EPIGAP OSA

Innovating

Photonics

Made in Germany

SWIR LED (Chips) from 1000-2300 nm in Low-, Mid-, and High-Power Packages Enabling Applications from Quality Control to Defense

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10.12.2024

About us – Our History

EPIGAP OSA
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Company:

- Located in Berlin-Köpenick
- ISO 9001
- 80 Employees
- 3 clean rooms

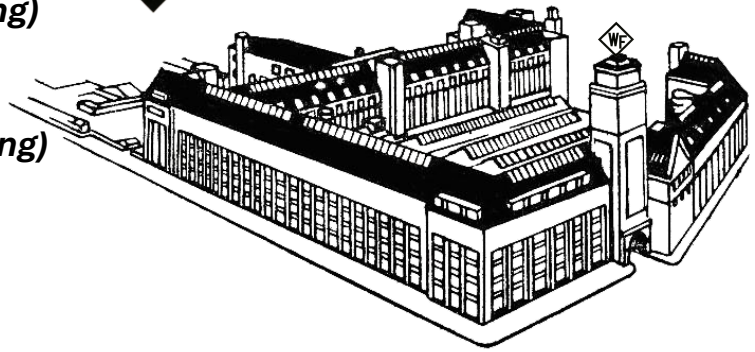
Products:

- LED & PD chips
- SMD LEDs
- THT LEDs
- Modules and sensors

Market:

- 58% Germany and EU
- 18% US and Canada
- 16% Israel

Young and dynamic company with a 70 Year History!



WF produced first LEDs in East Berlin:
1952 - 1993 Werk für Fernsehelektronik (WF) *(acquired by Samsung)*

Spinouts from WF:
1991 – 1999 OSA-Elektronik *(acquired by Chicago Miniature Lighting)*
1995 – 2008 EPIGAP Optoelektronik *(acquired by Jenoptik)*

Re-establishment of companies as independent entities:
2002 – 2023 OSA Opto Light
2011 – 2023 EPIGAP Optronic

Company merger and growth to new heights:
Since 2023 EPIGAP OSA Photonics

osa opto light

EPIGAP

Fields of Applications

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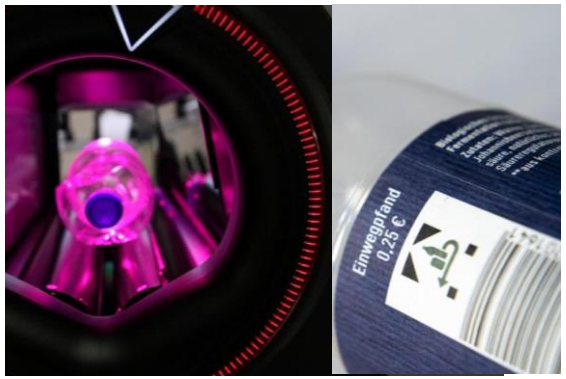
- **Health care & life science**
- **Safety and security**
- **Industrial sensors**

e.g. Patient monitoring

- Pulse oximeter
- Blood glucose meter
- Surgical instruments
- NIR spectroscopy sensor for oxygen saturation

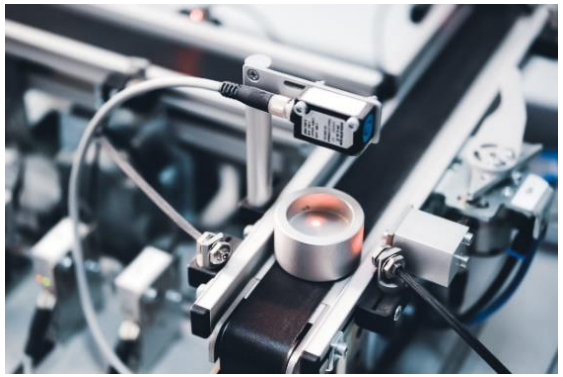
e.g. Trade mark protection

- UV and IR illumination



e.g. Automatic doors & motion control

- Light barriers
- One-way/reflection light barriers



Product Portfolio

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- Short lead time
- Stable supply for decades (if necessary)
- Domestic production
- Full spectrum (255 – 2300 nm)
- Single – multi wavelength
- Standard - customized

