

## COLOR CONFORMANCE CONFERENCE '25

New Port Richey, FL (Tampa North) January 28–30, 2025

# Custom Color Specification **Custom Lighting Condition**





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January 28, 2025

Presented by

## A new era in light sources.

- fluorescent lamps. This is a record of history
- difficult to distinguish standards
- They offer different parameters of white point, color rendering indexes.

The previous standard illuminants were group D - daylight and group F - lighting based on

Today, fluorescent lamps have probably remained only above the consoles of printing machines... in our homes, shops, public spaces, artificial light mainly uses LED technology

The progress in development is enormous, these sources are very different and it is

New methods of measuring and evaluating them have been created for LED sources.



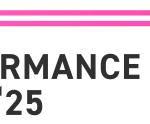
## NO-UV

- demand.
- necessary.
- A new standard D50noUV is being developed.
- No UV deactivates OBAs

LED sources do not produce UV as a side effect, they can do so but only on

• UV radiation itself is essentially harmful - it is not produced where it is not





## **CC Lighting Library**



- Chromachecker started to collect sources of the light
- We add an auto-recognition feature, the Lighting Inspector, which is looking for the closest sample.





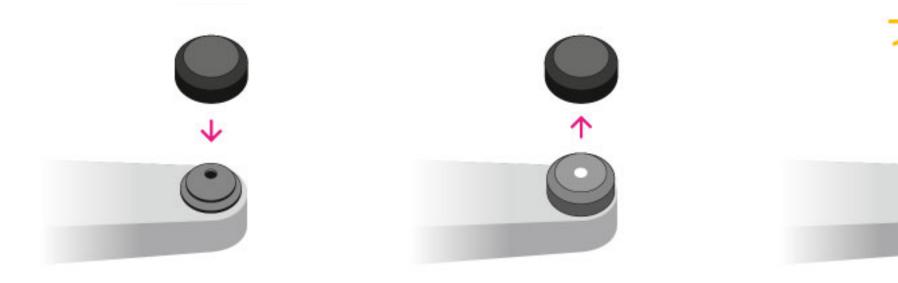
# Use Case - Match a color in a given custom Lighting Condition



