

UV COBRA Slim™

Supplementary information



Crystal Clear Line Scan Images

COBRA Slim Linescan Illuminators have been designed “from the chip up” for the extreme requirements of high-speed linescan and web inspection. LED-based COBRA Slim lines outperform halogen and fluorescent line illumination, while offering all of the many advantages of LEDs – long lifetime, controllability and increased stability.

The chip-on-board (COB) 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.

The ProPhotonix COB approach to LED module fabrication coupled with the engineering developments in thermal and optical design result in greater controllability and increased output power up to 4 million Lux.



Key Features

- Design: Slim and compact
- Field adjustable: focussing distance and diffusers
- Chip-on-Board: Extreme brightness and high uniformity
- Modular: available in any length
- Current monitoring & error detection
- Wavelengths: from UV to Visible to IR
(See relevant Datasheet for more information)

Options Available

- Strobing function (Potential for 5 times brighter)
- Onboard Ethernet Control
- Optical Intensity Feedback

Key Applications

Web and linescan inspection of:

- Foil
- Paper
- Plastic fill
- Currency
- PCBs
- Glass
- Semiconductors
- Flat panel displays

Focus & Illumination Field - 365nm COBRA Slim

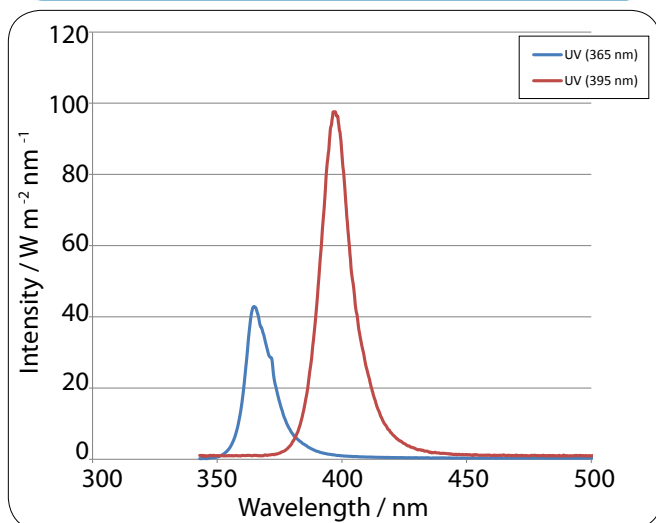
Lens Position	Working Distance (WD) Range For Illuminance ⁽¹⁾ (mm)	Working Distance (WD) At Peak Intensity (mm)	Line Width ⁽²⁾ (FWHM) For WD Range (mm)	Focal Distance ⁽³⁾ (mm)	Line Width (FWHM) At Focal Distance (mm)
Unit Length	300mm	300mm	300mm	All Lengths	All Lengths
S1	10-160	divergent	13.5-17.7	divergent	divergent
S2	10-202	divergent	10.1-14.1	divergent	divergent
S3	10-110	collimated	9.6-12.0	collimated	collimated
S4	10-140	10	5.5-10.6	198	5.1
S5	10-140	102	3.3-9.7	143	3.3
S6	36 -103	78	2.1-5.6	109	2.1
S7	46-81	66	1.6-3.2	83	1.6
S8	38-68	55	1.5-3.0	67	1.5
S9	35-58	48	1.2-2.5	56	1.2
D1	10 -52	divergent	9.4-14.5	divergent	divergent

(1) For S1-S2 range is for 50% or higher intensity. For S3-S9 range is for 90% or higher intensity.

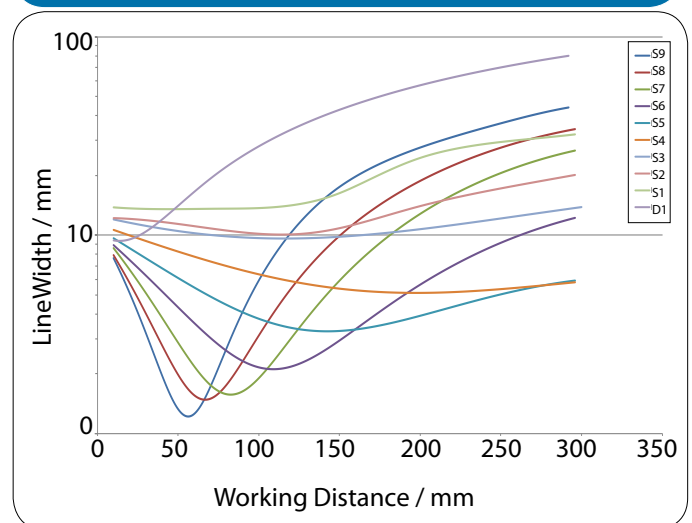
(2) For more details on Line Width, see graph.

