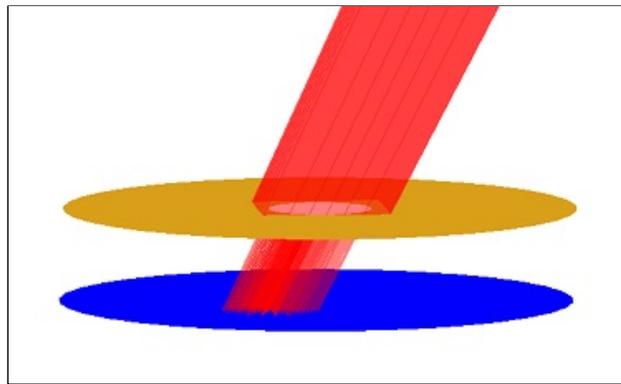
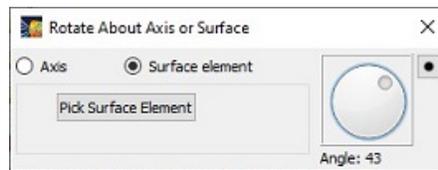


Revisions for VISRAD 18.0.0

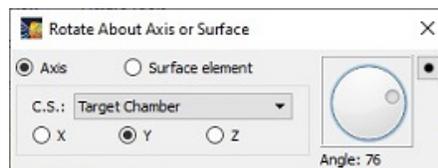
- Support was added to show the interiors of laser beams. When rendering the interior of a laser beam, a series of rays extending from the final optic to each ray's intersection with the target is shown. The grid of rays is the same as that used in computing the laser intensity on the target grid (which is also similar to the ray grids used in *Blue Cone Capture* calculations).
 - To show the beam interiors, select the *Lasers | Show Beam Interiors* menu item, or click on the *Show Beam Interiors* tool button () at the top of the *Main Window*. Do the same to subsequently hide the beam interiors.
 - The number of rays used in the grid can be changed using the *Lasers | Set Power Calculation Params* menu item.
 - An example of beam interior rays going through the hole in a grid is shown below. In this example, the outer boundary of the beam (which is the common way of displaying laser beams) does not go through the hole.



- The manner in which rotations are performed in the *Main Graphics Frame* has been updated. A new tool button (), located on the right side of the *Main Window*, is now used to support rotating about a surface element (its normal vector), and rotating about an axis.
 - To rotate about a surface element, select the *Surface Element* button, and then click on the *Pick Surface Element* button. Pick a surface element in the *Main Graphics Frame*, and then rotate about the surface element using the dial.



- To rotate about an axis of either the *Target Chamber* or one of the *Target Components*, select the *Axis* button, and then click on the axis to rotate about (*x*, *y*, or *z*). Then rotate about the axis using the dial.



- Using this new approach, each rotation that is performed is tracked in a list such that the rotations are performed sequentially. Because of this, this approach to rotating about axes is more intuitive than using the sliders in the lower left panel of the *Main Window*. It is therefore recommended that users utilize this new approach and hide the rotation widgets on the lower left panel (using the *Show Viewing (Motion) Controls* check box in the *User Interface* tab of *Preferences*).
- The list of rotations built up using this approach can be cleared by right-clicking on the tool button ().
- Laser Beam Spatial Profiles:
 - The 3mm 2W CPP phase plate option has been added for NIF.
 - The following phase plate options have been added for OMEGA-EP:

OMEGA DPP	Type	1/e R-major (μm)	1/e R-minor (μm)	Supergaussian n
SG8-0750	circular	336.0	336.0	8.92
SG8-0800	circular	397.3	397.3	11.86
SG8-1100	circular	483.0	483.0	8.57
SG8-1800	circular	956.0	956.0	24.94
SG8-2000	circular	909.6	909.6	15.68
SG10-0400	circular	233.0	233.0	16.66

- o The following phase plate options have been added or modified for OMEGA:

