Spyder3 Development Project

Spyder3 Is Setting The Standard Again – October 2007

datacolor

Spyder2 Summary

- Launched in November 2004
- Best in Class Specifications
- Extremely successful
- Over 300,000 units shipped
- <0.01% hardware warranty rate
- Iconic brand

datacolor

Spyder2 Manufacturing Specifications

	Spyder2™	i1 Display 2
Dynamic Range	Black Point: 0.02 cd/m^2 White Point: >5,000 cd/m^2	Black Point: 0.02 cd/m^2 White Point: 3,000 cd/m^2
Accuracy (Chromaticity)	Δx & Δy: typical +/- 0.0035	Δx & Δy: typical +/- 0.004
Repeatability	Δx & Δy: < +/- 0.001	Δx & Δy: < +/- 0.001
Inter-Instrument Agreement	Δx & Δy: typical +/- 0.0016	Not Reported

- Spyder2: Accuracy values are given relative to reference instruments traceable to NIST and NPL. Repeatability measurements are stated for same-sensor/no-dismount situation Room temperature of 20 degrees C, +/- 5 degrees. Reference display is set to white of approx. D50 (x=.345, y=.368) in a darkened room, Inter-instrument Agreement are assessed among more than 4,800 production units.

- i1Display2 Specifications obtained from X-Rite Specification Sheet. Accuracy reported as "relative to Eye-One Pro."

datacolor

Spyder3 Design Objectives

- Build a Next-Generation Device – Not a Re-Spin
- Design for Pro and Serious Photographers
- Improve Accuracy
- Reduce Size
- Decrease Calibration Time
- Support Next Generation Wide Gamut Monitors
- Embed Ambient Light Sensor
- Add a Cradle
- Retain Iconic Spyder Form Factor
- Make it “Sizzle”

datacolor

Design Begins with Light

Ray Trace & Irradiation Studies

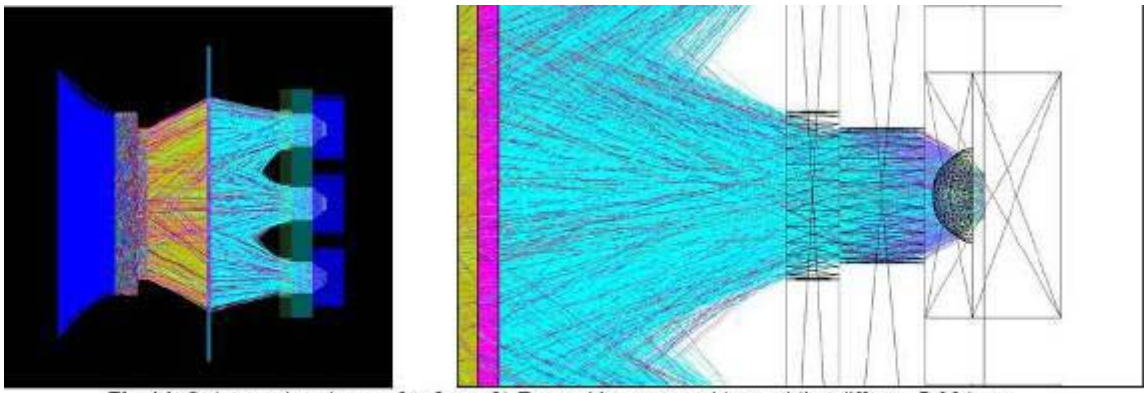
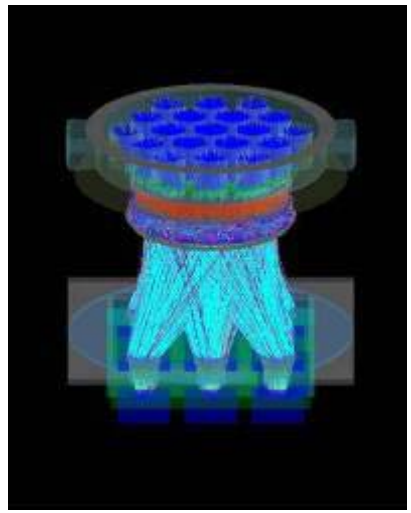
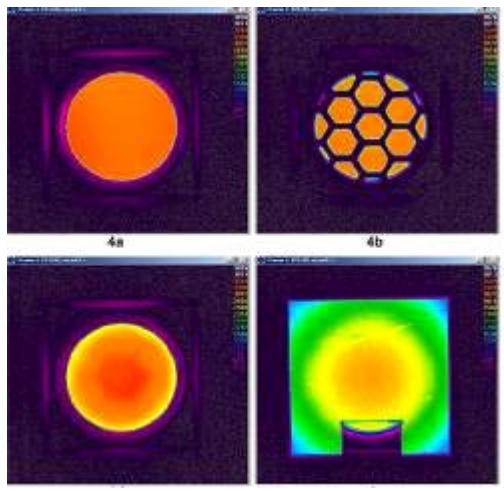


