UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report
(Date of earliest event reported): January 30, 2024

Aeluma, Inc.
(Exact name of registrant as specified in its charter)

Delaware	000-56218	85-2807351
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

27 Castilian Drive Goleta, California	93117
(Address of principal executive offices)	(Zip Code)

805-351-2707
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act: none.

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 8.01 Other Events.

We are filing this report to disclose a Company PowerPoint presentation, a Company flier, and three product offering brochures. The presentation, flier, and brochures are all furnished as exhibits to this Current Report on Form 8-K.

Neither this report nor the exhibits attached hereto constitute an offer to sell, or the solicitation of an offer to buy our securities, nor shall there be any sale of our securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or jurisdiction.

Item 9.01 Financial Statements and Exhibits.

(d) *Exhibits.*

Exhibit Number	Exhibit
99.1	PowerPoint Presentation
99.2	Company Flier
99.3	Product Offering Brochure #1
99.4	Product Offering Brochure #2
99.5	Product Offering Brochure #3
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

AELUMA, INC.

Date: January 30, 2024

By: /s/ Jonathan Klamkin
Jonathan Klamkin
President, Chief Executive Officer and Director

Aeluma™

Sensing Reimagined™

Large-Wafer Heterogeneously Integrated InGaAs Photodetector Sensors

Matthew Dummer, Jonathan Klamkin, Bei Shi, Bowen Song, Simone S. Brunelli, Michael McGivney, Douglas Oakley, Daniel Renner

Paper 12880-18
January 30, 2024

SPIE. PHOTONICS WEST

Outline

Aeluma™

- Introduction to Aeluma
- Background on InGaAs detectors and scaling limitations
- Aeluma's scalable large-diameter wafer platform
- Detector array performance results
- Comparison to other detector technologies
- Summary of product and technology offerings
- Conclusions

Aeluma, Inc. (OTCQB: ALMU)

A transformative semiconductor chip company

High Performance Semiconductors that Scale

Headquarters: Goleta/Santa Barbara, California

Markets: Automotive LiDAR, Mobile, AR/VR, Communication, Defense & Aerospace, AI

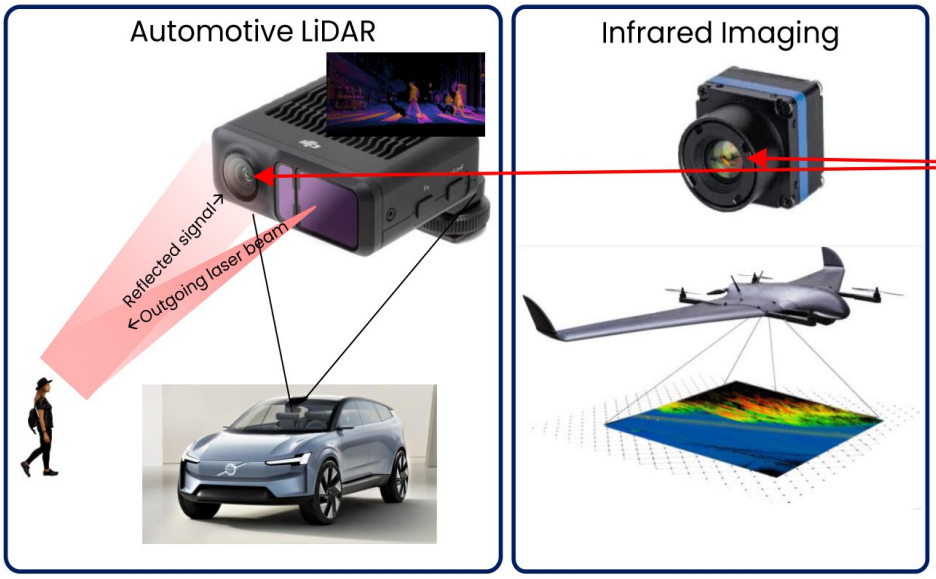
Team: ~15 people

Expertise: Compound semiconductors, heteroepitaxy, photonic integrated circuits, silicon photonics, lasers, detectors, volume manufacturing

