

# CS64A Color Sensors



*In most applications, the human eye is still being used to verify color.*

*The CS64A series of color sensors is changing this. Reducing automation errors. Improving quality. All at production line speeds.*

## Features

- Superior color detection on a wide range of materials
- Long standoff distances and sensing ranges
- Four color ranges are sensed—from blue to near-infrared
- Near-infrared differentiates between materials such as leather, vinyl, and cloth
- Analog outputs tell variations in color within your threshold ranges, quickly sending trend data information.
- Analog outputs also provide universal system compatibility and unlimited sorting opportunities
- 100,000 hour life LED lighting with feedback compensation for LED aging
- One millisecond update rate



*Be confident the color you want is traveling down your production line. Delta's CS64A color sensor will tell you... fast!*

The CS64A provides important performance benefits over other color sensors. Here's why: the diffused LED lighting and large sensing area make the CS64A relatively immune from false readings caused by textured material, grain direction and similar variations.

These sensors also have a wide tolerance for sensor-to-target distance variations. Standoff distances can be up to five inches.

And with the CS64A's analog outputs you get data to identify color variation trends as they develop so deviations can be corrected before product color drifts out of specification.

## Applications

- Distinguish between objects to ensure the correct color object is being processed on your automated production line, such as vehicle headliners, door and body panels, and seats
- Sort objects by color
- Monitor color variations of materials during manufacture such as carpets and ceramic tile
- Detect presence of metal coatings or wood varnish
- Monitor color quality of granular foods such as sugar
- Detect paint marks where bar coding is impractical
- Detect over- or under-cooked baked goods

# CS64A Color Sensors



Twenty-eight high-intensity LEDs, along with a precision photodetector, form the core of the CS64A color detection system. The unit determines color by turning on the LEDs—one color at a time—and analyzing the diffuse reflected light from the material or object in the sensing area.

Reflected intensity in each of the four color ranges appears as a 0-10V signal on the corresponding four analog outputs, making the CS64A compatible with any PLC, PC, or system having 0-10V analog inputs. Four analog outputs allow an almost unlimited number of colors to be distinguished.

Manufacturing and processing industries where Delta's versatile CS64A color sensor adds significant benefits and improves quality include:

- Automotive
- Baking
- Ceramics and tile
- Coffee and tea
- Confectionery
- Forest products
- Furniture
- Metal finishing
- Paper
- Pharmaceutical
- Plastics and rubber
- Textiles
- Woodworking

## Specifications

Model	CS64A-00	CS64A-02
<b>Sensor-to-Object Standoff Distance</b>	1.75 to 2.0" (45-50mm) optimum	4.75 to 5.0" (120-125mm) optimum
<b>Sensor-to-Object Sensing Range</b>	1.25" (32mm): 1.25 to 2.5" sensor-to-object	1.25" (32mm): 4.25 to 5.5" sensor-to-object
<b>Sensing Area</b>	0.35" (9mm) square @ 1.75" (45mm)	0.7" (18mm) square @ 4.75" (120mm)
<b>Response Time</b>	64us to read all four colors	
<b>Output Update Rate</b>	< 1 millisecond	
<b>Analog Outputs</b>	Four, 0 to 10V at 5mA max	
Color 1	470nm Blue	
Color 2	880nm Near-Infrared	
Color 3	660nm Red	
Color 4	570nm Green	
<b>Calibration</b>	9.5V and 100% ratios (Red/NIR, Blue/NIR, and Green/NIR) with > 99% diffuse reflection	
At Standoff Distance	1.75" (45mm)	4.75" (120mm)
<b>Ratio Variation with Sensing Distance</b>	0.6% max per 0.25" (6mm) change in sensor-to-object distance (< 2% max over sensing range)	
<b>Temperature Stability</b>	Ratios 0.1%/C typical	
<b>Supply Voltage</b>	+24VDC ±5%	
<b>Current Consumption</b>	100mA maximum	
<b>Enclosure</b>	Dust tight; 6.0 x 5.3 x 1.3" (153 x 135 x 33mm) excluding strain relief; 1.25 lb (2.75 kg)	
<b>Environment</b>	+10 to +40C operating; -25 to +85C storage; 0 to 90% humidity, non-condensing	

## Ordering Information

**CS64A-00** 1.75" to 2.0" (45 to 50mm) nominal standoff distance

**CS64A-02** 4.75" to 5.0" (120 to 125mm) nominal standoff distance

Delta can evaluate your product samples and send a report to you showing how the CS64A will help in your applications. For details about this service, additional information, or help with applications unique to your quality control needs, call, write, fax, or email us today. And check us out online: [deltacompsys.com](http://deltacompsys.com)

## Company Profile

Delta Computer Systems, Inc. manufactures color sensors, motion controllers, and other industrial controls providing high performance automation solutions to a wide range of industries.



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