

ILLUMINATION

COBRA™ Linescan Backlight

HIGH-BRIGHTNESS BACKLIGHT FOR LINESCAN
AND WEB INSPECTION

FEATURES

- Patented COBRA technology enables breakthrough in optical intensity
- Current-regulation electronics integrated into COBRA unit
- Intensity can be adjusted using 0 to 5 V analog voltage control
- Meets NEMA 12 requirements
- High level of uniformity due to chip-on-board LED fabrication
- 125 mm, 250 mm and 500 mm
- Available in red, IR, blue, UV and white
- Backlight and frontlight configurations

APPLICATIONS

Web and linescan inspection of:

- Foil
- Paper
- Plastic film
- Non-wovens
- Currency
- PCBs
- Semiconductors
- Glass
- Metal sheets
- Flat panel displays

ACCESSORIES

- Power Supplies
- External Control Unit



COBRA Linescan Illumination has been designed "from the chip up" for the extreme requirements of high-speed linescan and web inspection. The LED-based COBRA lines are comparable to, or outperform, halogen and fluorescent line illumination, while offering all of the many advantages of LEDs — long lifetime, controllability, and increased reliability.

Intense optical output is achieved by means of StockerYale's patented chip-on-board reflective array (COBRA) technology, a unique innovation in thermal and optical efficiency for LED arrays. The chip-on-board approach to LED module fabrication yields an essentially unbroken line of semiconductor light source, resulting in an extremely high level of uniformity. The combination of high intensity and superior uniformity results in crystal clear linescan images.

Available in backlight and frontlight configurations.

SPECTRAL CHARACTERISTICS

Color		UV	Blue	Red	IR	White
Peak wavelength	(nm)	395 ± 5	470 ± 5	630 ± 10	740 ± 10	NA
Spectral width FWHM	(nm)	30	30	30	30	NA
Color temperature	(°K)	NA	NA	NA	NA	5500

OPTICAL POWER DENSITY AT DIFFUSER SURFACE

		UV	Blue	Red	IR	White
TCL and SCL	W/m ²	120	450	660	660	NA
	lumens/m ²	NA	30 000	132 000	NA	105 000
CCL and RCL	W/m ²	34	130	190	190	NA
	lumens/m ²	NA	8 600	38 000	NA	30 000

DC ELECTRICAL POWER REQUIREMENTS***

			UV	Blue	Red	IR	White
TCL and SCL	125 mm	(W)	20	25	34	34	29
	250 mm	(W)	40	50	69	69	58
	500 mm	(W)	80	100	138	138	116
CCL and RCL	125 mm	(W)	5.7	7.1	9.7	9.7	8.3
	250 mm	(W)	11	14	19	19	17
	500 mm	(W)	23	29	39	39	33

*** It is recommended that the 48 V power supplies provided by StockerYale be used.

POWER SUPPLIES

Current regulation electronics are incorporated inside the COBRA Linescan Backlight units. A convenient, cost-effective means of powering the devices is to use StockerYale's standard 48 V COBRA power supplies. These supplies are mountable on DIN rail TS35/7.5 or 15.

CONTROLLING THE COBRAS

All COBRA units having the same part number are factory set to the identical maximum optical output power level. The output can be adjusted downward from this maximum factory-set value using an analog voltage control signal (0 to 5.0 V) applied to pin #6 on the 6-pin COBRA connector.

COBRA CONNECTOR PIN OUT

1	DC Supply (+)
2	GND
3	On/Off (TTL)
4	Error signal (TTL) High = Unit functioning properly Low = Thermal shutdown, or no power to unit.
5	Master Brightness Control GND
6	Master Brightness Control 0 to 5 V analog.

EXTERNAL CONTROL UNIT

An external control unit (ECU) is available as an accessory for use with the COBRA Linescan Backlight. StockerYale's ECU offers the following convenient features:

- brightness control dial
- on/off switch
- LED indicators (power, connection status and thermal shutdown)
- 125 mm (h) x 70 mm (w) x 100 mm (d)
- mountable on DIN rail TS35/7.5 or 15

COBRA users can also engineer their own control unit should they not desire to use StockerYale's ECU accessory.

COBRA PART NUMBERS

The SCL and TCL COBRAs are designed to push the envelope of what is possible with LED line illumination. They provide the optical power required in the most demanding linescan and web inspection applications.

The CCL and RCL COBRAs produce less optical power. Their cost/performance point has been chosen for lower speed applications.

