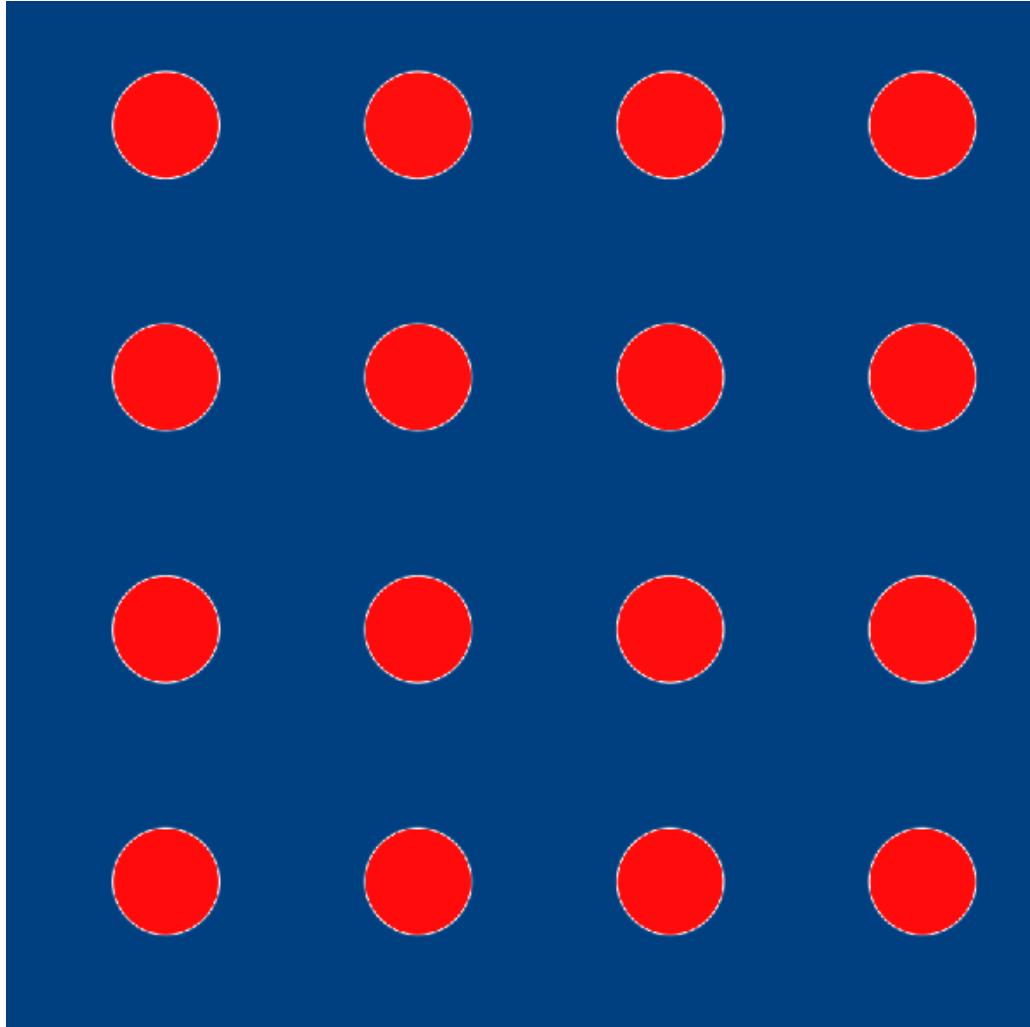


# Measuring Uniformities within the Eyebox

# Abstract

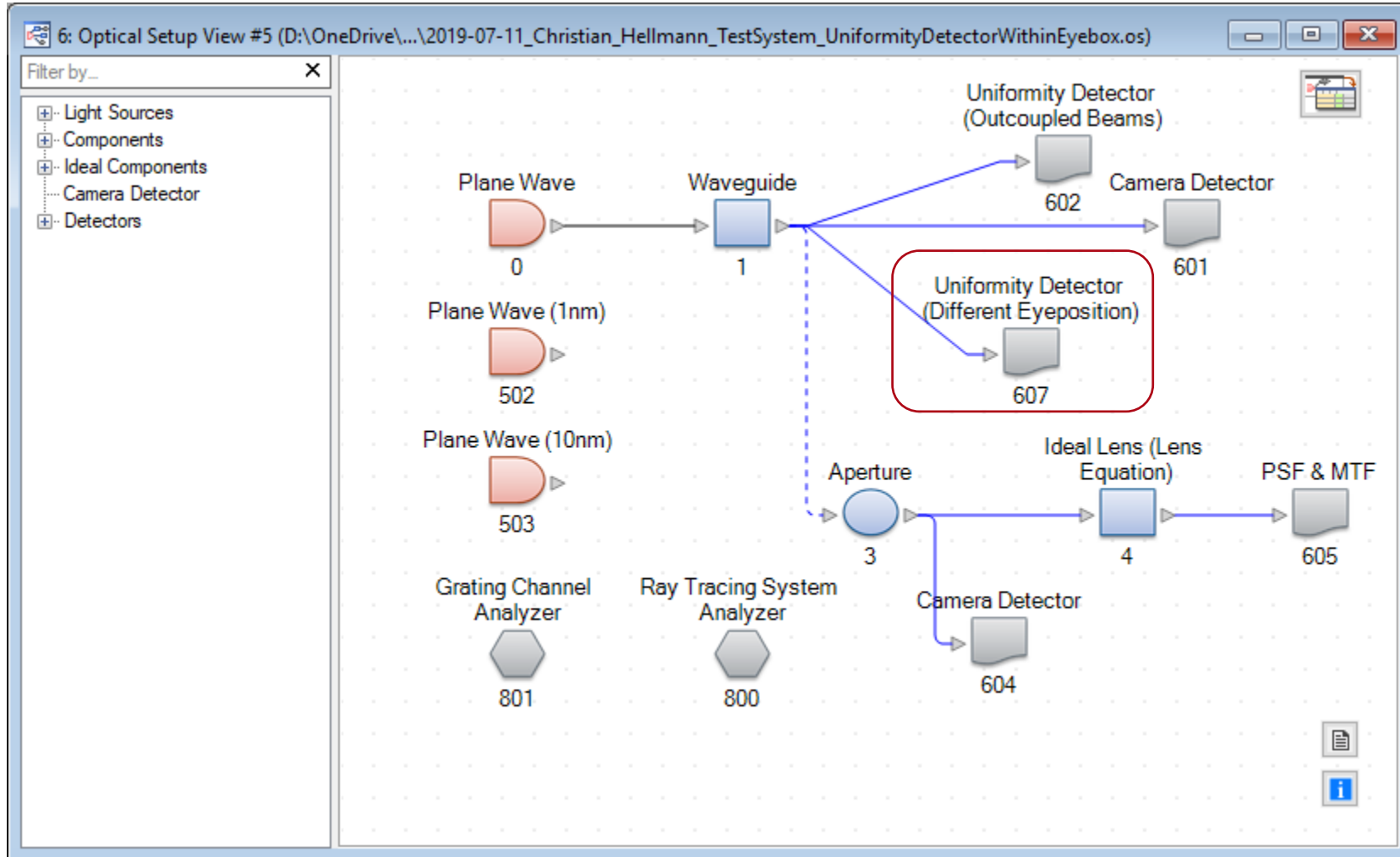
