### Texture Optimizer II:

- New: Add new capability of placing dots on UV surface and creating dots as real geometries
- Update: Fix the issue that the progress bar generates repeatedly when launching the density path dialog

#### Solar Emulator:

- New: Add new capability of exporting sky model in multiple wavelengths

### **TracePro 7.5.3 Release**

- New: BrightView diffuser surface properties are in database shipping with this release
- Update: Fix Check For Updates message that referred to a new update as “Early Access” instead of stating the new version number – this is a regression in 7.5.2
- Update: Fix errant error message when adding a new property to the database through the Property Editors – this is a regression in 7.5.2 – 6653
- Update: Fix incorrect Incident Ray Table on coincident surface in submitted model – 6638
- Update: The conservation of energy message was erroneously displayed for some properties in the Surface Property Editor. This is now fixed. – 6649
- Update: Fix UI in Rotate Source dialog so all required data can be entered for a customized rotation – 6651
- Update: Fix macro recording of (edit:rotate-grid-source ...) and (edit:rotate-file-source ...). The angle being recorded was incorrect. – 6652
- Update: Fix problem in OSLO translator for ISO Symmetric Asphere -- this is a regression in 7.5.2
- Update: Fix crash when deleting an object with a surface source on it -- this is a regression in 7.5.2 – 6650
- Update: Ensure all name comparisons in the property database are case sensitive
- Update: Permit newly created fluorescence properties to be edited in the Fluorescence Property Editor
- Update: Provide the proper behavior in Display Selected Rays mode when navigating the Incident Ray Table with the up and down arrow keys – 6619
- Update: Fix to (analysis:refresh) command to ensure all Candela plots properly refresh – 6648
- Update: Only allow positive scale factors in Scale Selection dialog box – 6646
- Update: Enhancements to Check For Updates regarding license checking and messages to the user

### **TracePro Utilities Revisions...**

#### 3D Interactive Optimizer:

- Update: Fix the issue that the user-defined operand is not working

## TracePro 7.5.2 Release

- New: Add the following Scheme command to clear the output window – 6642  
(macro:clear-output ... )
- New: Add the following Scheme commands to support Display Selected Paths and Path Sorting – 6634  
(analysis:display-selected-paths ... )  
(analysis:update-selected-paths ... )  
(analysis:get-sort-path-count ... )  
(analysis:path-sort-close ... )
- New: A Ray File Wavelength Editor has been added to the Define menu – 4421
- Update: Fix issue with Table BSDF integration
- Update: Improvements to internal caching of property data to minimize database transactions and improve performance
- Update: Properly handle ray tracing invisible objects for Photo Realistic Rendering
- Update: Improve error checking when querying license and put up message box if query fails
- Update: The default model temperature is now used to interpolate surface source properties. 300K was previously used.
- Update: Auditing performance improvement on large models
- Update: Fix incorrect ray trace in Gegenbauer bulk scatter models with g coefficient not equal to zero – 6633
- Update: Performance improvement on models with many sources when all sources have the same number of wavelengths
- Update: ACCOS and Sigma2000 lens design translators have been removed from this release
- Update: Fix Set Defaults in Raytrace Options >> Advanced and Raytrace Options >> Thresholds for all languages. Issues were found due to improper translations in Chs, Cht, Ita, and Esp.
- Update: Double-click to open a file from Windows Explorer now works even if the full path to the filename contains a space – 6628
- Update: Fix crash in Surface Property Solve For with no scatter – 6621
- Update: Improve efficiency when looking for group nodes in system tree
- Update: Fix bug reading fluxtype default from tpdef.ini. The setting was ignored.
- Update: Use correct object and surface names in overlapping body error message. This was incorrect if the names were changed in-session – 6614
- Update: Change naming convention of views in default model view combo box
- Update: Fix issues with Zernike polynomials translation in ACCOS and OSLO translators
- Update: Add six more view modes to the View toolbar – 6588
- Update: Fix crash in Surface Source dialog – 6612
- Update: Use user defined orientation in Irradiance Viewer – 6604
- Update: Fix ray sorting crash – 6602
- Update: Documentation fix for Predefined Irradiance Map Orientation dialog – 6603
- Update: Documentation update for new Merge dialog
- Update: Default view mode has been set to yz – 6608
- Update: Improved messages while checking for updates