Fig 14 Setup and raytraces for Case 2) Fresnel lens moved toward the diffuser 5.381mm.



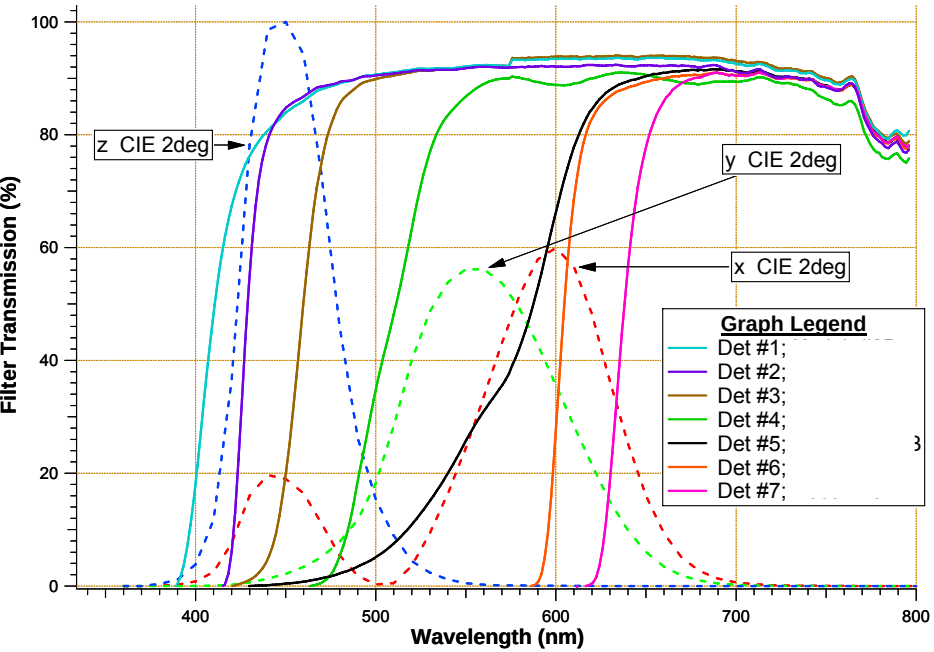
Analysis Conclusions

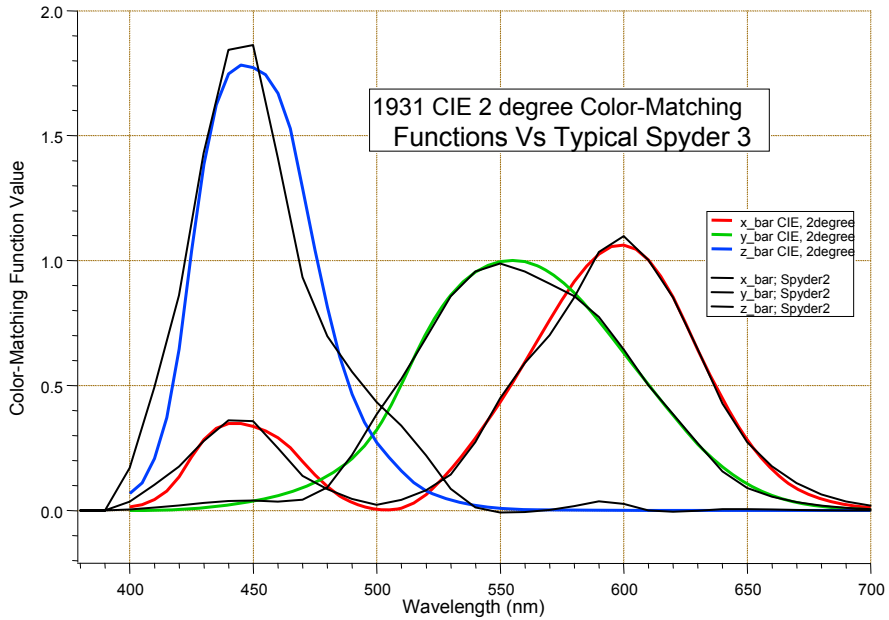
- Utilize Surface Mount LTF Detectors
- Circular 7-Detector Configuration
- Large Diameter Optical Components
- Precise specification of optical train
- Honeycomb baffle specification



