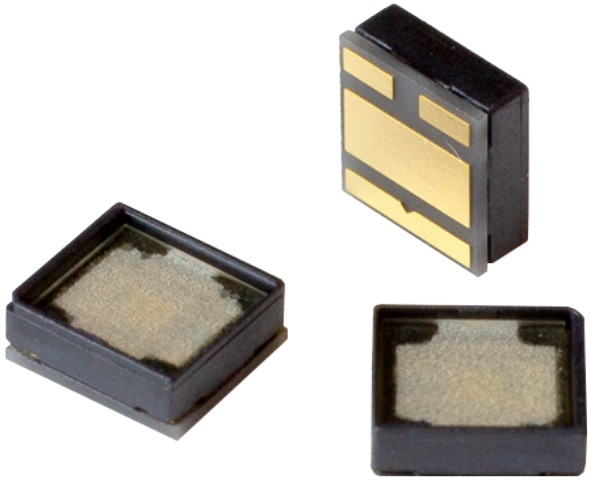
LUMENTUM

10 W Flood Illuminator Module

FOI Type: 103 x 84 degrees



Lumentum 10 W flood illuminator leverages the company's decades of large-scale manufacturing expertise in providing industry-standard and field-proven VCSELs to the market. The state-of-the-art module's compact package integrates three-junction VCSEL arrays, an optical diffuser, a ceramic substrate, and a photodiode to provide high efficiency, reliability, and the highest optical peak power in a consumer-grade flood illuminator with built-in eye safety function.

Lumentum partners with driver IC providers to offer illumination solutions for different sensing applications. Lumentum also provides reference designs of custom driver circuits together with VCSEL for special applications that may require higher power and narrower pulse width.

Key Features

- 10 W peak optical power
- Compact dimension: 3.5 x 3.2 x 1.3 mm
- FOI: 103 x 84 degrees
- High efficiency and reliability
- PD embedded for eye safety monitoring

Applications

- Time-of-flight (ToF) 3D sensing

Electrical and Optical Characteristics

	Symbol	Units	Minimum	Typical	Maximum	Condition
Electrical						
Output optical power	P_o	W	9.0	10.0	12	Note 1
Threshold current	I_{th}	A	0.35	0.6	-	
Forward voltage	V_f	V	4.7	5.2	5.7	
Power conversion efficiency	PCE	%	-	43	-	
Slope efficiency	SE	W/A	-	2.6	-	
Differential resistance	Rs	ohm	-	0.21	-	
Optical						
Center wavelength	λ_c	nm	933	940	947	I_F = 4.5 A
Spectral width (RMS)	dλ	nm	-	-	2	I_F = 4.5 A
Wavelength temperature coefficient	dλ/dT	nm/°C	-	0.07	-	-20°C to 85°C
Field of illumination (X axis)	FOVx	deg	-	103	-	I_F = 4.5 A, Note 2
Field of illumination (Y axis)	FOVy	deg	-	84	-	I_F = 4.5 A, Note 2
Photodiode monitor current	I_{pd}	mA	-	11	-	Vbias= 5 V, I_F = 4.5 A

Note:
1. Test condition: Ambient temperature 25°C, I_F = 4.5 A, 10 µs pulse width, single pulse
2. FOI value was measured from projected image on screen