## TracePro Utilities Revisions...

### Texture Optimizer II:

- Update: Fix issue that progress bar is not working in the Path density dialog
- Update: Fix the issue that optimization stops at the first iteration when failing to read irradiance map
- Update: Fix the crash when updating trend chart when no data exists

### 3D Interactive Optimizer:

- New: Add capability of creating a lightpipe with one end polygon and the other end circular

- New: Add new features of Flipping, Translating for surface operation
- New: Add new after-scheme command-Applybulk
- New: Add capability of creating period pattern on curved segment
- New: Add capability of creating lightpipe with one end polygon and the other end circular
- Update: Fix the issue when selecting Luminance as the operand, the simulated result cannot be recognized correctly
- Update: Fix the issue when there are two Tab in front of keyword, the text color won't be turned to blue
- Update: Fix the crash when loading file with conic segment – 6620

#### Solar Emulator:

- New: Add capability of inputting range of sampling wavelength for the Sun model
- Update: Fix the issue of no response from TracePro when creating Sun model, the model won't be created and a misleading error message is shown – 6606, 6607
- Update: Fix the issue that when pupil is set as rectangular the Sky model traces incorrectly – 6597

## TracePro 7.5.1 Release

- New: Source Editor now handles all types of sources – 2442, 4543, 5485, 5770, 5827
- New: Add Optical Path Length to Incident Ray Tables – 1409
- Update: Fix issue with large source files – 6594
- Update: Fix macro recording of applying RepTile Property with Use Surface Bounds selected – 6568
- Update: Fix (property:apply-reptile... ) when using “Use Surface Bounds” to move the origin to the tilted plane automatically
- Update: Sort ray file by wavelength when cache is on – 6552
- Update: Add default view mode options
- Update: Increase wavelength grid size to eliminate need for horizontal scrolling – 6579
- Update: Add merge file option to merge new model into a group node – 5385
- Update: In the macro command (analysis:set-3d-irradiance-contour ... ), if the contour option is turned ON, smoothing is turned ON and gradient display is turned OFF to match the behavior in the UI
- Update: For setting 3D Irradiance Map options , do not permit setting the Smoothing or Gradient Display option if the Contour Plot option is ON. This matches the UI behavior.
- Update: Fix RepTile display for variable row RepTiles – 6578
- Update: Fix program crash attempting to trace rays in model with Parameterized RepTile set to Use Surface Bounds – 6577
- Update: Fix to allow the Solar Emulator to export the correct irradiance values for a solar source – 6569
- Update: Improvements to ‘Modify Selection’ in the Source Editor
- Update: Fix issue with sending email for licensing purposes – 6566
- Update: Allow Source Editor to change multiple combo cells in one edit
- Update: Documentation updates for Photorealistic Rendering
- Update: Fix crash in Photorealistic Rendering on submitted model – 6557
- Update: Allow property with long name over 50 characters – 6558
- Update: Changed internal link to user manual website
- Update: Add angular convention to Candela text files – 6555
- Update: Add width and height to Candela text file header

## TracePro Utilities Revisions...

### 3D Interactive Optimizer:

- New: Add new option - Missed ray to range selection for Candela target – 6586
- Update: Fix the syntax error in help for the command - var – 6587

- Update: Fix the issue that when changing aperture shape from circular to rectangular for a lens object, utility will crash – 6590
- Update: Fix issue that opening optimization window crashes program when the conic reflector has control point as variable – 6562
- Update: Fix issue that no option available to set the thickness of a lens object – 6576
- Update: Add documentation of optimization log window to online help – 6551
- Update: Fix the issue that geometry becomes corrupted after transformed – 6503
- Update: Fix the issue when creating lens object crashes – 6554