UV LED
Bare chips
250-400nm

UV THT
250-400nm

UV SMD
250-400nm

Broadband Light Sources
Chip
SMD
THT

Monolithic Displays
Custom product design

Listed at
Farnell
RS
DigiKey

VIS LED
Bare chips
400-700nm

VIS THT
400-700nm

VIS SMD
400-700nm

VCSELs
850 – 940nm

Multi-chip SMD
Multiple Wavelengths
Customized Designs

IR LED
Bare chips
700-2300nm

IR THT
700-2300nm

IR SMD
700-2300nm

PDs
UV-IR
Chip
SMD
THT

Point Sources
VIS – IR
Chip
SMD
THT

Chip-on-board
Custom designs
Multiple Wavelengths
Customized Designs

Product Varieties

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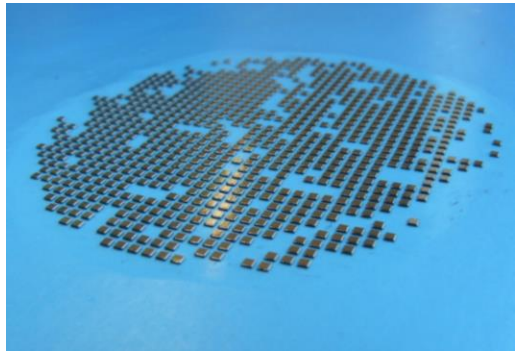
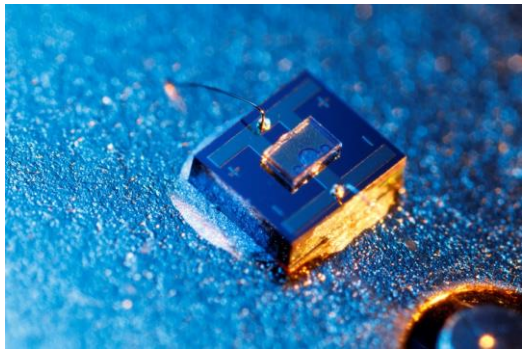
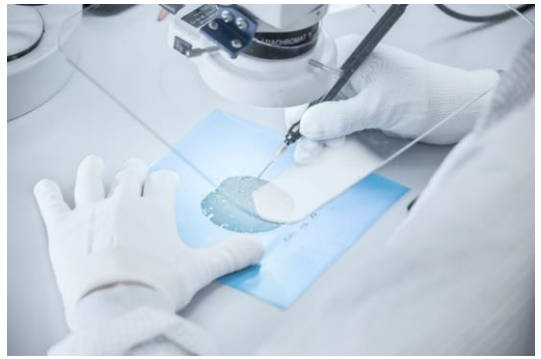
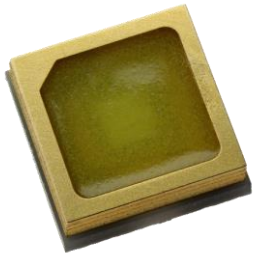
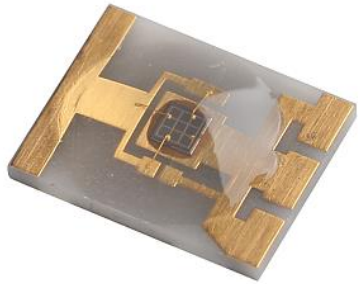
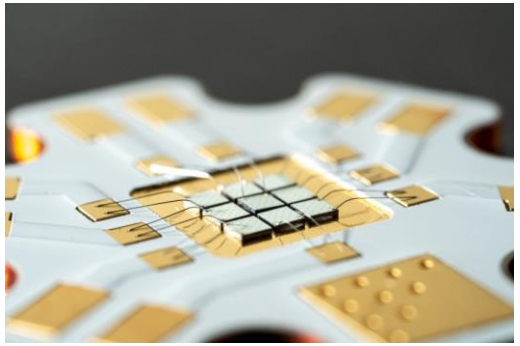
- LED & PD chips, THT, SMDs, CoB, detectors
- Wavelengths range 255 nm – 2300 nm
- Through hole packages with plastic or TO-Metall can
- Low, mid, high power
- Light conversion, broadband LED
- Multi chip LED
- SiC, Si, AlGaAs detectors