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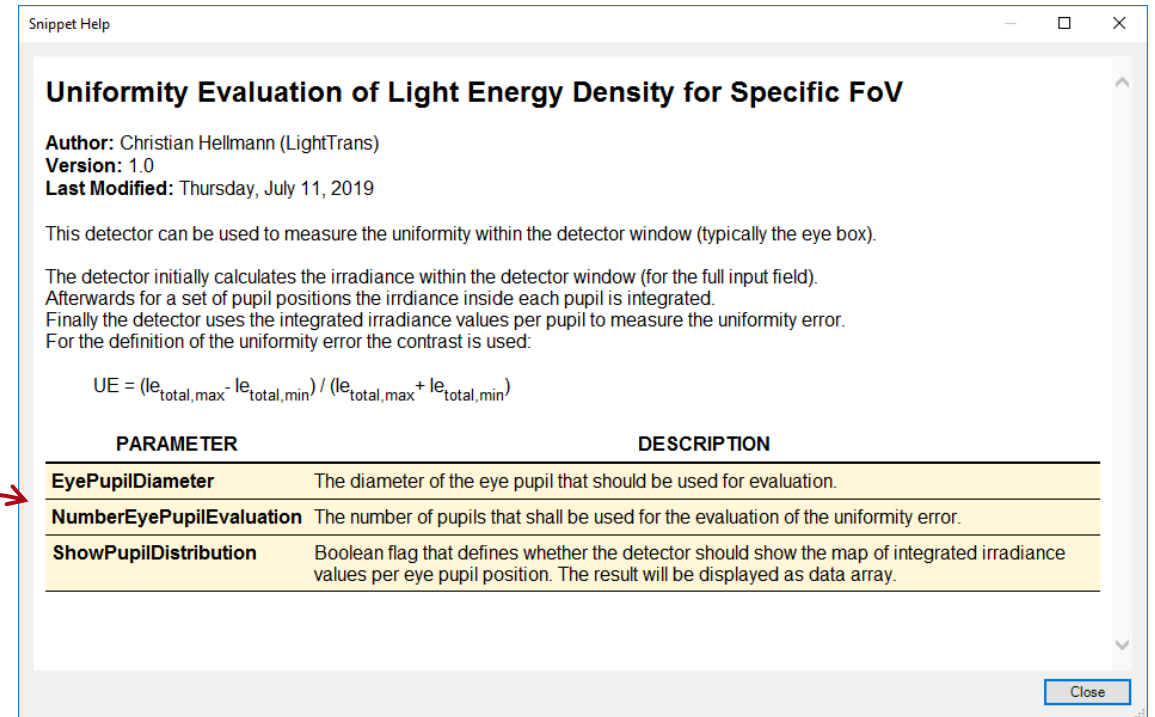