OMEGA DPP	Type	1/e R-major (μm)	1/e R-minor (μm)	Supergaussian n	SSD/DPR	Comment on Change
SG2-200	circular	106.2	-	2.16	On	new DPP; 3w fit used
SG2-500	circular	145.8	-	1.94	On	new DPP; 3w fit used
SG2-700	circular	190.9	-	1.88	On	new DPP; 3w fit used
SG4-100	circular	106.1	-	3.83	On	new DPP
SG4-850	circular	348.7	-	4.84	On	name changed from SG4 to SG4-850; values changed
SG5-650	circular	287.0	-	5.11	On	new DPP
SG5-720	circular	358.2	-	5.27	On	name changed from SG5 to SG5-720 ; values changed
SG8	circular	438	-	4.5	On	unchanged
SG8 Flat	circular	438.3	-	7.58	On	values changed
PD-SG2-600	circular	177.6	-	2.15	On	values changed
E-IDI-300	elliptical	144	106	4.3	Off	unchanged
E-SG4-865	elliptical	430	396	4.7	On	unchanged
E-SG10-300	elliptical	171	157	2.5	On	unchanged
E-PD-SG2-600	elliptical	305 [#]	255 [#]	2.2	On	unchanged
100 μm (sn083)	circular	100	-	2.0	On	unchanged
100 μm (sn086)	circular	99	-	2.2	On	unchanged
200 μm (sn120)	circular	107	-	2.0	On	unchanged
200 μm (sn120)	circular	105	-	2.1	On	unchanged
500 μm (sn120)	circular	150	-	1.9	On	unchanged
500 μm (sn120)	circular	149	-	1.9	On	unchanged
700 μm (sn120)	circular	195	-	1.9	On	unchanged
700 μm (sn120)	circular	202	-	1.8	On	unchanged
LLNL-3w-150-328	circular	105.6	-	2.82	On	values changed
LLNL-3w-250-024	circular	120.9	-	1.94	On	values changed
LLNL-3w-250-027	circular	118.2	-	1.94	On	values changed

- LMJ TAS Viewer:
 - o Options to set the color and lighting have been updated to support showing TAS views in grayscale (using the *Set* menu in the TAS Viewer).
 - o Camera buttons (  ) have been added to support zooming to *Full Resolution* (24 x 15.75 mm) and *Full Field* (60 x 40 mm) views. The view boundaries are shown when the camera zooming is utilized.
- The OMEGA Diagnostic Ports List has been updated.
- The OMEGA-EP Diagnostic Ports List has been updated.
- Initial ("beta") support for the GEKKO XII target chamber (Institute for Laser Engineering at Osaka University) has been added.
- Support for exporting laser beam data for the *FLASH* hydrodynamics code has been added. To export the data, select the *File | Export Laser Beam Data | FLASH Beam Data* menu item. Data is written to a '*.dat' file.
- The menu item for exporting laser beam-target intersection points has been moved to *Export Laser Beam Data* sub-menu:



- Several items in the *Laser* menu used for setting beam parameters (e.g., pointing, spatial profiles) have been combined and are accessed now as a submenu of *Set Beam Parameters*.
- Bug fixes:
 - Rendering laser beams in *Main Window*: Fixed problem that occasionally occurred when a beam is partially obstructed by a target component far from the laser beam focus, leading to the appearance of odd refraction behavior.
 - Fixed problem that occurred in setting up grids for *Cylindrical Halfraums* with rounded corners. Fixed problems occurring when the rounded corner radii for the top (*Top R-corner*) and bottom (*Bottom R-corner*) had different values.
 - *Point-to-Point Distance Tool*: problems related to *Circle* parameters when displaying in *Cylindrical* and *Spherical* geometries have been fixed.
 - *Custom Target Chambers, Diagnostic Ports, and Laser Beams*:
 - The maximum polar angle for a *Custom Diagnostic Port* is now set at 180 degrees.
 - The name of a *Custom Diagnostic Port* can now be edited.
 - Widgets showing a list of laser beams are now updated when adding a *Custom Laser Beam*.
 - When using a *Custom Target Chamber*, setting the position can now be done using a list of *Custom Diagnostic Ports*.
 - Fixed problem that occurred when exporting or printing the *Main Graphics Frame* when lighting is turned off.
 - *Target Positioning Viewer*: fixed problem that occasionally showed the initial view as blank (black).
 - Exporting *Target Components* to STP-formatted CAD files: Fixed problem occurring when exporting cylinders with small radii.
 - *Setup Movie Views*: Fixed bug that could cause crash when setting up movie views after opening a new workspace which also contains movie views.