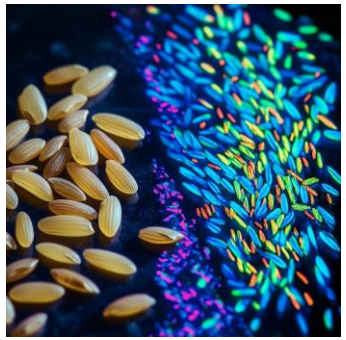






SWIR LEDs: Applications

Civilian Applications

Food Industry (Moisture detection)



Food Industry (Detection of foreign objects)

Industrial applications (Si wafer inspection, surface inspection)

Pharmaceutical (Compound identification)

Aviation and Defense

Airfield beacons

Helmet beacons

Imaging in low visibility conditions (fog, smoke)

Light sources for IR imaging

Product Guide: SWIR LED die

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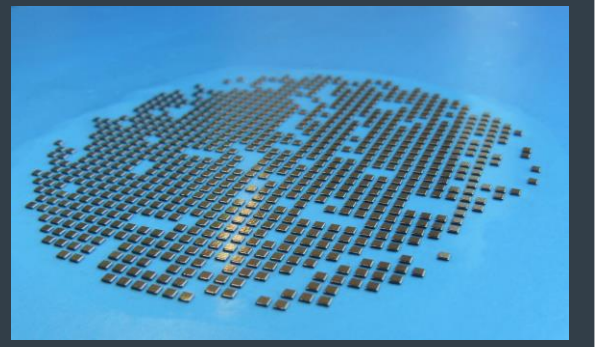
Small die

350 – 365 µm

Material	λc (nm)	Size	PN	Test Current	Voltage (V)	Output Power	Datasheet:	Polarity
GaAs	1020	365 µm	**EOLC-1020-17**	20 mA	1.25	3 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1020-17.pdf	P-up
GaAs	1040	350 µm	**EOLC-1040-27**	20 mA	1.25	5 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1040-27.pdf	N-up
GaAs	1050	365 µm	**EOLC-1050-17-1**	50 mA	1.2	4.5 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1050-17-1.pdf	P-up
GaAs	1060	365 µm	**EOLC-1060-17-1**	50 mA	1.2	4 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1060-17-1.pdf	P-up
InGaAs	1070	350 µm	**EOLC-1070-25**	50 mA	1.28	27 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1070-25.pdf	N-up
InGaAs	1140	365 µm	**EOLC-1140-17**	50 mA	1.1	3.5 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1140-17.pdf	P-up
InGaAs	1200	350 µm	**EOLC-1200-27**	50 mA	1.10	9.5 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1200-27.pdf	N-Up
InGaAs	1300	350 µm	**EOLC-1300-27**	50 mA	1.00	14 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1300-27.pdf	N-Up
InGaAs	1450	350 µm	**EOLC-1460-27**	20 mA	0.91	3.8 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1460-27.pdf	N-Up
InGaAs	1550	350 µm	**EOLC-1550-27**	50 mA	0.96	5 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1550-27.pdf	N-Up
InGaAs	1650	350 µm	**EOLC-1650-27**	20 mA	0.85	1.9 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1650-27.pdf	N-Up
InGaAs	1720	350 µm	**EOLC-1720-27**	20 mA	0.80	1.8 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1720-27.pdf	N-Up