(3) Positions S1 and S2 are divergent i.e. No focus, beam width increases with working distance. Position S3 produces the most collimated beam.

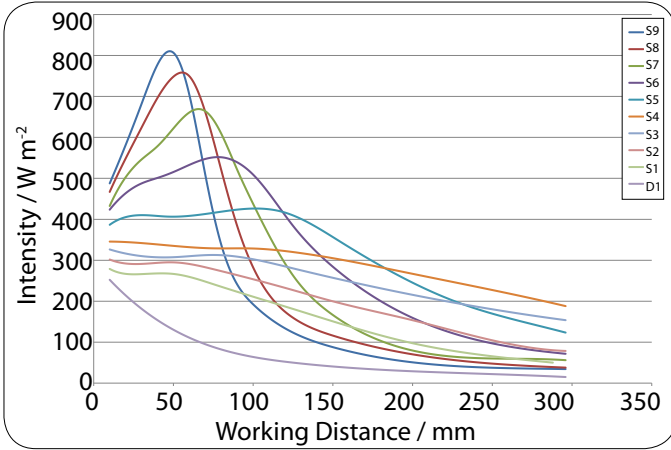
Spectral Distribution



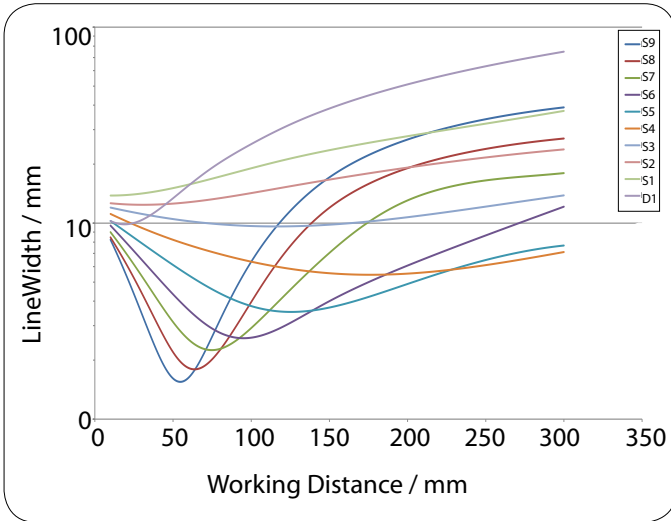
Beam Width Versus Working Distance - 365nm



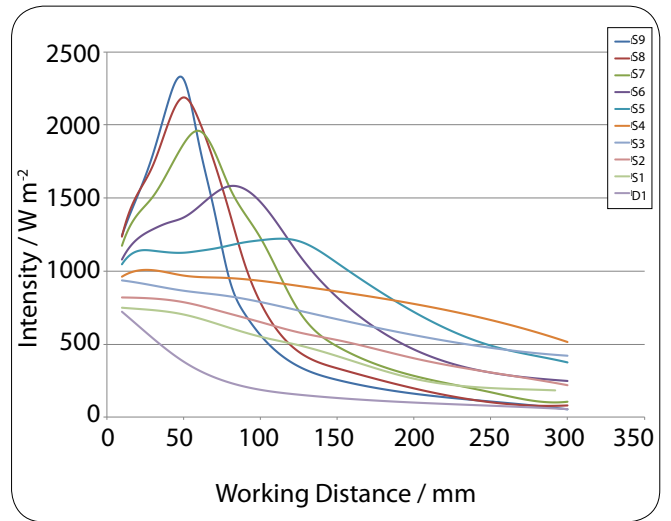
Intensity Versus WD - 365nm



Beam Width Versus Working Distance - 395nm



Intensity Versus WD -395nm



Note: The behavior of Intensity with Working Distance will be similar for units with 3 or more modules