datacolor

Precise Color Matching Functions



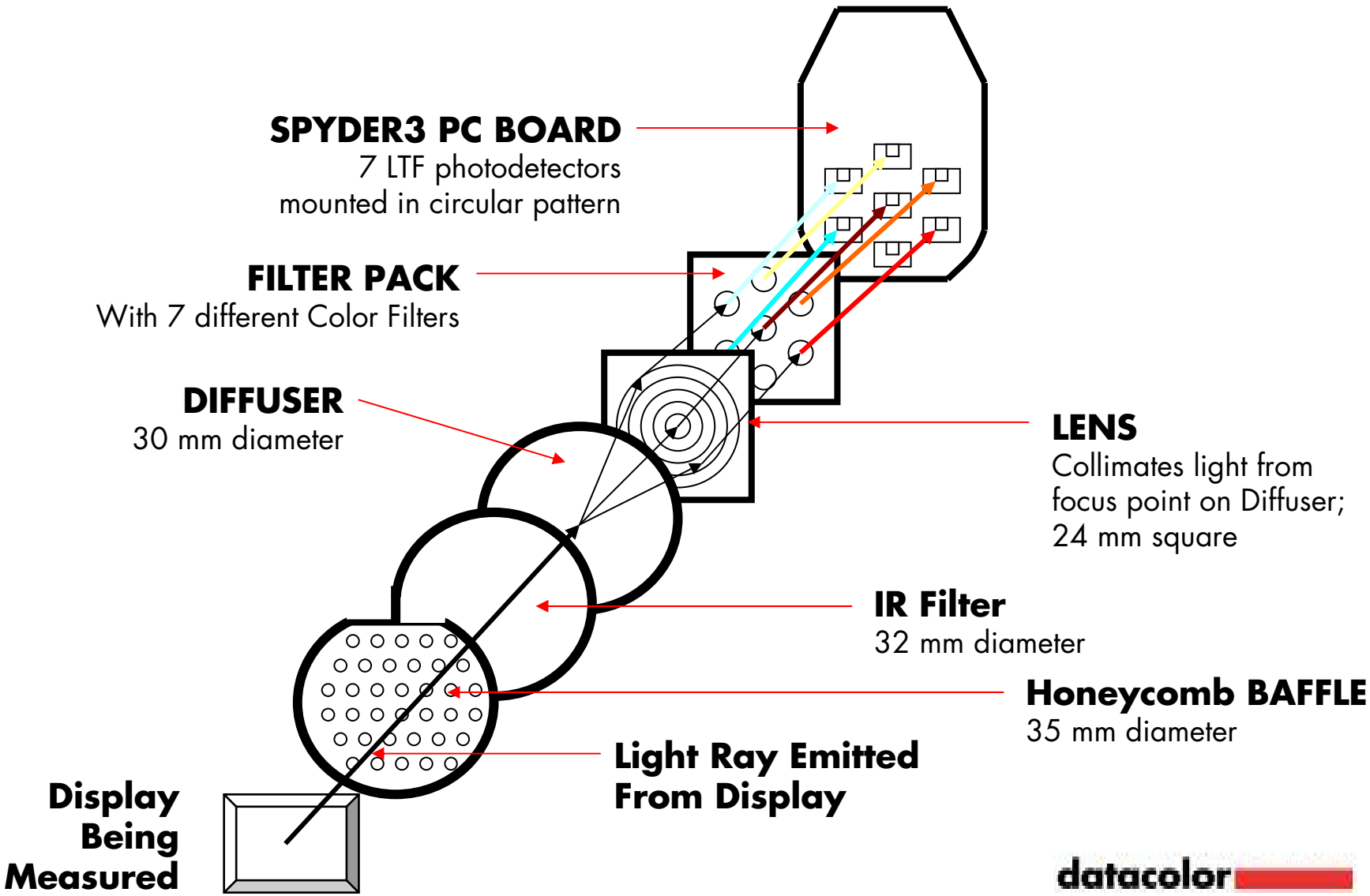


Use of 7 filtered channels provides much more spectral resolution than 3 or 4 channel devices offered by Other suppliers..

7 filtered channels allows a very precise fit to the CIE 1931 2 Degree color matching functions which are the foundation of Display colorimetry.