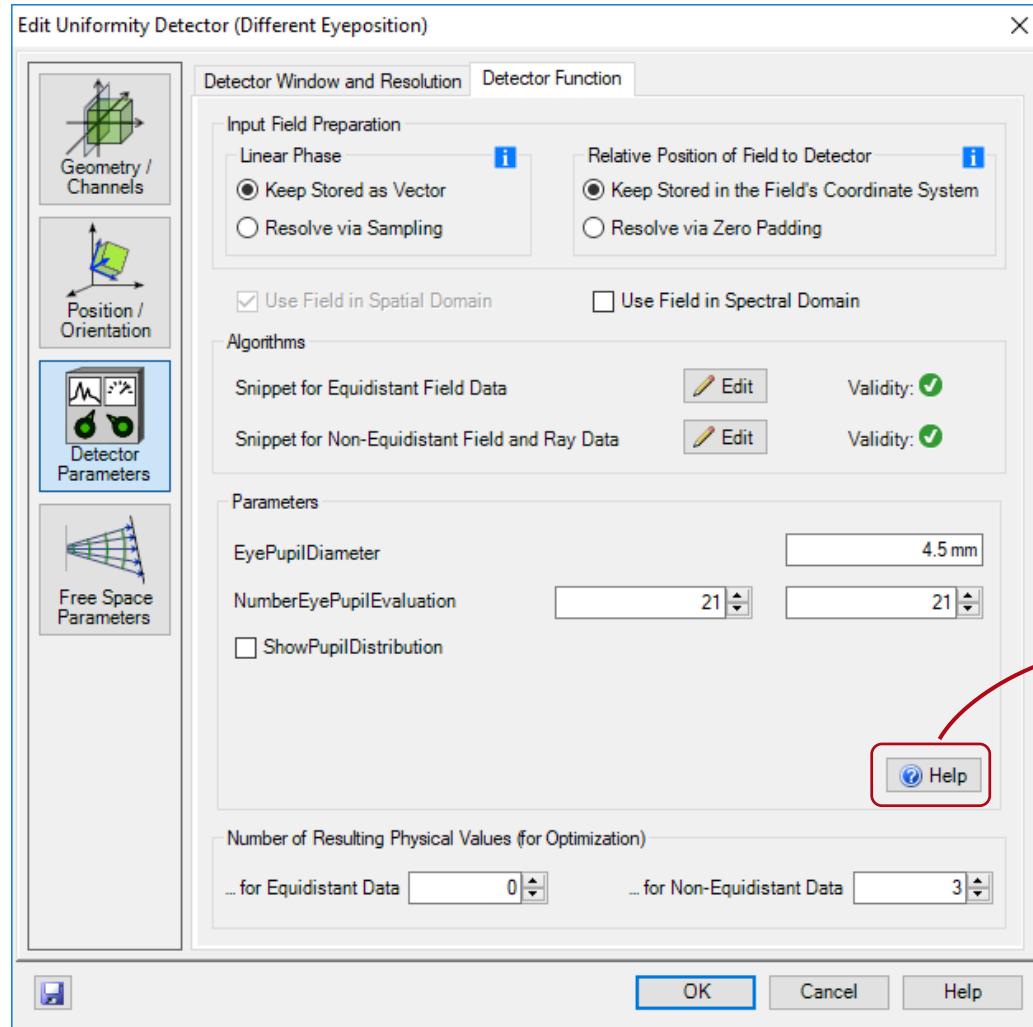
In this demo we will explain the optical setup for uniformity detector with different eye positions.

