

# Color Uniformity Analysis Report

Report Generated: 2025-11-10 15:33:42  
Generated By: Olufemi Balogun  
Company: Photonics QC Lab

## Measurement Information

Parameter	Value
Device Serial	WAVEGUIDE-EXCELLENT-001
Operator	Olufemi Balogun
Instrument	Minolta CS-2000
Instrument Serial	Cs2000-12345
Calibration Date	2025-10-15
Temperature	23.5 °C
Humidity	45.0 %
Ambient Light	0.3 lux

## QC Test Results

Overall Result: PASS

### Uniformity Metrics

Metric	Value	Specification	Status
Mean $\Delta E^*00$	0.07	< 3.0	✓
Max $\Delta E^*00$	0.14	< 5.0	✓
Std Dev $\Delta E^*00$	0.04	< 2.0	✓
Median $\Delta E^*00$	0.06	-	-

**Color Statistics (CIELAB)**

Component	Mean	Std Dev	Min	Max
L* (Lightness)	100.0	0.0	100.0	100.0
a* (Red-Green)	0.04	0.03	0.00	0.00
b* (Yellow-Blue)	-0.05	0.03	0.00	0.00

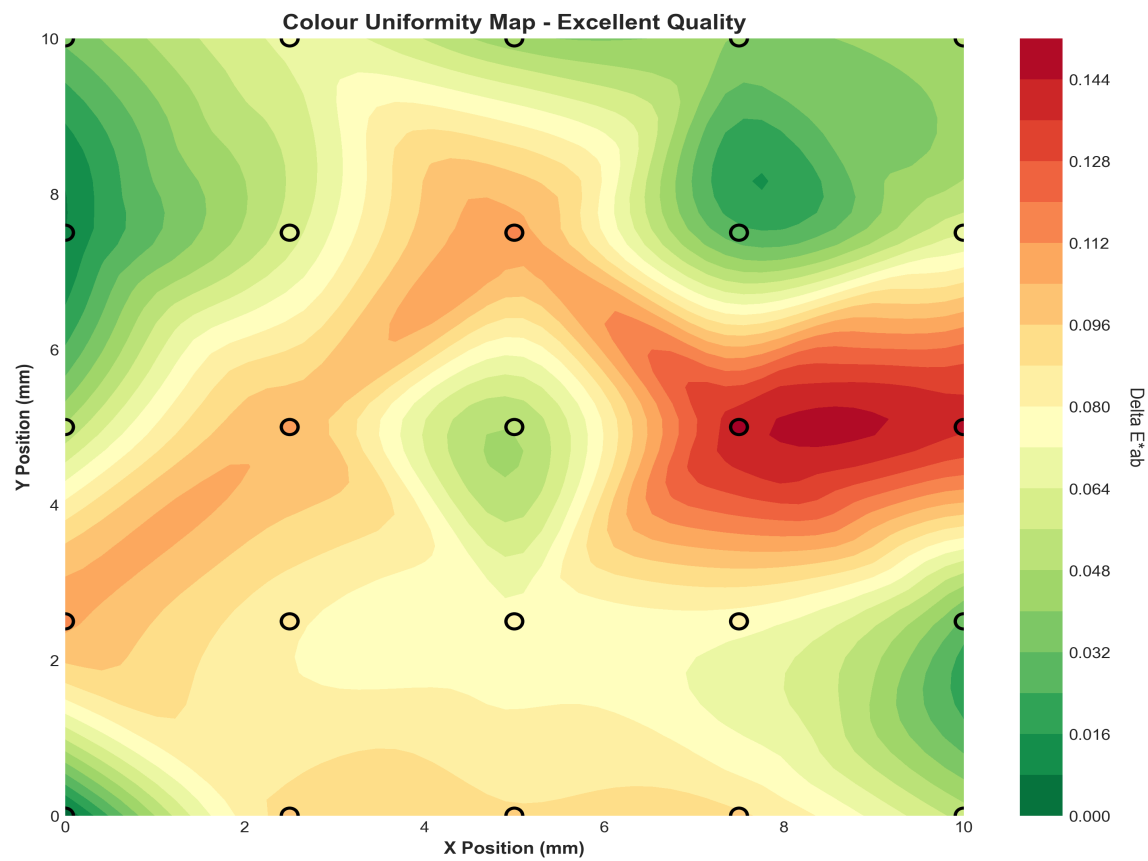
**Chromaticity Uniformity (CIE 1931 xy)**

Metric	Value	Specification	Status
Mean xy Deviation	0.0001	< 0.01	✓
Max xy Deviation	0.0002	< 0.01	✓