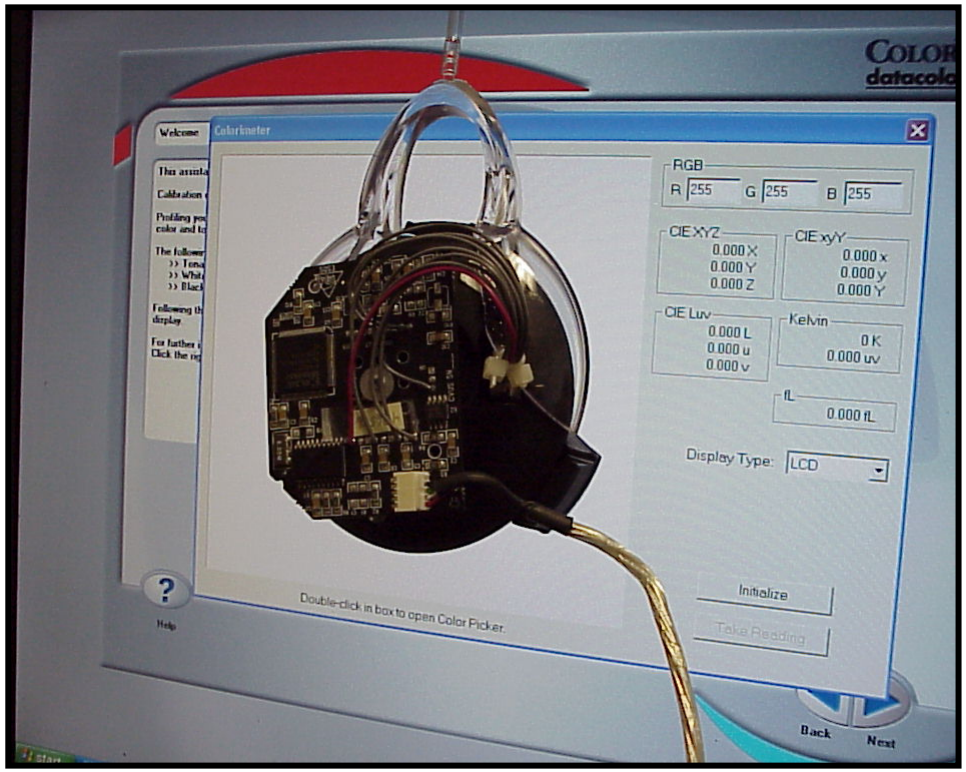
datacolor

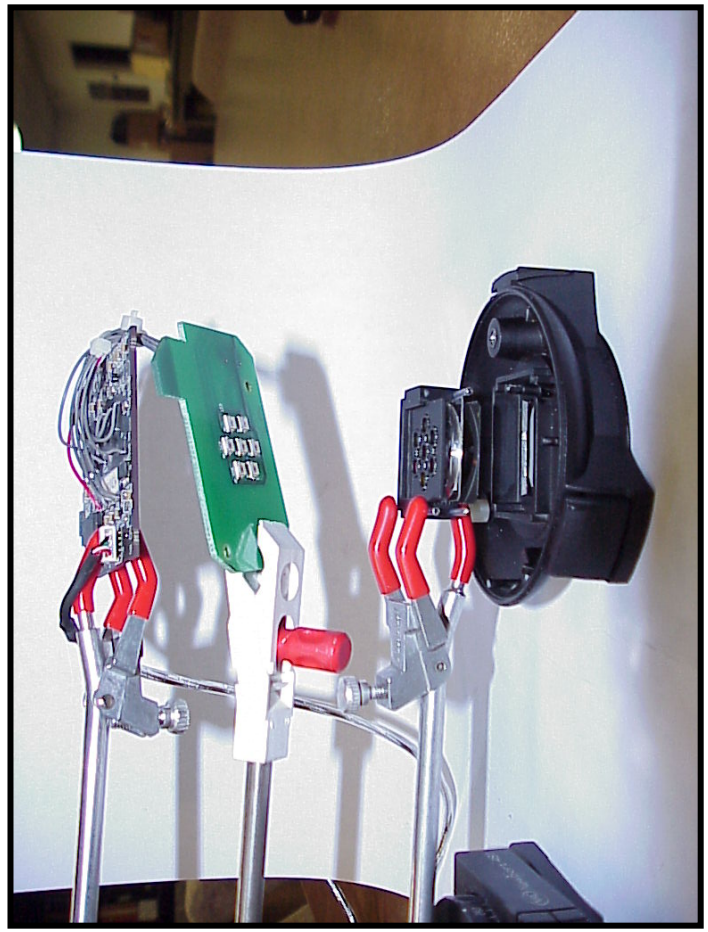
Spyder3 Colorimeter Optical System



datacolor