Intellectual Property: ~25 issued and pending patents, trade secrets

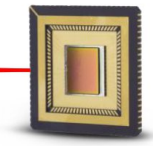
Background on InGaAs Detectors

High Performance Detectors for Active and Passive Imaging



Behind the "Eye"

Representative commercial InGaAs FPA for LiDAR and imaging applications



Issues preventing broad market adoption

- **Scale**: Incubmbent InGaAs is specialized
- **Cost**: Price for detector array is too high

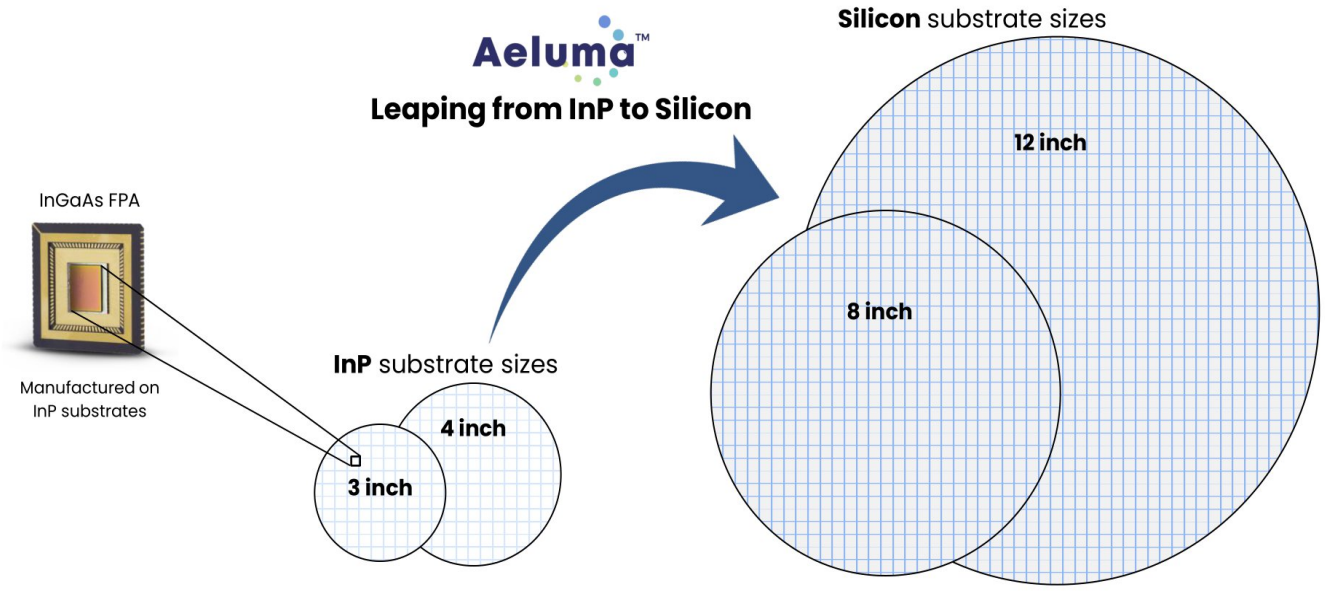
Aeluma's technology seeks to address these challenges with scalable, cost-effective manufacturing.

Performance that scales

InGaAs: Indium Gallium Arsenide; LiDAR: Light detection and ranging; FPA: Focal plane array. Note: Outcomes cannot be guaranteed.
Sources of images: https://www.flir.com/support/products/swir-ingaas-fpa/; https://www.bhphotovideo.com; https://www.wardsauto.com/vehicles/lidar-house-battery-production-volvo-s-sights; https://ouster.com/blog/mhttps://www.foresightauto.com/thermal-cameras-solve-autonomous-trucks-dust-problem/ake-intersections-safer-trb/; https://www.deltaquad.com/vtol-drones/inspect/; www.digikey.com