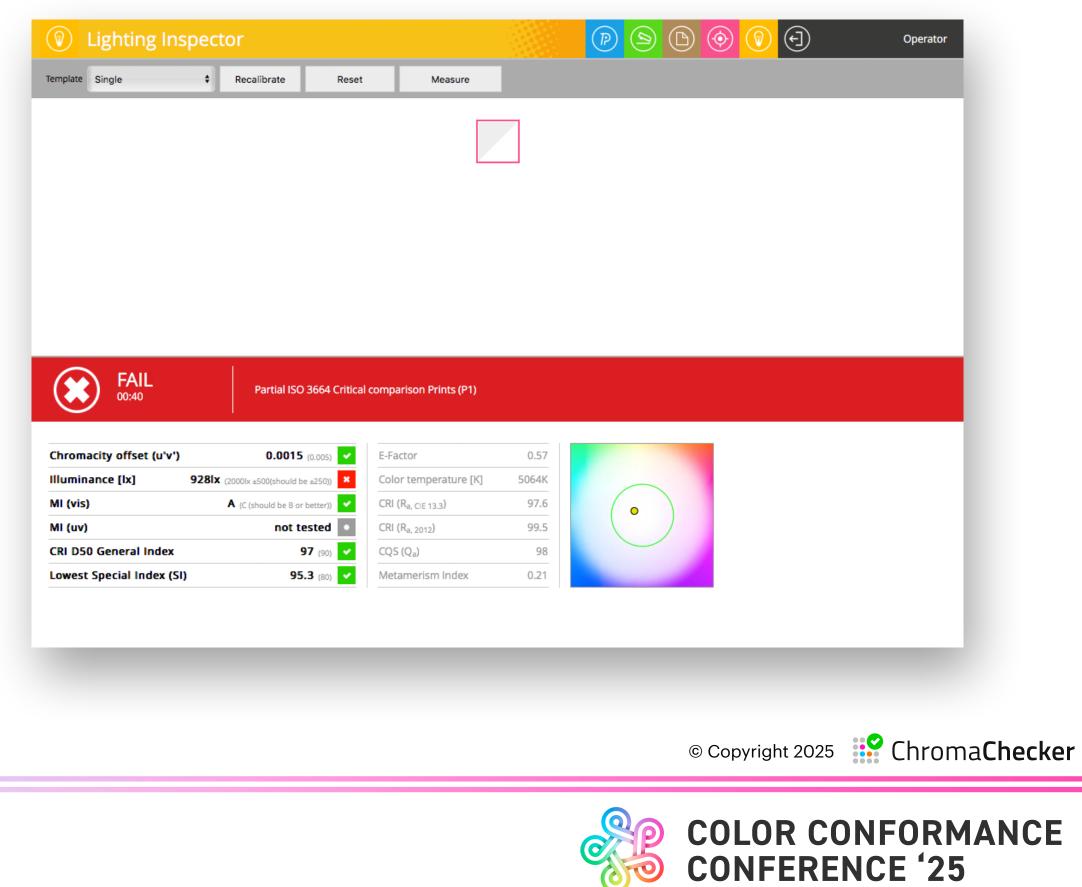


# **Measure Custom Lighting**

- Connect one of supported instruments:
  - ▶ i1Pro
  - Myiro-1
  - Calibrate ColorChecker Studio
- Measure



3 sec. Ň



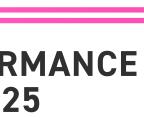


## **Custom Illuminants C1, C2**

- ChromaChecker support two user-define illuminants named C1 and C2
- The user can assign any custom lighting in Color Inspector Global Preferences

e ک	olor Insp	ector Preferer	nces	Assets	Tracking	
Global Preferences 🔗 Color Specifications			LUTs	 LUTs Public Library 🔟 Add new 🛨		
Default Tolerances Designer		Custom Illuminant	Custom Illuminant			
Default toler	Default tolerances that will be applied to newly created QC tracks. Preferences for Designer Tab In CC Capture			Custom Lighting 1 (C1)		
PLEASE NOT Tolerances car	TE: n be defined up to 2 deci	imals.	ΔE Formula ΔE 2000 V	LB copy	~	
In example: if measured value is 3.15 and tolerance is set to 3 it will be marked as pass. (because 3.15 will be rounded to 3). Same result will fail if			Find closest Color in:	Custom Lighting 2 (C2) Krypton Incandescent	~	
tolerance is se	t to 3.0 as 3.15 will be ro	bunded to 3.2.	- ~	Color Conversion		
ΔE <sub>2000</sub> 4,00	∆E <sub>94</sub> 0	ΔE <sub>94 TEX</sub>	Color Inconstancy Index	Default CMYK/nCLR profile		
ΔΕ <sub>76</sub>	ΔE <sub>CMC</sub>	ΔE <sub>CMC2</sub>	ΔE Formula ΔE 2000 V	GRACoL2013_CRPC6 V	2 ~	
0	0	0	Reference Illuminant	Default RGB profile sRGB	~	
ΔC 0	∆h 0	ΔH 0	D65 ~	Default chromatic adaptation	1	
	+ L*		Observer 10 degree	XYZ Scaling	$\checkmark$	
			Flourescence Index (FI)			
- a*		+b*	ΔE Formula			
			ΔE 2000 V			
			Observer 2 degree V			
- b*		+ a*				
Warping Fr	- L*	÷				
Warning Fa						
additional warn	ning will be displayed and	lerance multiplied by warning factor, d measurement will not be autosaved.				
Warning Fact 0	tor Value					
			SAVE			





## Add New Color Specification

### List of illuminant contains C1 and C2

### Color Inspector

Global Preferences 🔗 Color Specifications Groups Collections

### Add new Color Specification

General Informations	Preferences
Name	A
	В
Instrument	С
Konica-Minolta Myiro-1	✓ <sup>D50</sup>
	D65
	E
	F2
	F7
	F11
	C1
	C2
	ADD

Assets	Tracking					
	New Color S	specif	icatio			
Instrument Specification	I					
Those fields are automatically filled based on Your instrumen Most of the time You should not change those.						
Geometry Choice						
SingleAngle		•				
Single Angle Configuration						
Annular						
Illumination Angle						
45.0		-				
Measurement Angle						
0.0		-				
Measurement Type						
Spectrum_Reflectance						
Calibration Standard						