Focus & Illumination Field - 395nm COBRA Slim

Lens Position	Working Distance (WD) Range For Illuminance ⁽¹⁾ (mm)	Working Distance (WD) At Peak Intensity (mm)	Line Width ⁽²⁾ (FWHM) For WD Range (mm)	Focal Distance ⁽³⁾ (mm)	Line Width (FWHM) At Focal Distance (mm)
Unit Length	300mm	300mm	300mm	All Lengths	All Lengths
S1	10-163	divergent	13.8-24.7	divergent	divergent
S2	10-197	divergent	12.4-19.1	divergent	divergent
S3	10-69	collimated	10.0-12.0	collimated	collimated
S4	10-119	26	5.9-11.1	176	5.5
S5	14-145	113	3.5 -9.7	124	3.5
S6	58 -104	82	2.6-3.7	96	2.6
S7	44-73	59	2.3-3.7	75	2.2
S8	39-62	50	1.8-3.2	64	1.8
S9	38-56	48	1.5-2.4	55	1.5
D1	10 -53	divergent	9.9-14.0	divergent	divergent

(1) For S1-S2 range is for 50% or higher intensity. For S3-S9 range is for 90% or higher intensity.

(2) For more details on Line Width, see graph.

(3) Positions S1 and S2 are divergent i.e. No focus, beam width increases with working distance. Position S3 produces the most collimated beam.

Part Numbers

Cooling		Configuration		Standard Wavelengths (nm)		Length (mm)	Lens Type ⁽⁶⁾		Lens Position		Diffuser or Options	
C	Convection	IL	Error output & analogue control	0365	UV	0100	S	Standard	0	No Lens	D0	No Diffuser
T	Fan	SL	IL Options + Strobe Capability	0395	UV	↓	R	Custom Optics for Broad Illumination	1	Closest to LEDs	D1	60:10 (Backlight)
		EL	IL Options + Ethernet Connector	0470	Blue	0900	M	Extra Internal Micro-lens	↓	Furthest from LEDs	D2	30:1
		AL	All Options	0630	Red	1000			9		D3	To Be Defined
				0870	Near-IR	1100					↓	
				0000	White						D9	
				0RGB	Red, Green & Blue						F1-9	Additional Focusing Lens Option
								6000			P1-9	Parallel Light (Adaptor Option)

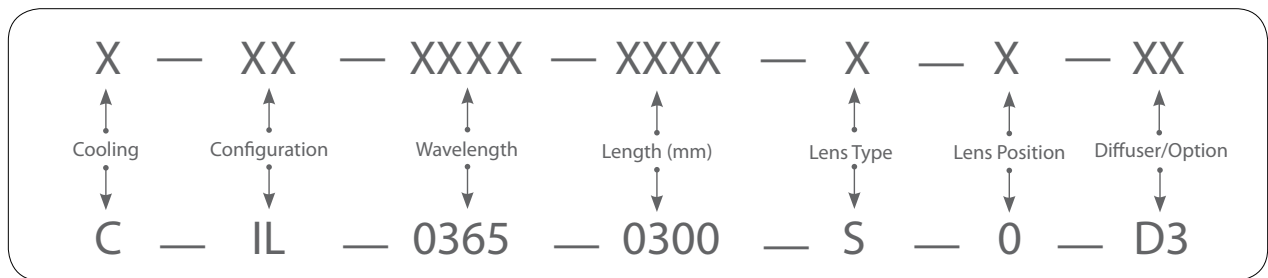
365-1500 nm custom wavelengths are also available

(6) Non-standard lenses are also available on request

(7) 365 & 395 units available in CIL and TIL only.