The Aeluma Approach to Photonics Manufacturing

High Performance Technology with Large-Diameter Wafer Manufacturing

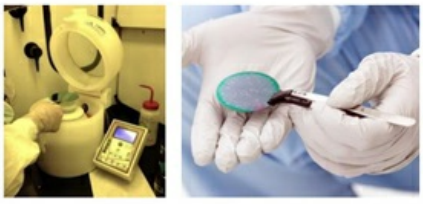


InP: Indium Phosphide;
Source of image: https://www.flir.com/support/products/swir-ingaas-fpa/; Note: Outcomes cannot be guaranteed.

Aeluma's Technology Breakthrough

Scalable, Cost-Effective Manufacturing Enabled by Cutting-Edge Intellectual Property

Conventional manufacturing of InGaAs photodetector arrays

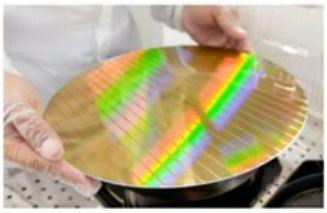


Non-scalable, manual and low throughput

16X wafer area

Moving from 3-inch to 12-inch wafers

Aeluma high-performance InGaAs photodetector arrays with Silicon manufacturing



- ✔ Highly automated and ability to produce many arrays per wafer
- ✔ 10X lower manufacturing cost for mass market applications

Note: Outcomes cannot be guaranteed.

Aeluma's Cost-Effective Scalable Manufacturing

Large-Diameter Wafer Capability

- Commercial 12-inch state-of-the-art deposition tool
- Set up for cassette (FOUP) loading production
- One of only a few such tools worldwide
- Extensive patent protection and trade secrets

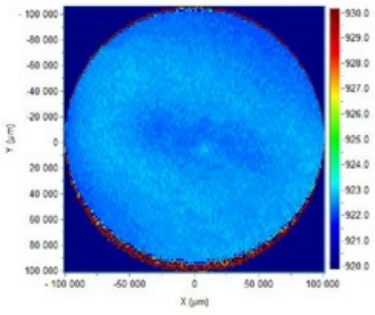
Aeluma's Cost-Effective Scalable Manufacturing

Large-Diameter Wafer Capability

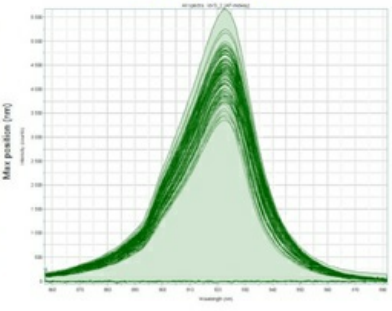
InP-on-Silicon Wafer

Photoluminescence Mapping Measurements

8-inch Wafer Map



Overlaid Scans



Excellent Uniformity Across Wafer

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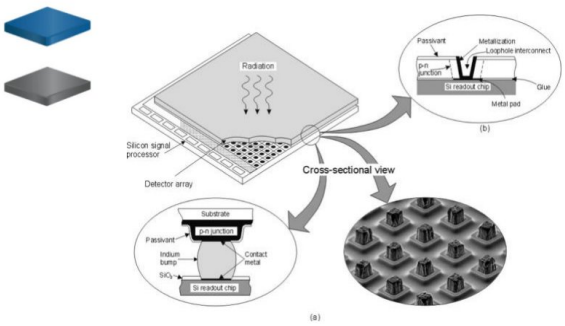
Wafer-Scale Integration and 3D Packaging

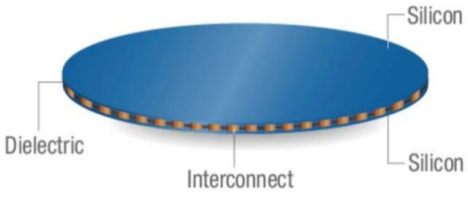
Silicon Manufacturing Environment Enables Wafer-Scale Packaging

