Use of CAD Data for Real-Time Target-Position Guidance and Geometry Validation

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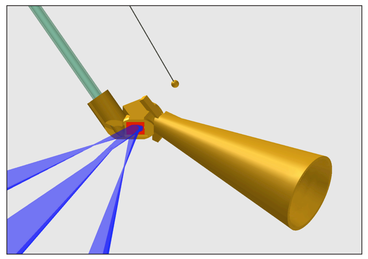
The VISRAD model communicates the target design and position specifications to target fabricators and to Omega Operations



An accurate VISRAD model of each target configuration is a requirement for every Omega campaign proposal.

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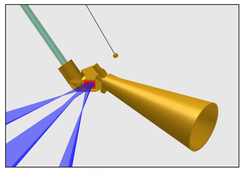
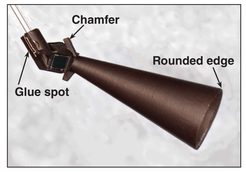
Targets are built to meet the specifications communicated in the VISRAD model, but often deviate from design



VISRAD model



Actual target

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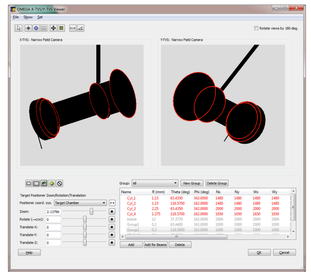
Target-positioning reticles are previewed and optimized in VISRAD



Reticle geometry is exported to the Target Viewing System's reticle generator

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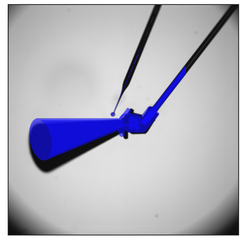
The exported VISRAD overlay files emphasize a feature on this target that is not built to spec

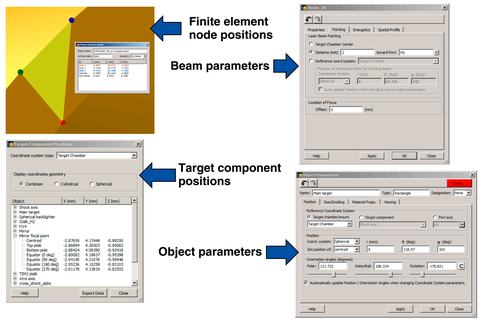
x-axis view



y-axis view

G11624d

All information necessary to position and safely shoot targets can be extracted from the VISRAD model



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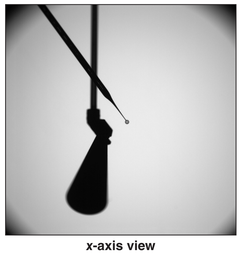
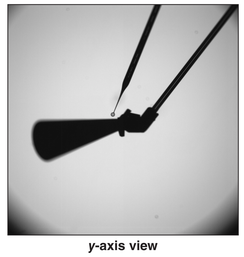
The Target Viewing System (TVS) provides shadowgraph data on the actual targets in the target chamber



x-axis view

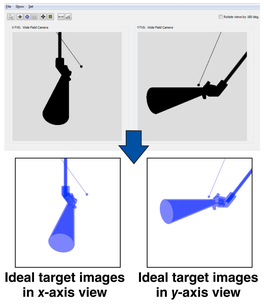


y-axis view

G11622a

VISRAD can output scaled image overlays of model for use in the Target Viewing System

VISRAD simulated Target Viewing System images



Ideal target images in *x*-axis view

Ideal target images in *y*-axis view

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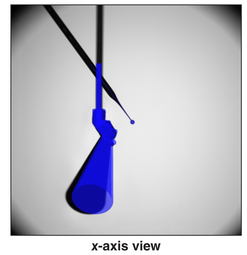
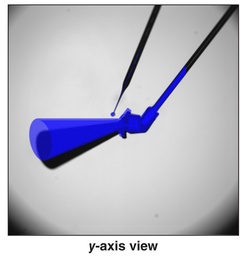
The exported VISRAD overlay files show that the target is not rotated correctly or the stalk mounting angle is incorrect



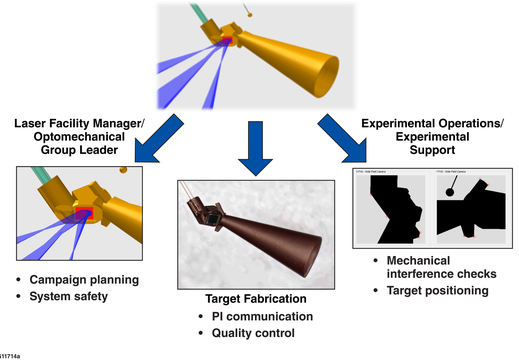
x-axis view



y-axis view

G11624e

All LLE stakeholders use the VISRAD file



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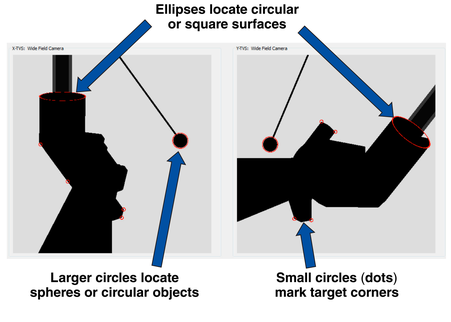
Target positioning reticles are defined based on VISRAD target features



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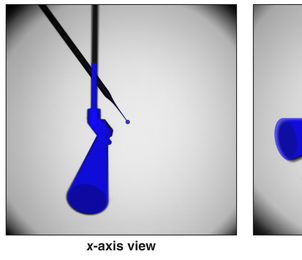
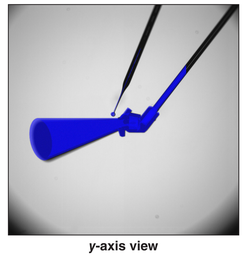
The exported VisRad overlay files are superimposed over the live Target Viewing System images to validate actual target geometry and position



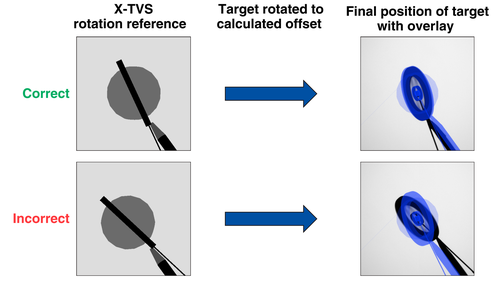
x-axis view



y-axis view

G11624c

Target overlay images are useful for catching subtle errors



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