## TracePro 7.5.0 Release

- New: New type of BSDF: Composite BSDF
- New: New type of BSDF: 1D BSDF
- New: New BSDF Editor for BSDF properties
- New: Add group node related Scheme commands
- New: Improved licensing using CodeMeter – 2448, 3538, 3980, 4967, 5408, 5833, 6057, 6058, 6059, 6447, 6478
- New: Added “Check For Updates” capability to automatically check for and download newer releases
- New: The user can now set the maximum number of photons to trace in the Photorealistic Rendering Setup
- New: Add group node icon – 6458
- New: Add Scheme commands: (property:get-catalogs ... ) and (property:get-properties ... )
- New: Add Scheme commands: (property:get-catalogs ... ) and (property:get-properties ... )
- New: Add Scheme commands: (analysis:display-selected-rays ... ), (analysis:get-selected-flux ... ), and (analysis:get-selected-size ... ) to support Display Selected Rays feature – 5806
- Update: When applying a Surface Source to an object, the Surface Source is applied to all surfaces in that object – 6542
- Update: Fix tab order in Surface Property tab of Apply properties dialog – 6532
- Update: Fix erroneous Luminance Map for case with Lambertian Surface Source property with cone angle less than 90 degrees – 6472
- Update: Fix to Irradiance Maops for irradiance type surface sources when “Normalize to: Average Emitted Irradiance” is chosen – 6530
- Update: Require the same version of TracePro when reading ray data files
- Update: Prevent audit when opening an oml file if the ray data file is not compatible with release
- Update: Clean up warning messages associated with ray data importing
- Update: Ensure Editor window is visible regardless of previous window placement – 6533
- Update: Use 64-bit integer ID internally – 6526 (REMOVE FROM REV HISTORY)
- Update: Improve error handling associated with opening ray files
- Update: Restrict property type by edition – 6511
- Update: Fix unit issue when defining Luminance/Radiance calculation with the model in inches – 6529
- Update: Fix UI updating issues and better error handler with Grid Source dialog – 5197, 5604
- Update: Macro Recorder now records (raytrace:radiance ... )
- Update: Macro Recorder now records (raytrace:all-sources ... )
- Update: Replace incorrect Scheme command example about (property:apply-flux-surface-source ... ) and when this command is applied to an object, all surfaces of the object will get this Surface Source – 4722
- Update: Improved performance in system tree node traversal
- Update: Do not record “(view:set-view ... ) if “Record window change” is not selected when starting the Macro Recorder
- Update: Record newer macro commands: (insert:sphere ... ), (insert:cyclone ... ), (insert:block ... ) when sketching geometry instead of older commands: (solid:sphere ... ), (solid:cylinder ... ), (solid:cone ... ), and (solid:block ... ). All sketched geometry can now be modified using the Insert Primitive Solid dialog box.

Update: Increase precision for rotation and translation when Macro recording

Update: Redesigned system tree group nodes to allow duplicated names – 6465

Update: Fix crash during raytracing of Texture RepTile in submitted model – 6501

Update: Fix ray color button initialization issue

Update: Relabel column title in Path Sort Table – 6502

Update: Truncate solar spectrum properly to avoid unwanted solar irradiance

Update: Greatly improve performance on Polygon texture RepTiles -- 6496

Update: Path Sort Table now includes a column for number of surface intersections – 6494

Update: Photorealistic rendering now pays attention to the display flag. During the Photorealistic Rendering process the forward raytrace pays attention to the Raytrace Flag, whereas the backward raytrace pays attention to the Display Flag

Update: When hovering over a photorealistic rendered image, the RGB value are shown in the Status Bar

Update: Reintroduce stitch and geometry healing options – 6489

Update: Fix crash in Photorealistic Rendering which may occur when a surface source is disabled

Update: Update values in the Set View dialog after a Zoom All or Zoom Selection operation

Update: Modify and Delete added back to the top of the popup menu when right-clicking on an object in the system tree (NOTE – Remove this from the Revision History since it was introduced after 7.4.3 was released – it never was released to customers.) – 6480

Update: Clear the ray file cache when needed to improve performance when processing ray files – 6456

Update: Fix crash when closing the Print Preview window

Update: Eliminate the path sort limit on the number of paths – 6468

Update: Update title on help pages – 6451

Update: Update macro reference documentation for (raytrace:set-file-source-rotation ... ) and (raytrace:get-file-source-rotation ... ) – 6452

Update: Fix issues with regards to Surface Property plotting in the Surface Property Editor

Update: Resolve memory leaks with regards to importing files from TracePro Bridge for SolidWorks