**Worst Position:** (7.5, 5.0) mm with  $\Delta E = 0.14$

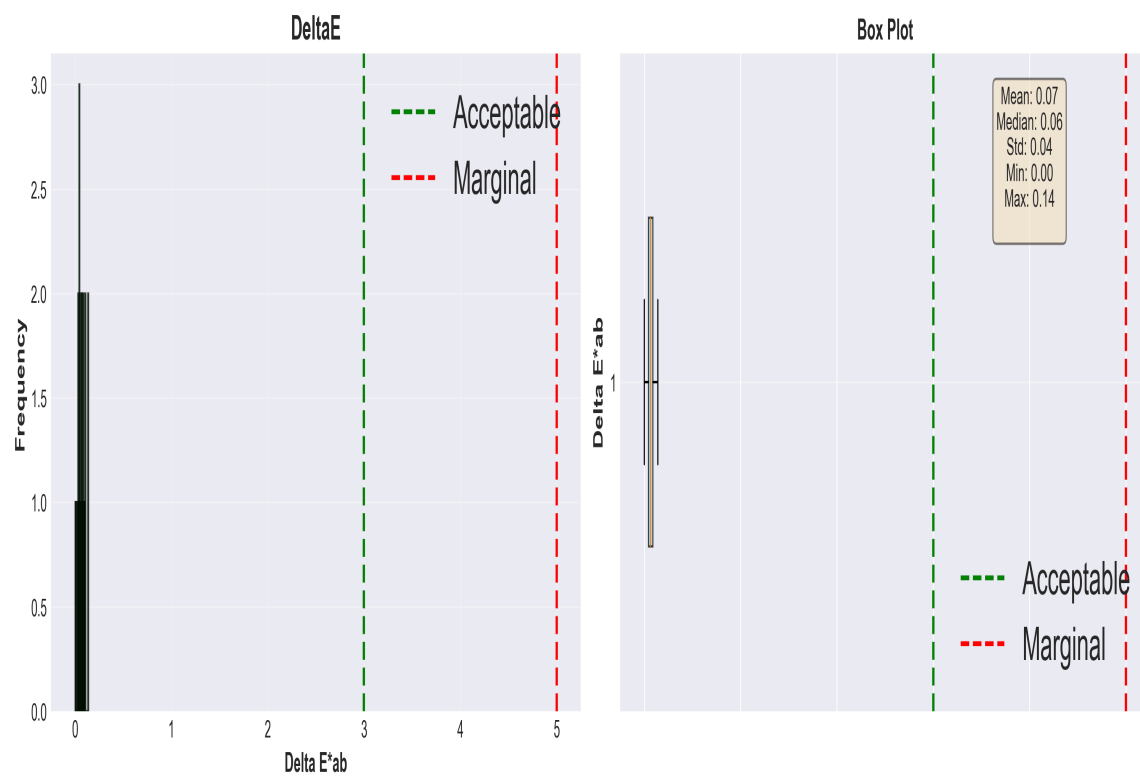
# Uniformity Visualizations

## Uniformity Heatmap

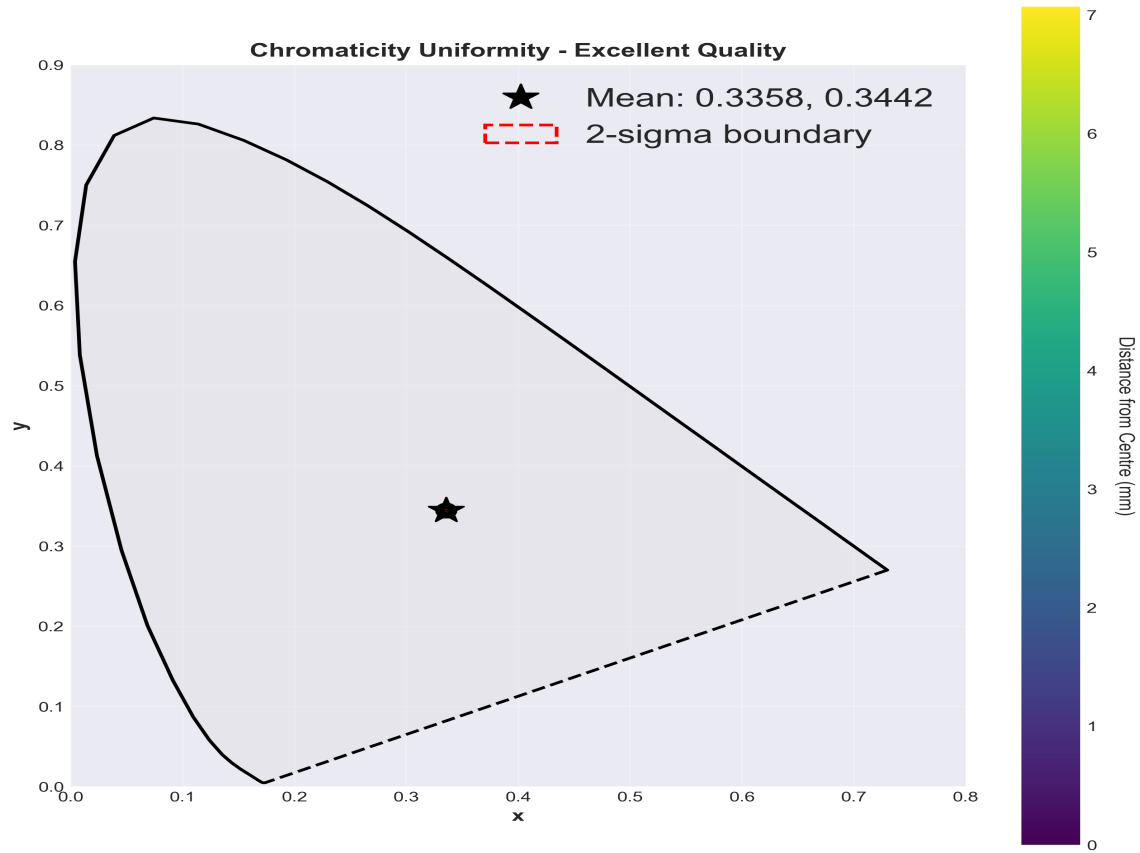


## $\Delta E$ Distribution

DeltaE Distribution - Excellent Quality



Chromaticity Diagram



## Notes

Simulated excellent quality waveguide for testing

Generated by Olufemi Balogun | Photonics QC Lab