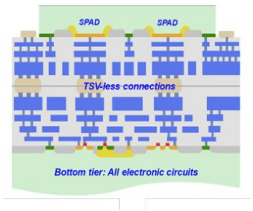
Conventional chip-to-chip hybridization



- Expensive packaging with low throughput
- Limited performance indium bumps
- Pixel sizes limited to ~5 µm (>10 µm typical)

Wafer-to-wafer 3D Integration





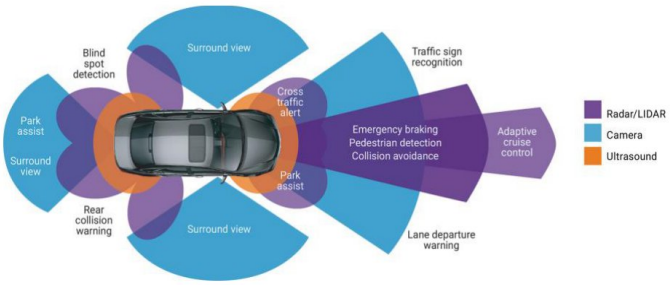
- ✓ **Low cost and high throughput**
- ✓ **Higher performance with low capacitance copper interconnect**
- ✓ **Small pixels (<1 µm possible)**
- ✓ **3D stacking of multiple CMOS layers**

Sources of images: A. Rogalski, Optical Engineering, 42(12), 2003; https://www.allaboutcircuits.com/news/moores-law-xperi-new-die-to-wafer-bonding-technology-ic-package/; E. Charbon, et al., ICECS, 2018; CMOS: complementary metal-oxide semiconductor

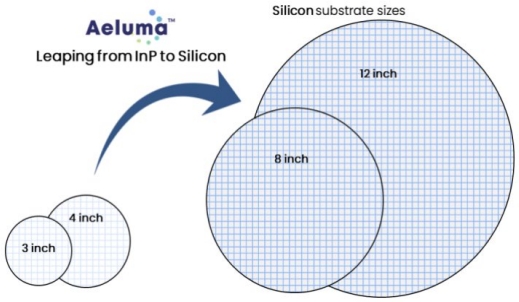
Manufacturing for a Mass Market

Aeluma's Large-Diameter Manufacturing Economies of Scale

Automotive Sensors: Camera, Radar, and LiDAR



- **Market: 113 million automotive vehicles in 2024[1]**
- **Each vehicle may have 1-5 LiDAR sensors**
- **Note: Some LiDARs require more than 1 FPA**



Example case: Manufacturing 5,000,000 FPA units

Number of wafers required
3-inch: 106,383 wafers
4-inch: 53,192

3-inch: 47 chips per wafer
4-inch: 94 chips per wafer

Number of wafers required
8-inch: 10,706 wafers
12-inch: 4,425

8-inch: 467 chips per wafer
12-inch: 1,130 chips per wafer

Aeluma's manufacturing approach can enable the scaling and cost reduction required for mass-market applications.

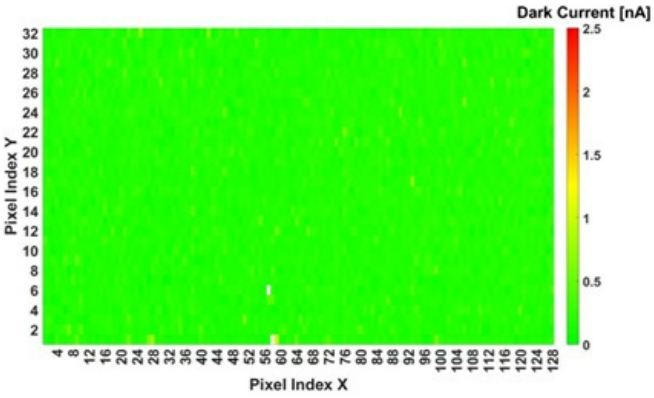
Note: Outcomes cannot be guaranteed. Values are provided for qualitative illustration purposes only. [1]www.idc.com.
Source of car/sensors figure: https://www.eetimes.com/why-sensor-technology-is-the-key-to-autonomous-vehicles/