For the monochromatic COBRAs (395, 470, 630 and 740 nm), StockerYale makes use of its unique patented chip-on-board reflective array (COBRA) technology. For white sources, however, we use an alternative technology – surface mount LEDs.

	Chip-on-board reflective array (for monochromatic COBRAs)		white
High-speed linescan	TCL	SCL	
Low-speed linescan	CCL	RCL	

COBRA PART NUMBERS

POWER LEVEL	WAVELENGTH (nm)	LENGTH (mm)	CONFIGURATION FRONTLIGHT/BACKLIGHT
CCL	395	125	F
TCL	470	250	B
	630	500	
	740		
RCL		125	F
SCL	000 (white)	250	B
		500	

Other wavelengths available. Please contact us for details.

Examples: **TCL-630-125-B**; **RCL-000-500-F**

POWER SUPPLY PART NUMBERS

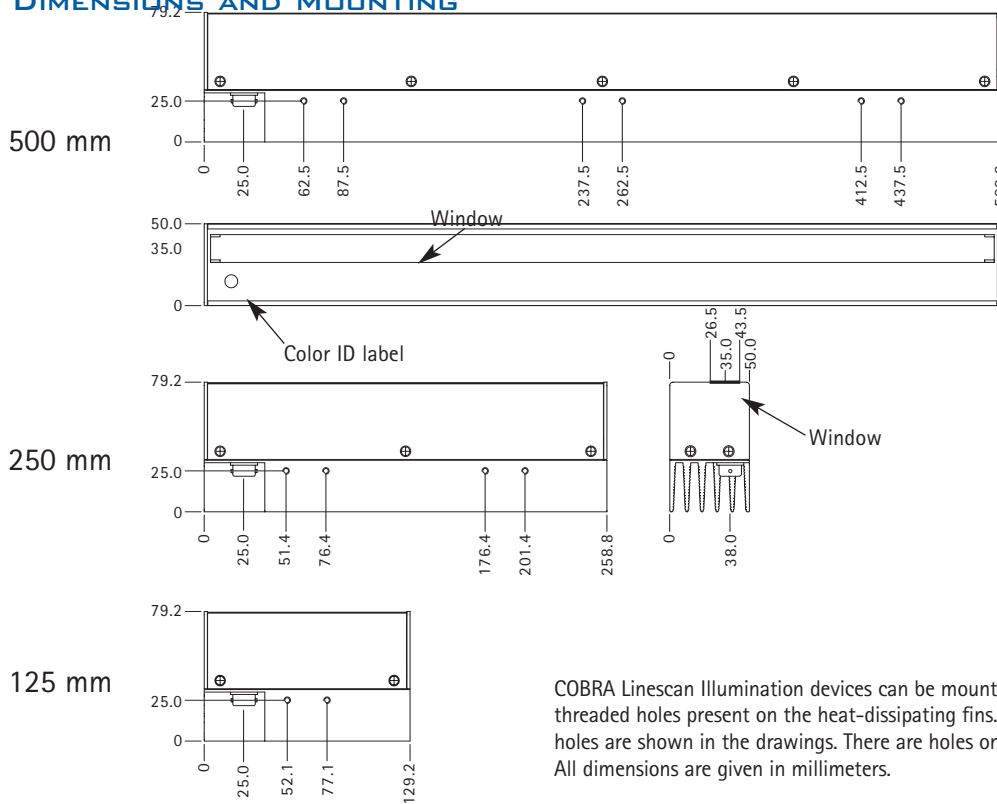
To determine appropriate power supply part number, refer to the table of DC Electrical Power Requirements. Choose COBRA-PSU-120 or COBRA-PSU-240, so that the rated power supply wattage is greater than the COBRA device requirement.

StockerYale Power Supply	Rated Wattage
COBRA-PSU-120	120 W
COBRA-PSU-240	240 W

EXTERNAL CONTROL UNIT PART NUMBER

Part number for the external control unit is **COBRA-ECU-G**.

DIMENSIONS AND MOUNTING



COBRA Linescan Illumination devices can be mounted using M4x0.7 metric threaded holes present on the heat-dissipating fins. The positions of these holes are shown in the drawings. There are holes on both sides of the units. All dimensions are given in millimeters.

Information and specifications contained herein are deemed to be reliable and accurate. StockerYale reserves the right to change these specifications at any time without notice.