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# Optical Setup



# Configuration of Detector

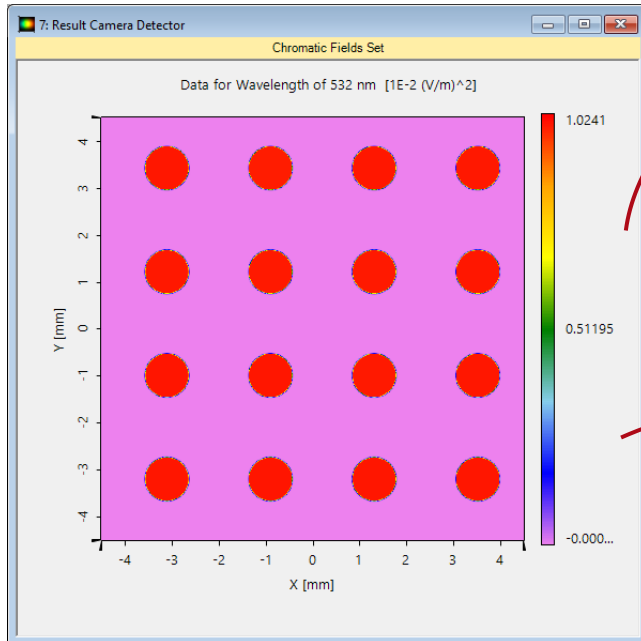


# Typical Detector Results

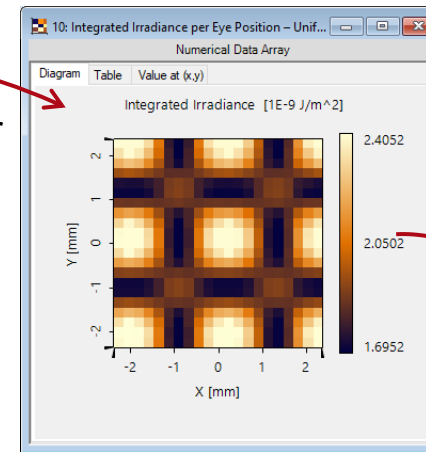
Result of Uniformity Detector (outcoupled beams):