Large die



960 – 1080 µm

Material	λc (nm)	Size	PN	Test Current	Voltage (V)	Output Power	Datasheet:	Polarity
GaAs	1020	960 µm	**EOLC-1020-11**	50 mA	1.1	5 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1020-11.pdf	P-up
GaAs	1050	960 µm	**EOLC-1050-11**	50 mA	1.1	4 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1050-11.pdf	P-up
GaAs	1060	960 µm	**EOLC-1060-11**	50 mA	1.1	3.5 mW	Coming soon…	P-up
InGaAs	1140	960 µm	**EOLC-1140-11**	50 mA	1.2	2.7 mW	https://www.epigap-osa.de/wp-content/uploads/2022/08/EOLC-1140-11.pdf	P-up
InGaAs	1200	1080 µm	**EOLC-1200-21**	1000 mA	1.33	110 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1200-21.pdf	N-Up
InGaAs	1300	1080 µm	**EOLC-1300-21**	1000 mA	1.28	85 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1300-21.pdf	N-Up
InGaAs	1450	1080 µm	**EOLC-1450-21**	1000 mA	1.00	50 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1450-21.pdf	N-Up
InGaAs	1550	1080 µm	**EOLC-1550-21**	1000 mA	1.00	50 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1550-21.pdf	N-Up
InGaAs	1650	1080 µm	**EOLC-1650-21**	1000 mA	1.00	50 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1650-21.pdf	N-up
InGaAs	1720	1080 µm	**EOLC-1720-21**	20 mA	0.67	3 mW	http://epigap.osa.lighting/wp-content/uploads/2022/04/EOLC-1720-21.pdf	N-Up

Product Guide: SWIR LEDs

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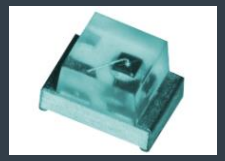
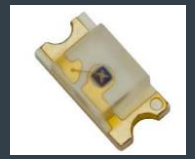
1.9(L) x 1.2(W) x 1.2(H) mm



Compact LED

Series	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
170	1030	38	OIS-170 1020p	120	50 mA	2 mW	https://www.epigap-osa.com/datasheet/OIS-170_1020p.pdf
170	1050	60	OIS-170 1050p	120	50 mA	2 mW	https://www.epigap-osa.com/datasheet/OIS-170_1050p.pdf

3.2(L) x1.6(W) x 1.2(H) mm



Standard LED

Series	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
150	1020	40	OIS-150_1020	120	50 mA	2 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1020.pdf
150	1040	45	OLS-150_IT1040	120	50 mA	7.1 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_IT1040.pdf
150	1050	45	OIS-150_1050	120	50 mA	2 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1050.pdf
150	1060	45	OIS-150_IT1060	120	50 mA	7.1 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_IT1060.pdf
150	1200	70	OIS-150_1200n	120	50 mA	1.5 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1200n.pdf
150	1300	75	OIS-150_1300n	120	50 mA	2.5 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1300n.pdf
150	1450	150	OIS-150_1450n	120	50 mA	0.6 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1450n.pdf
150	1550	110	OIS-150_1550n	120	50 mA	0.45 mW/sr	https://www.epigap-osa.com/datasheet/OIS-150_1550n.pdf

3.2(L) x1.6(W) x 1.9(H) mm

LED with lens

Series	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
330	1020	40	OIS-330 1020p	40	50 mA	9.5 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1020p.pdf
330	1040	45	OIS-330 IT1040	40	50 mA	45 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_IT1040.pdf
330	1050	45	OIS-330 1050p	40	50 mA	7.2 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1050p.pdf
330	1060	45	OIS-330 IT1060	40	50 mA	45 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_IT1060.pdf
330	1200	70	OIS-330 1200n	40	50 mA	15 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1200n.pdf
330	1300	75	OIS-330 1300n	40	50 mA	14.5 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1300n.pdf
330	1450	150	OIS-330 1450n	40	50 mA	6.5 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1450n.pdf
330	1550	110	OIS-330 1550n	40	50 mA	2.24 mW/sr	https://www.epigap-osa.com/datasheet/OIS-330_1550n.pdf