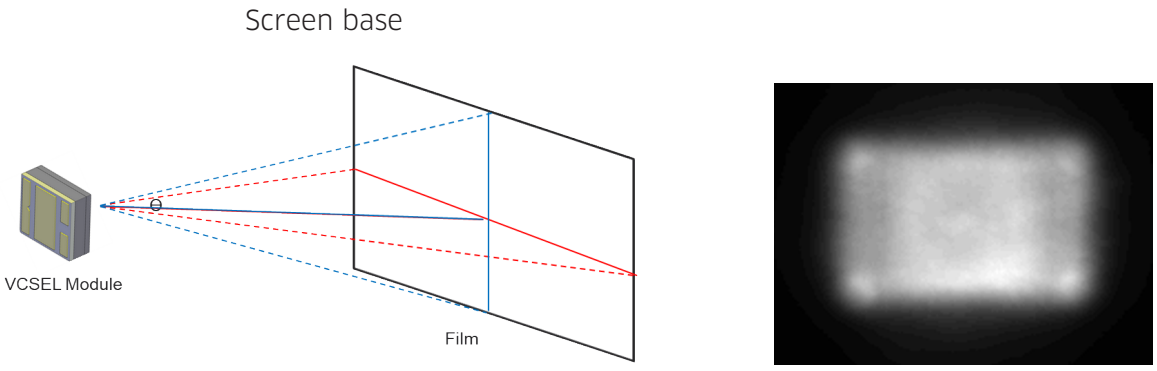
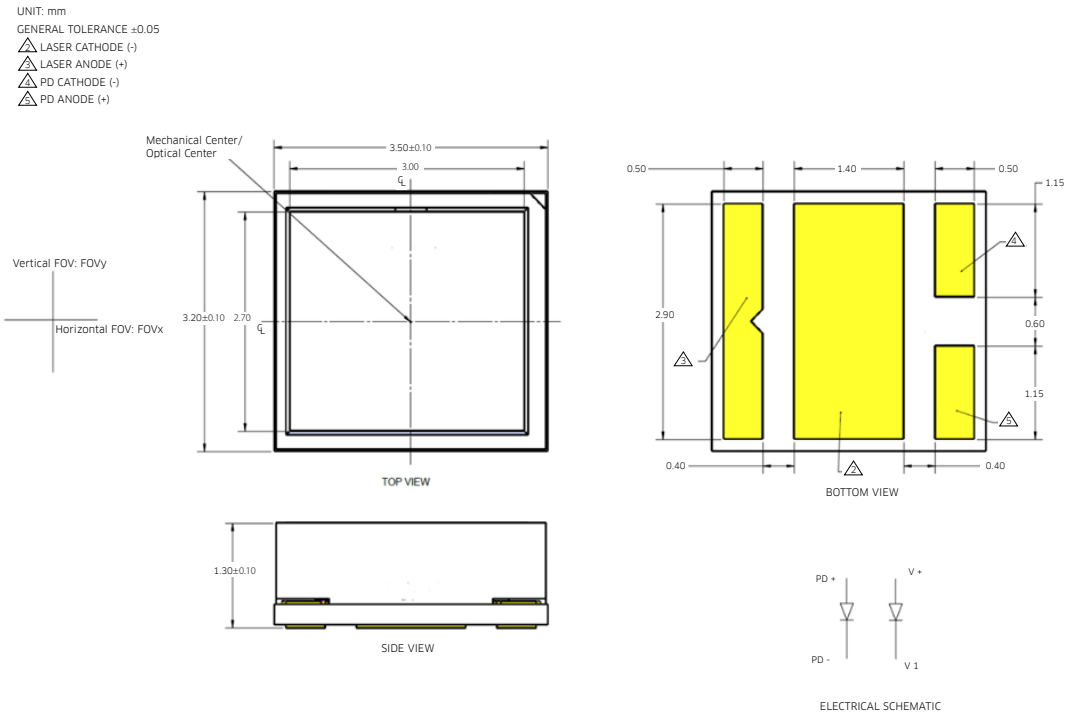


Figure 1: FOI Measurement Method

Mechanical Specification



Laser Safety

Notes:

1. This component requires the provision of drive and control electronics before emitting laser radiation.
2. Laser classification depends upon the system control circuit and any laser safety features provided.
3. Both IEC 60825-1 and FDA/CDRH certifications are system-level requirements.
4. Compliance with 21CFR 1040.10 and/or IEC 60825- 1:2014 will need to be determined at the system level.

Ordering Information

For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum directly at customer.service@lumentum.com.

Description	Ordering number
10 W Flood Illuminator Module	32491002-001

LUMENTUM

North America
Toll Free: 844 810 LITE (5483)

Outside North America
Toll Free: 800 000 LITE (5483)

China
Toll Free: 400 120 LITE (5483)