## **Color Specifications**

### Elements:

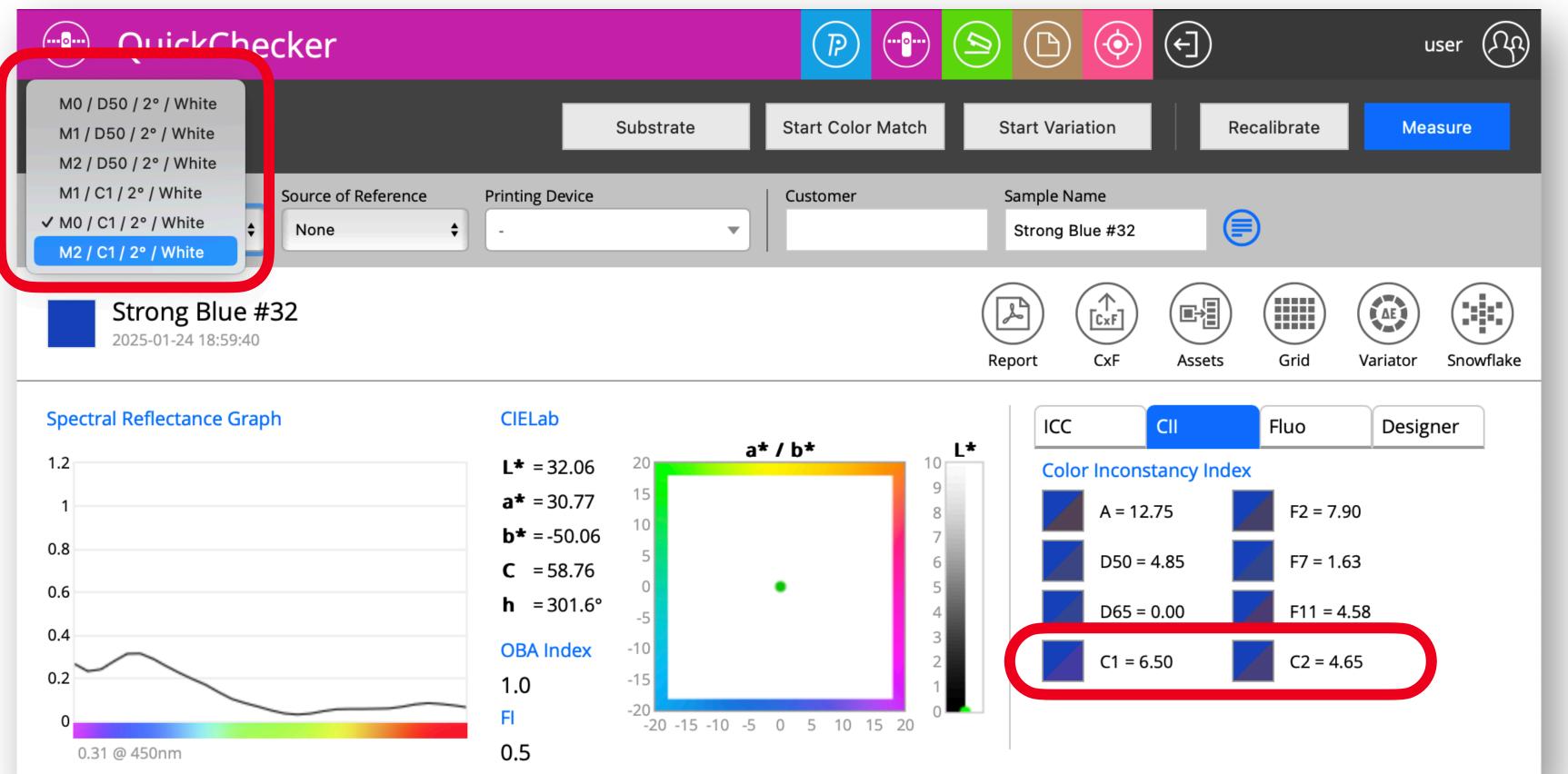
- Instrument
- M-conditions
- Illuminat
- Observer
- Backing