Product Guide: SWIR LEDs

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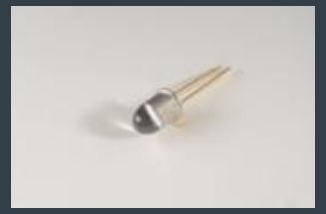
5mm THT LEDs

Case	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
5mm	1020	50	**EOLD-1020-525**	20	100 mA	20 mW	https://www.epigap-osa.com/datasheet/EOLD-1020-525.pdf
5mm	1050	50	**EOLD-1050-525**	20	100 mA	25 mW	https://www.epigap-osa.com/datasheet/EOLD-1050-525.pdf
5mm	1060	40	**EOLD-1060-525**	20	100 mA	25 mW	https://www.epigap-osa.com/datasheet/EOLD-1060-525.pdf
5mm	1070	38	**EOLD-1070-535**	35	100 mA	45 mW	https://www.epigap-osa.com/datasheet/EOLD-1070-535.pdf
5mm	1200	120	**EOLD-1200-525**	20	100 mA	5 mW	https://www.epigap-osa.com/datasheet/EOLD-1200-525.pdf
5mm	1300	95	**EOLD-1300-525**	25	100 mA	8.5 mW	https://www.epigap-osa.com/datasheet/EOLD-1300-525.pdf
5mm	1550	120	**EOLD-1550-525**	15	100 mA	3.3 mW	https://www.epigap-osa.com/datasheet/EOLD-1550-525.pdf
5mm	1650	100	**EOLD-1650-525**	45	100 mA	5.3 mW	https://www.epigap-osa.com/datasheet/EOLD-1650-525.pdf

TO-46

Case	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
TO-46	1050	100	**EOLD-1050-095**	40	100 mA	19 mW	https://www.epigap-osa.com/datasheet/EOLD-1050-095.pdf
TO-46	1200	70	**EOLD-1200-095**	50	100 mA	6 mW	https://www.epigap-osa.com/datasheet/EOLD-1200-095.pdf
TO-46	1300	85	**EOLD-1300-095**	50	100 mA	6 mW	https://www.epigap-osa.com/datasheet/EOLD-1300-095.pdf
TO-46	1720	130	**EOLD-1720-095**	50	20 mA	1 mW	https://www.epigap-osa.com/datasheet/EOLD-1720-095.pdf

TO-46 with lens



Case	Lens	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
TO-46	with lens	1050	100	**EOLD-1050-015**	6	100 mA	8 mW	https://www.epigap-osa.com/datasheet/EOLD-1050-015.pdf
TO-46	with lens	1060	80	**EOLD-1060-015**	6	100 mA	8 mW	https://www.epigap-osa.com/datasheet/EOLD-1060-015.pdf
TO-46	with lens	1200	70	**EOLD-1200-015**	6	100 mA	7 mW	https://www.epigap-osa.com/datasheet/EOLD-1200-015.pdf
TO-46	with lens	1300	85	**EOLD-1300-015**	6	100 mA	8 mW	https://www.epigap-osa.com/datasheet/EOLD-1300-015.pdf
TO-46	with lens	1450	150	**EOLD-1450-015**	6	20 mA	1.5 mW	https://www.epigap-osa.com/datasheet/EOLD-1450-015.pdf
TO-46	with lens	1650	100	**EOLD-1650-015**	6	100 mA	4 mW	https://www.epigap-osa.com/datasheet/EOLD-1650-015.pdf
TO-46	with lens	1720	130	**EOLD-1720-015**	6	100 mA	4 mW	https://www.epigap-osa.com/datasheet/EOLD-1720-015.pdf

Product Guide: SWIR LEDs

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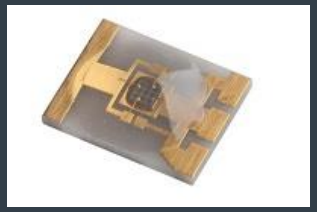
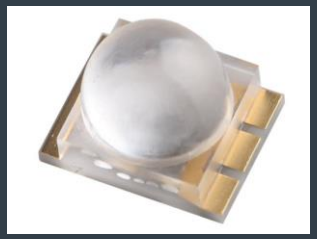
High power LED
With glob top