Photodetector Array Performance

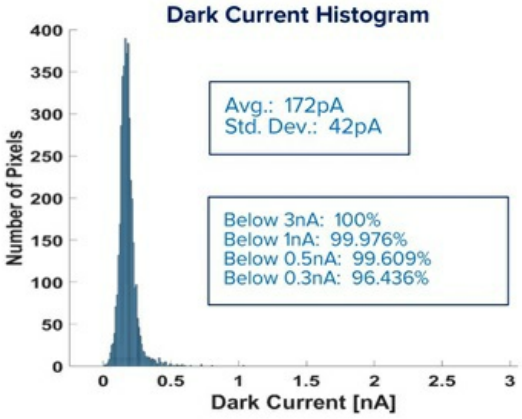
Exemplary 128 X 32 InGaAs Array on 8-inch Platform

Aeluma™

Dark Current Heat Map



Dark Current Histogram



- PDA pixel pitch = 90µm; active pixel area = 85µm x 85µm
- Developed for a 1064nm LiDAR system
- Quantum efficiency = ~93%
- Measurements performed at -5V

Very low dark current demonstrated along with high array yield

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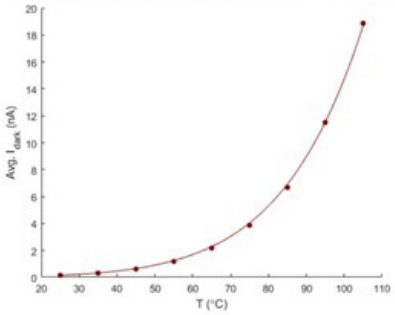
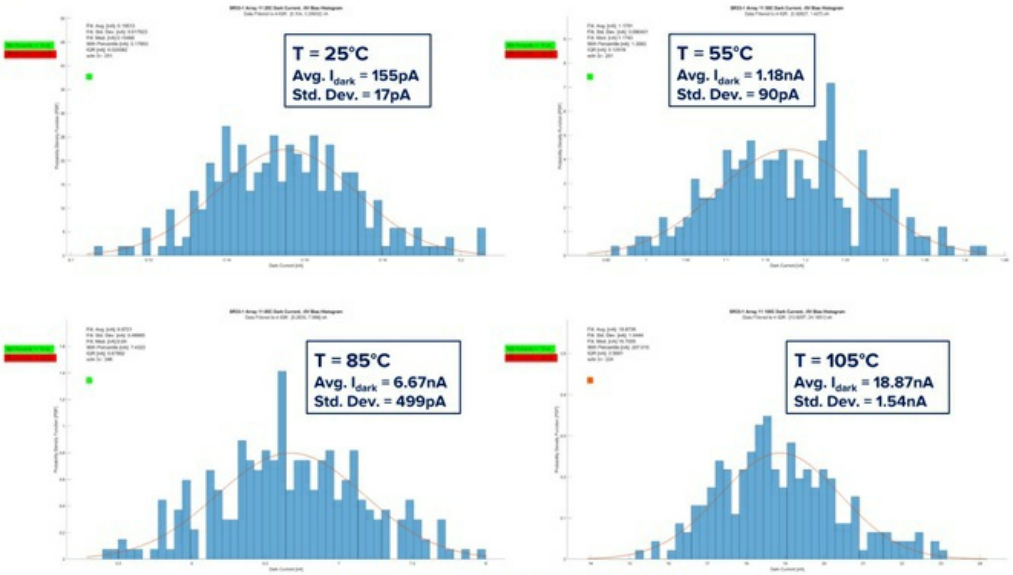
Dark Current Temperature Dependence