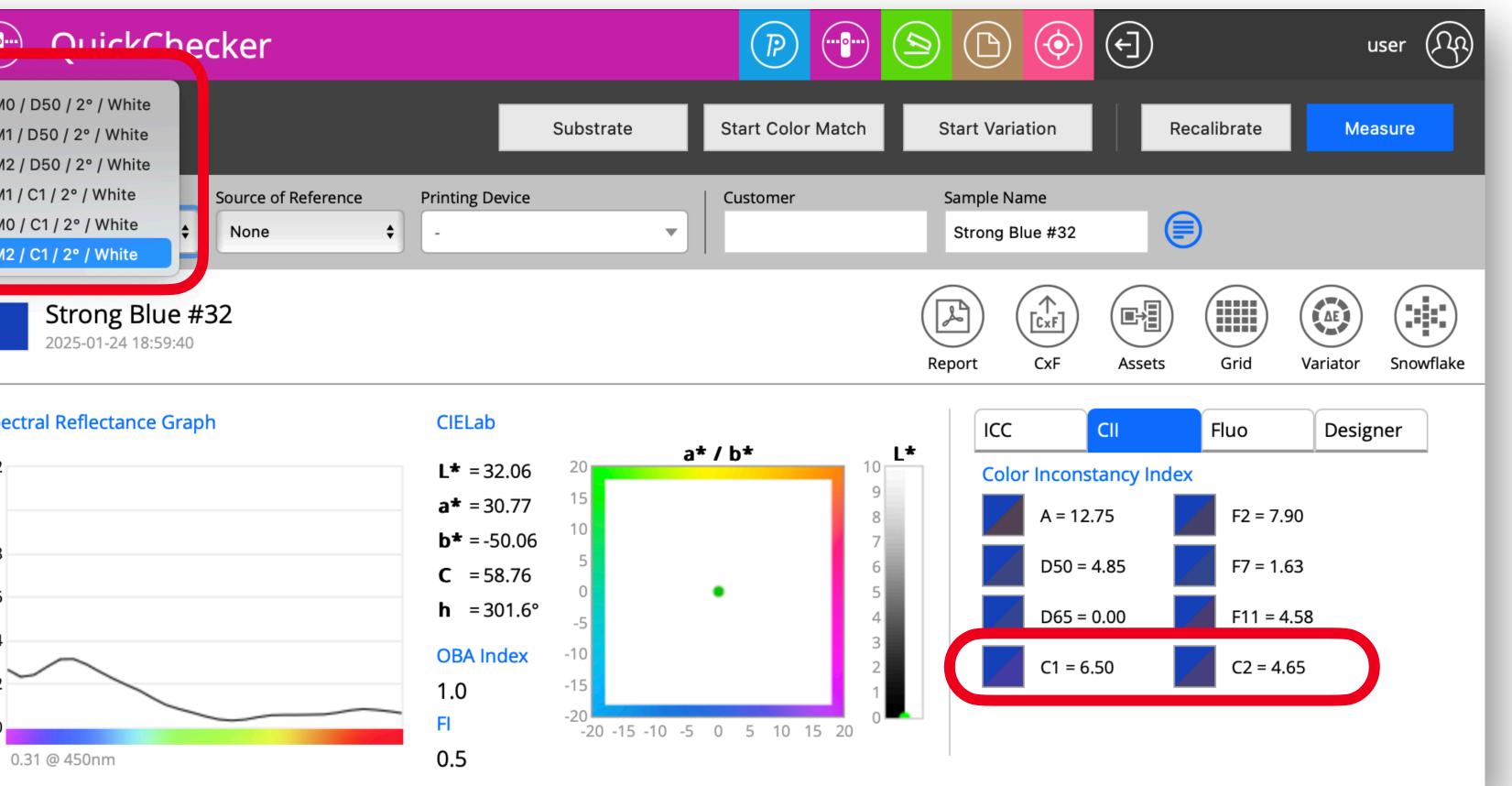
٢	Color Inspe	ector		Assets	Tracking						
G	lobal Preferences 🔗 🛛 🤇	Color Specifications Groups Collections			New Color Specification 🕂						
Color Specifications											
	Name	Instrument	M. Cond.	Illuminant	Observer	Backing					
	default	X-Rite i1Pro 3	M0	D50	2 degree	White	9				
	default	X-Rite i1Pro 3	M1	D50	2 degree	White	۹,				
	default	X-Rite i1Pro 3	M2	D50	2 degree	White	٩,				
	default	X-Rite i1 Pro 2	M0	D50	2 degree	White	۹,				
	default	X-Rite i1 Pro 2	M1	D50	2 degree	White	٩,				
	default	X-Rite i1 Pro 2	M2	D50	2 degree	White	۹,				
	default	X-Rite eXact	M0	D50	2 degree	White	٩,				
	default	X-Rite eXact	M1	D50	2 degree	White	۹,				
	default	X-Rite eXact	M2	D50	2 degree	White	٩,				
	default	X-Rite eXact	М3	D50	2 degree	White	۹,				
	default	Konica-Minolta Myiro-1	M0	D50	2 degree	White	٩,				
	default	Konica-Minolta Myiro-1	M1	D50	2 degree	White	۹,				
	default	Konica-Minolta Myiro-1	M2	D50	2 degree	White	٩,				
	Kreypton/2°	Konica-Minolta Myiro-1	MO	C2	2 degree	White	Q,				
	Kreypton/2°	Konica-Minolta Myiro-1	M0	C2	2 degree	White					