6.0(L) x 4.7(W) x 1.1(H) mm

Series	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
480	1020	50	OCI-480_1020p	120	350 mA	16 mW/sr	https://www.epigap-osa.com/datasheet/OCI-480_1020p.pdf
480	1040	50	OCI-480_ID1040	120	1000 mA	170 mW/sr	https://www.epigap-osa.com/datasheet/OCI-480_ID1040.pdf
480	1050	48	OCI-480_1050p	120	350 mA	18 mW/sr	https://www.epigap-osa.com/datasheet/OCI-480_1050p.pdf
480	1140	65	OCI-480_1140p	120	350 mA	13.5 mW/sr	https://www.epigap-osa.com/datasheet/OCI-480_1140p.pdf

High power LED with lens
Narrow view angle 20°



Epoxy lens (<1650 nm)

Glass lens (>1720 nm)

6.0(L) x 4.6(W) x 4.3(H) mm

Series	λc (nm)	FWHM (nm)	PN	View angle	Test Current	Output Power	Datasheet:
490	1020	20	OCI-490-20_1020p	20	350 mA	115 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_1020p-XE.pdf
490	1040	50	OCI-490-20_ID1040	20	1000 mA	1800 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1040-XE.pdf
490	1050	50	OCI-490-20_1050p	20	350 mA	110 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_1050p-XE.pdf
490	1060	50	OCI-490-20_ID1060	20	700 mA	1350 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1060-XE.pdf
490	1100	55	OCI-490-20_ID1100	20	1000 mA	1700 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1100-XE.pdf
490	1140	60	OCI-490-20_ID1140	20	1000 mA	1100 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1140-XE.pdf
490	1200	70	OCI-490-20_ID1200	20	1000 mA	430 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1200-XE.pdf
490	1300	85	OCI-490-20_ID1300	20	1000 mA	319 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1300-XE.pdf
490	1450	140	OCI-490-20_ID1450	20	1000 mA	211 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1450-XE.pdf
490	1550	110	OCI-490-20_ID1550	20	1000 mA	160 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1550-XE.pdf
490	1650	150	OCI-490-20_ID1650	20	1000 mA	120 mW/sr	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1650-XE.pdf
490	1720	130	OCI-490-20 ID1720	20	1000 mA	40 mW	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1720-XG.pdf
490	1900	130	OCI-490-20 ID1900	20	1000 mA	41 mW	https://www.epigap-osa.com/datasheet/OCI-490-20_ID1900-XG.pdf
490	2100	130	OCI-490-20 ID2100	20	1000 mA	9.5 mW	https://www.epigap-osa.com/datasheet/OCI-490-20_ID2100-XG.pdf
490	2200	150	OCI-490-20 ID2200	20	1000 mA	8.7 mW	https://www.epigap-osa.com/datasheet/OCI-490-20_ID2200-XG.pdf
490	2300		OCI-490-20 ID2300	20	1000 mA	3.2 mW	https://www.epigap-osa.com/datasheet/OCI-490-20_ID2300-XG.pdf

Summary

EPIGAP OSA has a broad portfolio of IR and SWIR LEDs

Unique capability of EPIGAP-OSA:

- Flexibility on SMD forms and lenses
- Rapid prototyping
- Exact binning and pre-selection *(Output power, Wavelength, View Angle)*
- Long-Term Stability of performance and supply availability
- Multi-Chip COB assemblies

EPIGAP-OSA is constantly developing new products on its own and in cooperation with academic and industrial partners.

NEW in 2024: extension of the portfolio to 2300 nm

VIELEN DANK FÜR DIE AUFMERKSAMKEIT!

THANK YOU FOR YOUR KIND ATTENTION!

Bitte kontaktieren Sie uns jederzeit für weitere Informationen

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