Date/Time	Detector	Sub - Detector	Result
07/11/2019 15:50:40	Uniformity Detector (Outcoupled Beams) #602 after Waveguide #1 (T) (Field Tracing 2nd Generation)	Value for Pupil around (-3.1012 mm; -3.2011 mm)	0.010003 (V/m) <sup>2</sup>
		Value for Pupil around (-3.1012 mm; -1.0014 mm)	0.010018 (V/m) <sup>2</sup>
		Value for Pupil around (-901.47 μm; -3.2011 mm)	0.010017 (V/m) <sup>2</sup>
		Value for Pupil around (-3.1012 mm; 1.1983 mm)	0.0099878 (V/m) <sup>2</sup>
		Value for Pupil around (-901.47 μm; -1.0014 mm)	0.010009 (V/m) <sup>2</sup>
		Value for Pupil around (1.2983 mm; -3.2011 mm)	0.010006 (V/m) <sup>2</sup>
		Value for Pupil around (-3.1012 mm; 3.398 mm)	0.010002 (V/m) <sup>2</sup>
		Value for Pupil around (-901.46 μm; 1.1983 mm)	0.0099739 (V/m) <sup>2</sup>
		Value for Pupil around (1.2983 mm; -1.0014 mm)	0.0099768 (V/m) <sup>2</sup>
		Value for Pupil around (3.498 mm; -3.2011 mm)	0.010005 (V/m) <sup>2</sup>
		Value for Pupil around (-901.45 μm; 3.398 mm)	0.00995 (V/m) <sup>2</sup>
		Value for Pupil around (1.2983 mm; 1.1983 mm)	0.0099728 (V/m) <sup>2</sup>
		Value for Pupil around (3.498 mm; -1.0014 mm)	0.0099994 (V/m) <sup>2</sup>
		Value for Pupil around (1.2983 mm; 3.398 mm)	0.009993 (V/m) <sup>2</sup>
		Value for Pupil around (3.498 mm; 1.1983 mm)	0.0099957 (V/m) <sup>2</sup>
		Value for Pupil around (3.498 mm; 3.398 mm)	0.0099861 (V/m) <sup>2</sup>
Minimum	0.00995 (V/m) <sup>2</sup>		
Maximum	0.010018 (V/m) <sup>2</sup>		
Uniformity Error	0.34147 %		
Arithmetic Mean	0.0099934 (V/m) <sup>2</sup>		
Standard Deviation	7.0272E-05 (V/m) <sup>2</sup>		

Result of Camera Detector:

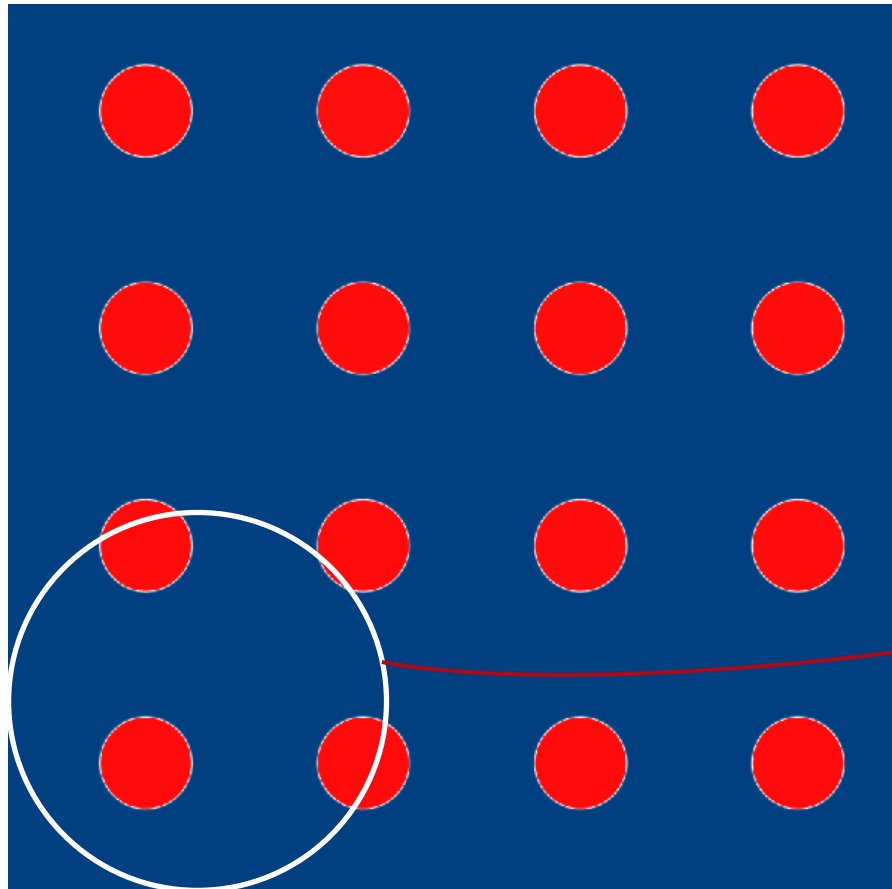


Result of Uniformity Detector (different positions of eye):

