



Revisions for VISRAD 21.1.0

- *LMJ Phase Plate* parameters were updated as follows:

LMJ Profile	R-major ⁺ (μm)	R-minor ⁺ (μm)	Supergaussian <i>n</i>
Type A	757	328	2.87
Type B	904	584	3.83
Type D	440	419	3.01
Type E	796	769	4.28
Type F	315	315	2.00

- *Phase Plate* settings: When reading in laser beam spatial profile parameters from a *VISRAD* workspace file, a check is made to see if the spatial profile parameters (R_{max} , R_{min} , supergaussian exponent, spot size definition model) are consistent with the default parameters for the phase plate being used. If inconsistencies are found, a warning is shown and the user is prompted to choose between staying with the workspace values or the default phase plate values. This warning can be turned off in *Preferences*.
- When setting the viewing position (*Set | Viewing Position* menu item), checks are made to make sure the *Eye* and *Scene* positions are not identical.
- *Laser-Target Capture Clearance Report*: Data from the *Capture Report* tab (capture fraction and max. incident angle) can now be exported to an ascii text file by clicking on the *Export Data* button. Data is exported as it is shown in the table.
- In JSON-formatted workspace files, the text string "Beam cone F number" was replaced by "Beam cone F number". *VISRAD* will accept either of these as the key word for that parameter.
- Updated progress bar for radiation flux calculations to better reflect simulation progress.
- This version is built with updated libraries for STEP file reader.
- Updated dynamic libraries for software activation.
- Mac distributions are now built on ARM processors and are digitally signed. This should reduce issues with MacOS quarantining and blocking the application.
- Bug fixes:
 - In the target positioning views, the *z*-position of the reticle cross hairs in the viewing plane was adjusted so that they appear in front of the target.
 - When using non-zero wall thickness and centering the wall at the specified object position (option only for *Disks*, *Rectangles*, and *Spoked Disks*), the object *Key Points* shown in the *Main Window* and listed in the *Target Component Positions* dialog are now corrected for the centering.
 - *Spoked Disks*: *Keys Points* have been added (affects viewing in the *Main Window* and the *Target Component Positions* dialog).
 - Bug fixed that resulted in "nan" values for viewing vectors (eye, scene, and up vectors) has been fixed.
 - *MEC Laser System*: beam parameters for modified port angles and F numbers are now stored and read in correctly from the workspace file. Only the X-ray beam remains fixed.
 - Fixed progress bar for laser beam calculation when performing multi-threaded simulations.
 - Fixed problem with *Sinusoidal* projection when viewing surface element contour plots.