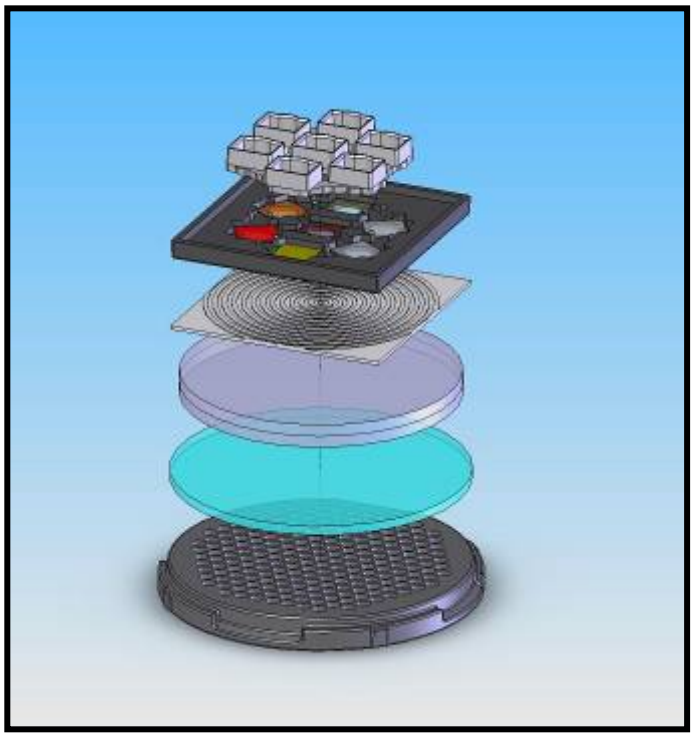
Rapid Prototypes

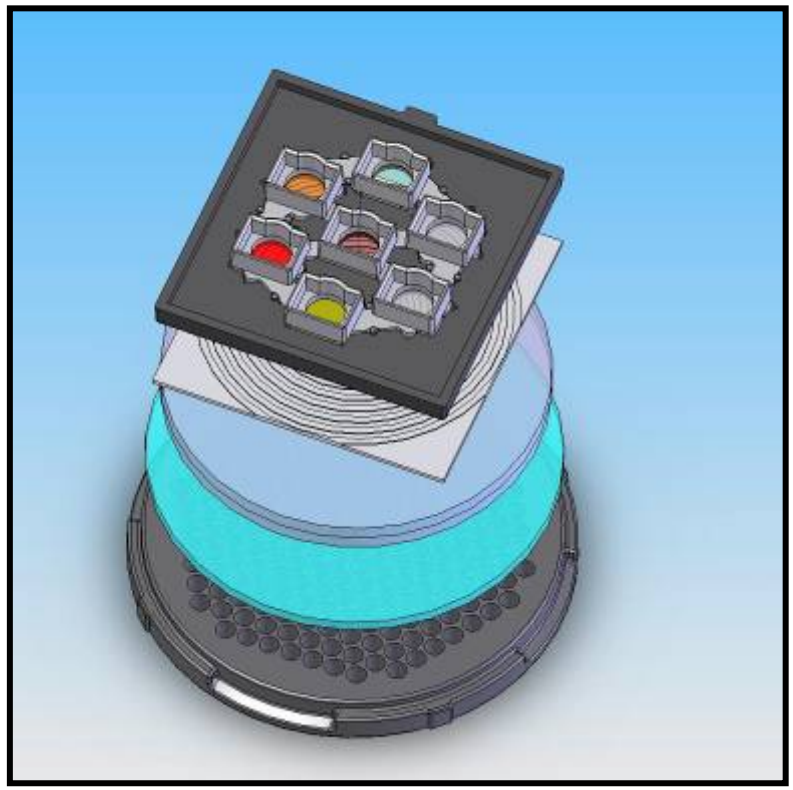




datacolor

Spyder3 Color Engine

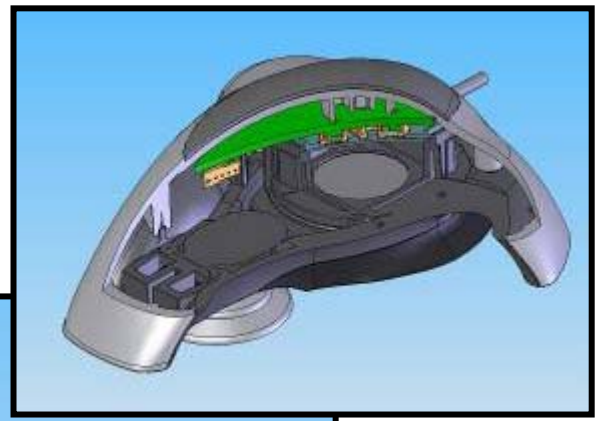