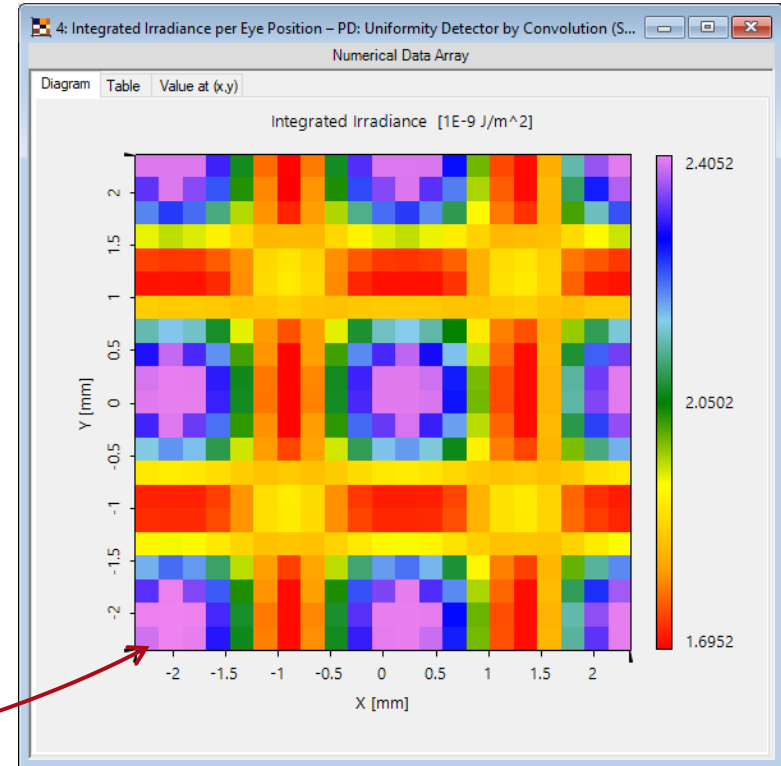


Date/Time	Detector	Sub - Detector	Result
07/11/2019 15:50:52	Uniformity Detector (Different EyePosition) #607 after Waveguide #1 (T) (Field Tracing 2nd Generation)	Uniformity Error	17.315 %
		Minimum	1.6952E-09 J/m <sup>2</sup>
		Maximum	2.4052E-09 J/m <sup>2</sup>