Update: Disable non-applicable buttons in the Surface Property Editor when the property has no grid data

Update: Fix issue regarding property recognition for an Ellipsoid RepTile Property – 6450

Update: Properly toggle the display of working coordinate systems for a multi-selection in the system tree

Update: Fix memory leaks associated with certain database interaction

Update: Sort properties on catalog export and whenever property lists are obtained

Update: Fix a RepTile conversion bug importing RepTile property files from a previous database version

Update: Properly handle the importing of surface properties on files that don't contain "SAVE-DATA" and have extra lines near the end of file

Update: Ensure that a valid SolveName is entered into the database when importing properties

Update: Removed a memory leak associated with the lens design translators

Update: Removed a memory leak associated with RepTile

Update: Change "Data Directory" to "Coating DLL Directory" and only make it available for TracePro Expert – 3190

Update: Add capability to delete a group from the system tree that contains objects, also nodes within a group can be copied to the top level – 5126

Update: Fix documentation for (property:apply-reptile ... ) macro. If this macro is used on a non-planar surface, warn the user and continue processing, instead of throwing an error.

Update: Properly record (property:apply-reptile ... ) macro when the boundary is set to 'Use Surface Bounds'

Update: Fix the calculated wavelength in the Apply Properties | Fluorescence dialog when the wavelength range is specified as 0 to infinity – 5446

Update: Ensure S and P values match at zero degrees incident angle for polarization dependent properties – 5774

Update: Removed memory leaks associated with database interactions

Update: Improve performance for Display Selected Rays for Incident Ray Tables when multiple rays are selected

Update: Permit processing of the Cancel button when the message window is being flooded with messages – 715

### **TracePro Utilities Revisions...**

#### General:

New: Added new Utility: Texture Optimizer II

#### BSDF Converter:

New: Add new capability of importing Radiant imaging (Imaging sphere) file.

Update: Fix the issue when importing Alanod file when Language is Italian – 6444

#### Surface Source Property Generator:

Update: Add descriptions about Image File Source and Volume File source – 6473

Update: Fix the issue that crashes when choosing Gaussian or Lambertian radiation pattern for generating the Image File Source

#### Texture Optimizer II:

New: Add new feature of placing dots in UV coordinate

New: Add capabilities of adding/deleting cells

New: Add new capability of placing dots in fix-grid, fix-hex distribution with the specified coefficients

#### 3D Interactive Optimizer:

New: Add feature of moving control point by arrow keys

New: Add feature of increasing/decreasing move step by +/- keys

New: Add new operand of radiance target

New: Add help of import from/export to text file for BSpline surface – 6499

New: Add new option for Flux operand - Normalized

New: Add new after-scheme command - exportsurface

New: Add new segment type - Periodic

New: Add new capability of importing/exporting BSpline surface from/to file – 793, 5376, 5959, 6072

New: Add new after-scheme commands to retrieve position of control point

Update: Fix the issue that when creating reflector object, if the Boolean operation fails when cutting the hexagonal facet, the objects will be removed from TracePro

Update: Fix the issue that the uniformity target is not changed when modifying the default values – 6512

Update: Fix the issue that ray display is wrong – 6528

Update: Change the behavior of moving conic segment when the Conic type is locked to Circular

Update: Increasing the sampling number for Candela profile comparison to improve the accuracy

Update: Fix the issue that when using asymmetric profile to create radial symmetric object, if the profile has any edge on the revolving axis, the object cannot be created in TracePro – 6497

Update: Fix the issue that cannot export multiple lens objects to TracePro – 6497

Update: Fix the issue that Trend chart is displaying data with an "off by one" error for variable scan – 6432

Update: Fix the issue that Biaxial object won't be saved to file

Update: Fix the issue that moving a symmetric profile will crash if there is any non-mirrored control point in it.

Update: Fix the issue that pickup is failing in some cases

Update: Fix the issue that variables for control point on Spline reflector are not appearing in Variable list in Optimization window – 6459

#### Solar Emulator:

New: Add the new function of loading analysis report

New: Add new capability of adjusting the y axis range of the report

New: Add new Sun tracking mode - Uniaxial-Suntrack

Update: Fix the incorrect expression of Solar altitude in Sky model - Darula and Kittler.