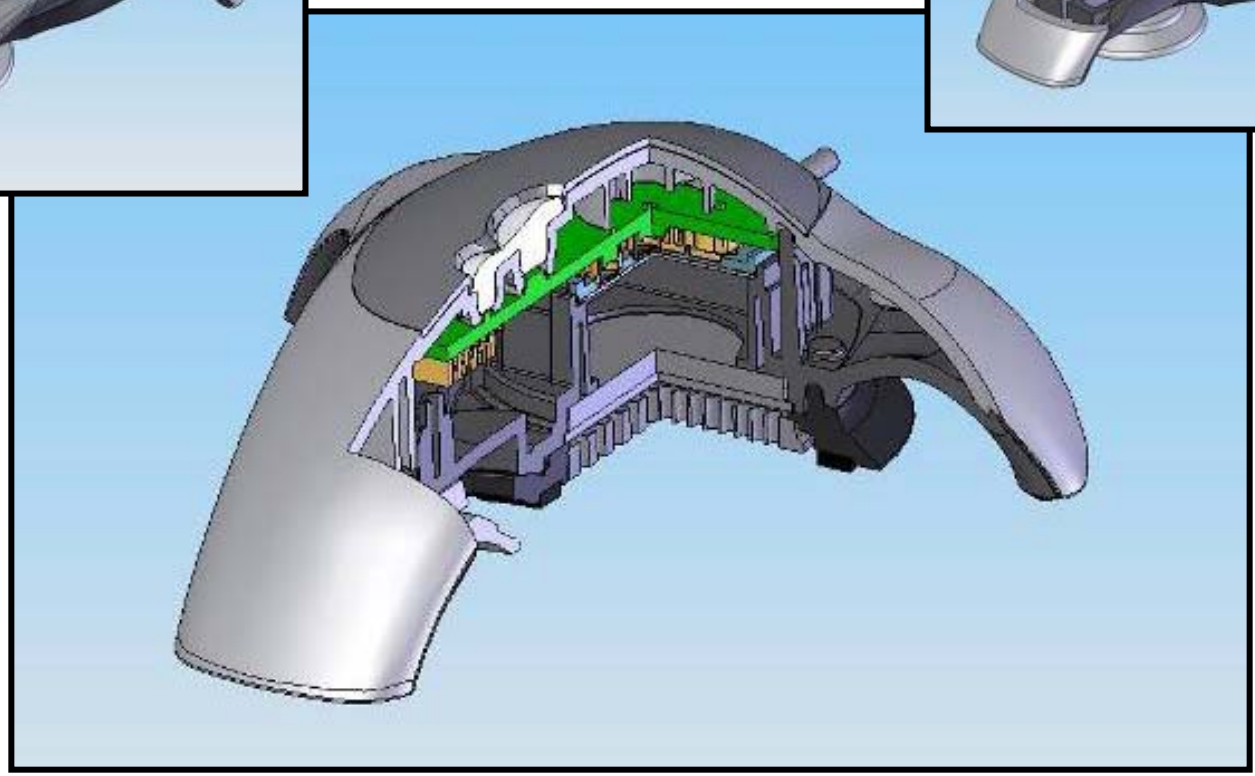


- The Industry's ONLY 7-Detector Color Engine
- The Industry's Largest Light Measurement Aperture