Note: Prophotonix recommends lens position XXX-XXXX-XXXX-S2-D1 for a backlight configuration

To order your COBRA Slim – Select Cooling Option(X) – Select Configuration (XX) – Select Wavelength Length (XXX) – Select Length (XXXX) - Select Lens Type & Position (XX) - Select Diffuser Option (XX)



Power Requirements

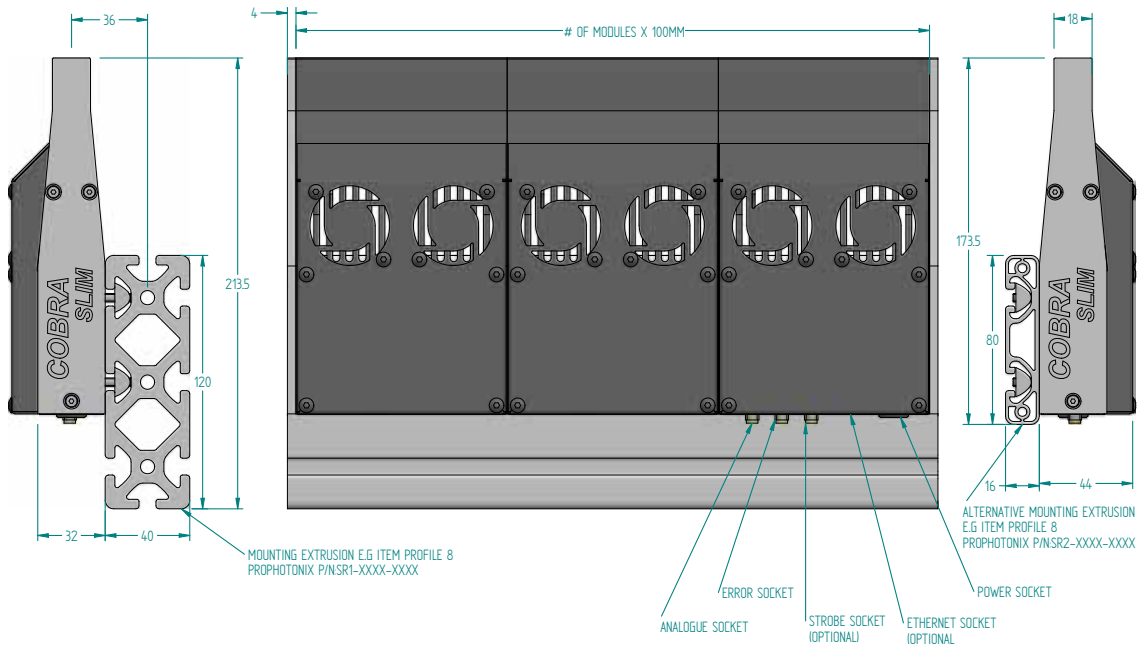
Cobra Type	Power Rating Per 100-mm Module	Cobra 100-mm Modules Per Power Supply ⁽⁸⁾
TXL	24VDC / 40W	5 max ⁽⁹⁾
CXL	24VDC / 25W	8 max ⁽⁹⁾

(8) PSU-24V-240W-XX.or comparable 24VDC standard power supply

(9) Single power input connection

COBRA Slim comes with a 2 metre power cable as standard. This is the only cable required to use the light at full intensity. This cable can be tailored to the specific application requirements. To order the power cable use the following part number C2-CAB-PWR-XXXX where XXXX is the length of the cable in cm.

Dimensional Diagram



For all COBRA Slim longer than 100-mm, standard Item brand aluminium extrusion Profile 8 is used for rigidly aligning and connecting the 100-mm COBRA Slim modules together. The extrusion is also used for mounting the light. Two options are available (see dimensional specifications). To order your extrusion select the profile (SR1/SR2) - select the length of the COBRA Slim (XXXX) - Decide on the length of rail required (XXXX)

(Note: the overall length of the COBRA is 8mm longer than its emitting aperture)



Note: Other extrusion profile forms and dimensions available on request. Custom back plates also available on request. 100mm units do not require a mounting extrusion.

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Corporate

32 Hampshire Road
Salem, NH 03079
sales@prophotonix.com
Tel: +1 603-893-8778
Fax: +1 603-898-8851

LED Solutions

3020 Euro Business Park, Little Island
Cork, Ireland
sales@prophotonix.com
Tel: +353-21-5001313
Fax: +353-21-4297749

Laser Solutions

Sparrow Lane, Hatfield Broad Oak
Hertfordshire, CM22 7BA, UK
sales@prophotonix.com
Tel: +44-1279-717170
Fax: +44-1279-717171

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