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High Power UV LED Solutions

Boston Electronics

# VioBeam-1X1: Ultra Narrow Beam UV LED

## An exceptionally focused beam with higher intensities at longer distances.

The VioBeam-1X1 is an ultra narrow beam, high power UV LED COB specialized for collimation, fiber coupling, and focused illumination applications.

With an integrated 10° TIR fused silica optic and UVB or UVC LED, the VioBeam-1X1 delivers an exceptionally focused & narrow beam emitting up to 0.1W optical output.

## Features & Benefits

- Ultra narrow 10° fused silica optic with high UVC transmission
- Achieves high intensity UVB or UVC light at longer throw distances
- Available in 255nm, 265nm, 275nm, 295nm, and 310nm
- Can be provided with a compact heatsink and driver (plug & play module)

## Designed For:

- Reaching longer throw distances with lower loss of optical power and intensity
- Efficient coupling with optical fibers or light guides
- Achieving collimation with reduced optical train and optical losses

## Applications In:

- Spectroscopy
- Life Sciences
- Disinfection
- Sensing
- Curing

| Part Number | Wavelength (nm) | Forward Current (mA) | Optical Output (mW) | Forward Voltage (V) | Viewing Angle (degree) |
|---|---|---|---|---|---|
| VioBeam-1X1-310-V1 | 310 | 700 | 100 | 6.0 | 10° |
| VioBeam-1X1-295 | 295 | 700 | 80 | 5.8 | 10° |
| VioBeam-1X1-275-V1 | 275 | 700 | 110 | 6.2 | 10° |
| VioBeam-1X1-265-V1 | 265 | 700 | 95 | 6.2 | 10° |
| VioBeam-1X1-255-V1 | 255 | 500 | 45 | 5.9 | 10° |

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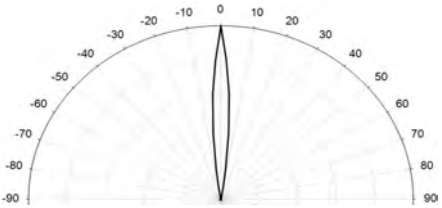
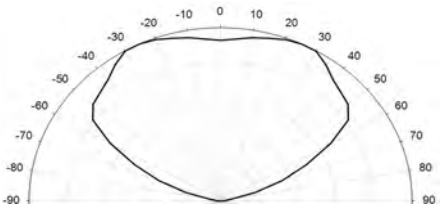
# Irradiance Comparison: Ultra Narrow vs. Wide Beam Angle 265nm LEDs

A comparison of 10° and 135° beam angles shows that the VioBeam-1X1-265-V1 achieves concentrated optical radiation and significantly higher intensities with minimal losses at longer distances such as 50mm.

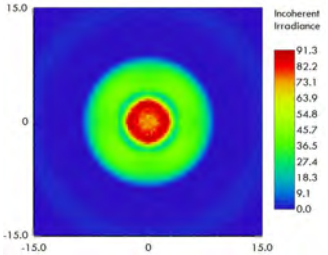
## VioBeam-1X1-265-V1 (10° Beam Angle)



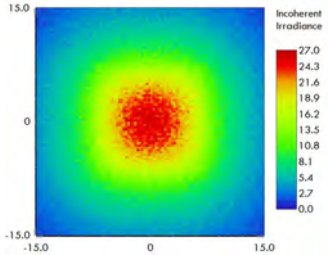

## VC1X1C48LC-265-V1 (135° Beam Angle)



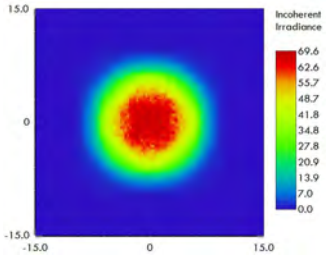

## Max Intensity at 10mm: 91.3mW/cm²



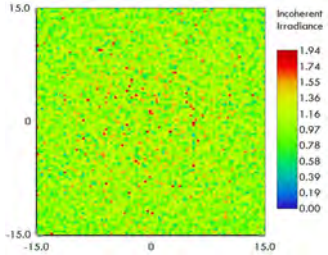

## Max. Intensity at 10mm: 27.0mW/cm²




## Max. Intensity at 50mm: 69.6mW/cm²




## Max. Intensity at 50mm: 1.94mW/cm²




*Optical simulations of VioBeam-1X1-265-V1 (10°) and VC1X1C48LC-265-V1 (135°). Simulation Settings: Detector: 30mm x 30mm; Distances: 10mm, 50mm; Pixel Size: <1mm².*