datacolor

Industrial Design Excellence





datacolor

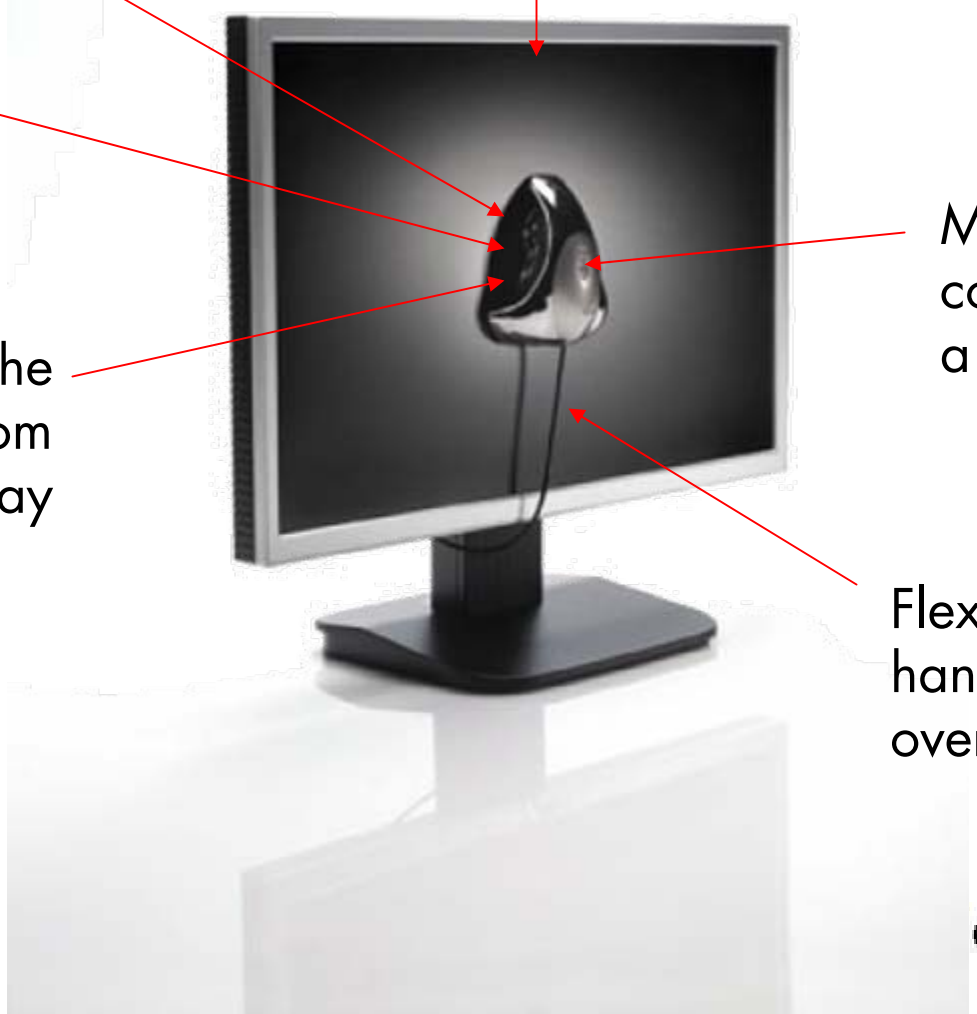
Spyder3 Intellectual Property

Counterweight

Ergonomic design

Color sensor and matching function

Baffle to limit the light angle from the display



Means to reduce color distortion on a screen

Flexible means to hang the colorimeter over the monitor

Patents
US 6,163,377
US 6,784,995
US 6,816,262
US D464,278
US 7,027,140
US 7,072,033
Other patents pending

datacolor

Spyder3 Elite Key Features

Display Calibration for Professional Photographers and Studios

- The industry's only 7-detector color engine and largest light aperture for unrivaled performance
- Faster calibration speeds; recalibrate in half the time
- Software designed for the way photographers work including SpyderProof™, Expert Console, and StudioMatch™
- Embedded ambient light sensor for intelligent calibration correction

datacolor

Setting the Standard. Again

- 28% More Accurate
- 37% Smaller
- 25% to 50% Faster
- Embedded Ambient Light Detector
- Wide Gamut Monitor Support
- Desktop Cradle
- Retains Iconic Spyder Brand Design
- Sizzles

Spyder3™

datacolor

Back Up

datacolor

Spyder2 Vs. Spyder3

Attribute	Spyder2™	Spyder3™	Improvement
Physical Dimensions (cubic in)	29.3	18.4	37% Smaller
Accuracy (typical: Δx and Δy)	0.0035	0.0025	29% More Accurate
Light Measuring Aperture (Area)	165 mm^2	372 mm^2	246% Larger
Initial Calibration Time	7 Minutes	5.0 Minutes	29% Faster
Re-Calibration Time	7 Minutes	2.5 Minutes	64% Faster
Ambient Light Detector	NONE	Embedded	New Feature
Desktop Cradle	NONE	Provided	New Feature
LED Status Indicator	NONE	Provided	New Feature

datacolor