Aeluma™

Temperature-Dependent Dark Current



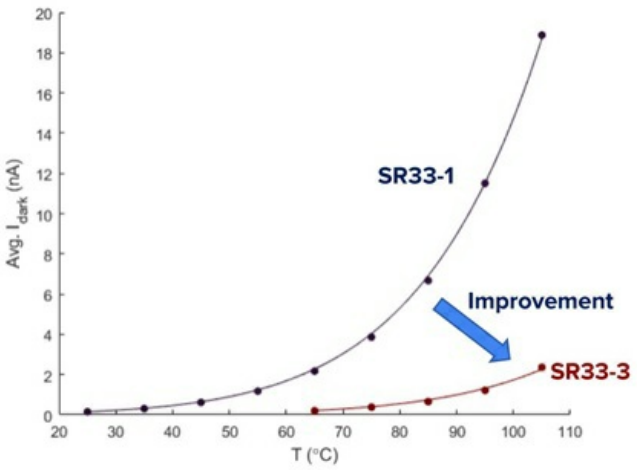
Temperature-Dependent Dark Current Histograms

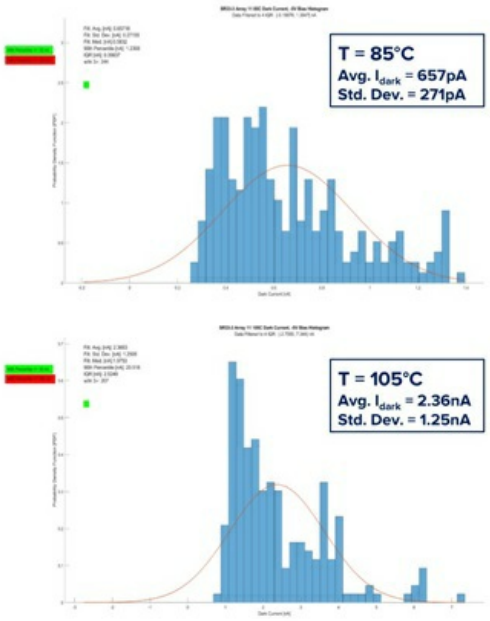


All measurements performed at -5V bias

Dark Current Temperature Dependence

Further Improvements and Optimization



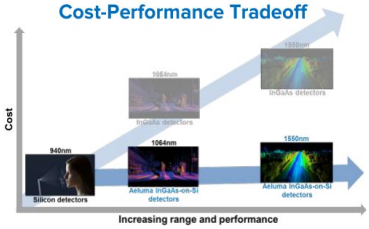


Low dark current demonstrated up to 105°C suitable for automotive and other applications

All measurements performed at -5V bias

Aeluma Outperforms the Competition

Technology Comparison



	Incumbent technologies		Technologies under consideration for scaling and cost reduction		
	12 inch Silicon	3 inch InP	12 inch Silicon	12 inch Silicon	12 inch Silicon Aeluma™
Technology:	Silicon SPAD	InGaAs-on-InP	Ge-on-Si	Thin film	**InGaAs-on-Si**
Status:	Incumbent for short-range	Incumbent for long-range	Considered for long-range	Considered for long-range	Considered for long-range
Performance:	Good	Best	Low	Low	**Best**
Multiplication (ex. APD, SPAD):	Yes	Yes	Maybe	No	**Yes**
Wafer-scale integration:	Yes	No	Yes	Yes	**Yes**

Aeluma combines proven, high performance InGaAs with scalable manufacturing on large-diameter substrates to overcome the cost-performance tradeoff.

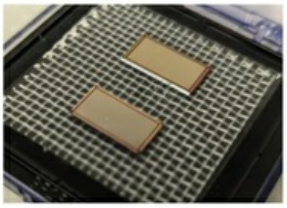
Note: Outcomes cannot be guaranteed. Metrics not based on actual data and are provided for qualitative illustration purposes only. Typical InP substrate sizes are 3- or 4-inch. Typical Si substrate sizes are 8- or 12-inch. APD: Avalanche photodiode. SPAD: Single-photon avalanche diode.