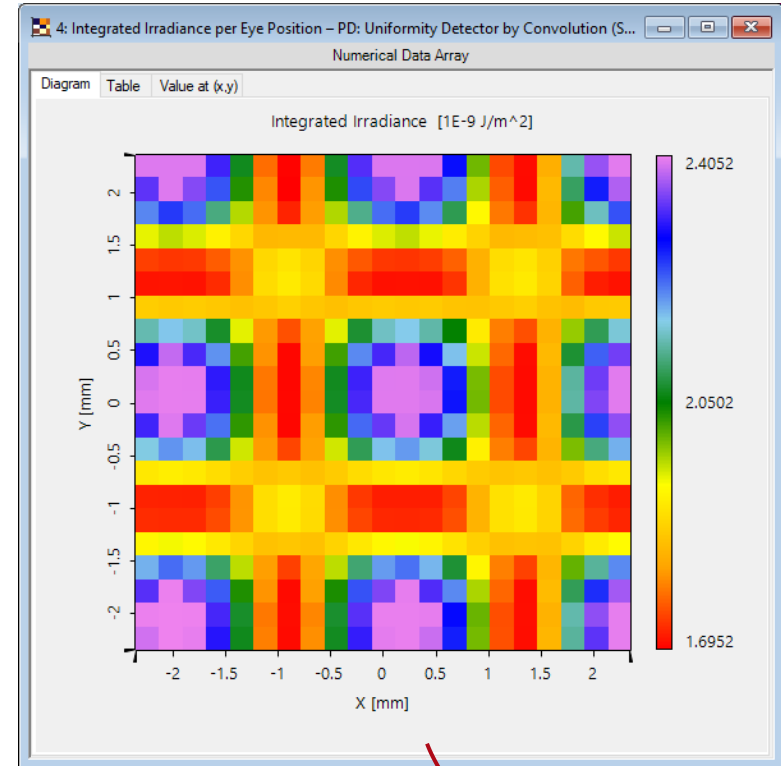
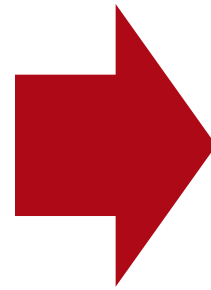
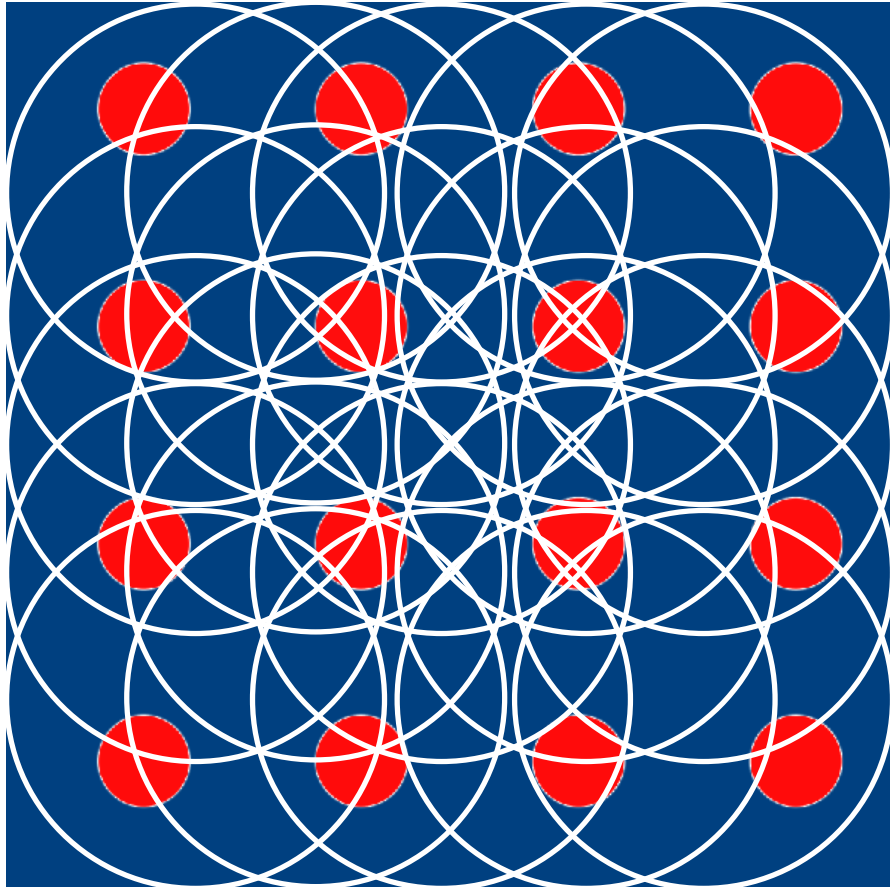
# Workflow: Result of Uniformity Detector (Different Eye Positions)



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# Workflow: Result of Uniformity Detector (Different Eye Positions)



Sub - Detector	Result
Uniformity Error	17.315 %
Minimum	Result 1.6952E-09 J/m <sup>2</sup>
Maximum	2.4052E-09 J/m <sup>2</sup>

# Document Information

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title	Measuring Uniformities within the Eyebox
document code	Demo.9
version	1.0
VL version used for simulations	VirtualLab Fusion Summer Release 2019 (7.6.1.18)
category	Demo
further reading	- <a href="#"><u>Uniformity Detector in the Waveguide Toolbox</u></a>

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