### **Custom CS in practice**

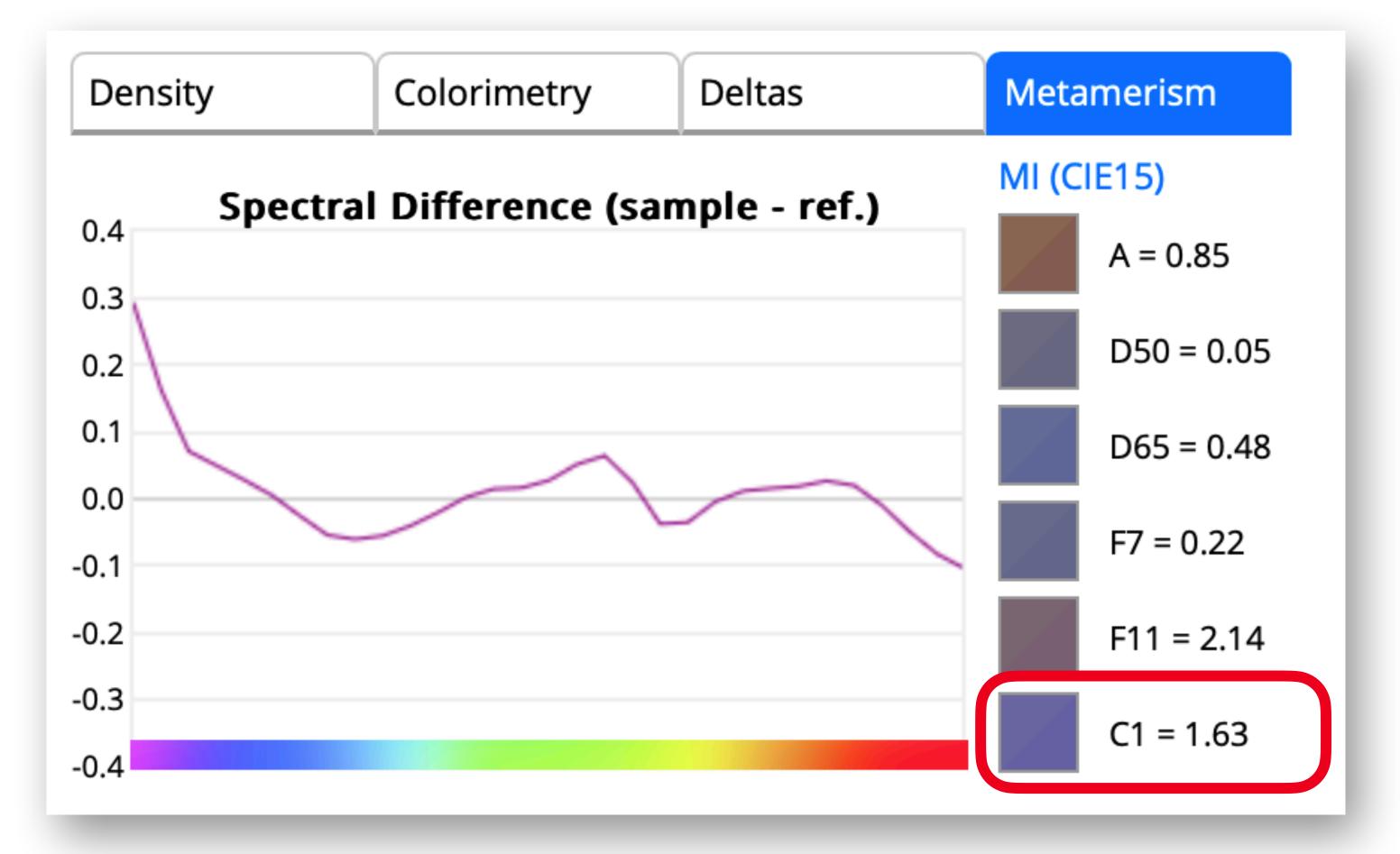








## **Custom CS in practice**







### **CS Roadmap**

### Project Inspector implementation.

The CC development team plans to expand the project definition to include custom lighting and color specifications. We believe that upcoming changes will require significantly better support for modern LED lighting.

Official standards do not keep up with the evolving technology of new light sources.

Chroma Checker joined the Fogra project to develop a new D50noUV standard, but this standard does not adequately describe reality.



### **Resources – Thank You**

### **Helpful links**

- PDF version of this presentation
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