Summary of Product/Technology Offerings

Detector Arrays

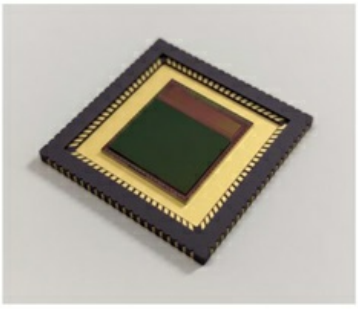
Custom Detector Arrays

- Low dark current photodetector arrays manufactured with large-diameter substrate platform
- Pixel and array size customizable
- Typical array sizes: 128 X 32, 256 X 128, 640 X 512
- Delivered as PDA chips or with ROICs
- FPA assembly available
- Small test arrays (ex. 8 X 8) available for eval./qual.



Examples shown are 256 X 128 arrays

Focal Plane Array Assembly



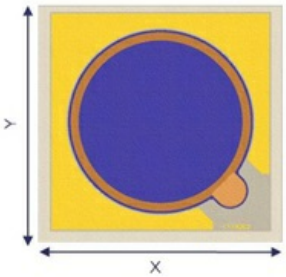
Applicable markets include automotive, mobile, AR/VR, defense & aerospace, industrial and logistics, and security

Summary of Product/Technology Offerings

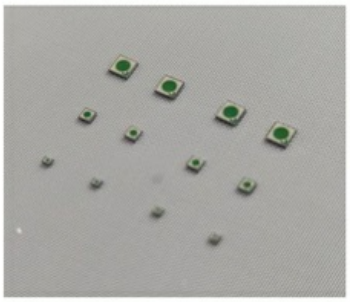
Large-Area InGaAs Detectors

High sensitivity, low dark current and high speed detectors for SWIR and XSWIR

- Typical Photosensitive Diameter (D): 0.25 to 5.0mm
- Typical Operating Wavelength (λ): 0.95 to 1.55μm)
- Device: PIN, APD or SPAD
- Format: Bare die or mounted in TO package



Bare Die

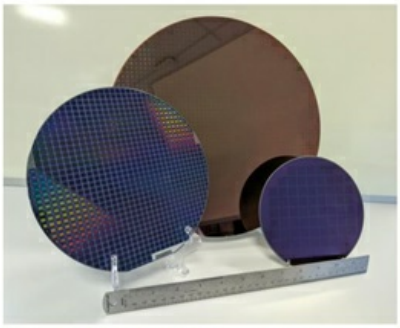


TO Package

Applicable markets include automotive, mobile, AR/VR, defense & aerospace, industrial and logistics, gas sensing, instrumentation, and security

Summary of Product/Technology Offerings

Heterogeneous Integration Platform

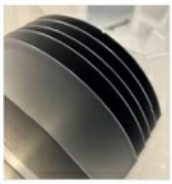


Aeluma's proprietary heterogeneous integration platform integrates high-performance compound semiconductors (ex. GaAs, InP, GaSb) on large-diameter substrates including up to 12-inch Silicon.

This technology has the potential to scale, reduce cost, and increase yield, all of which are critical for emerging and mass-market applications.

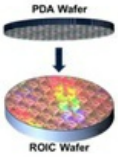
Summary of Offerings

High Quality Templates



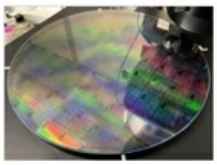
High-quality GaAs, InP, and GaSb templates grown on up to 12-inch Silicon substrates for scaling high-performance technologies to larger wafer sizes.

Large-Scale Detectors for Wafer-Scale Integration



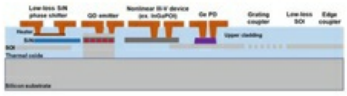
Manufacturing detectors on the same substrate size as read-out ICs enables wafer-scale integration to improve performance, increase functionality, and reduce cost.

Monolithic Integration by Selective Growth



Selective growth enables CMOS process integration and may be applied to Silicon Photonics, III-V electronics integrated with Silicon CMOS, integration of InGaAs detectors with CMOS read-out ICs, and more.

Lasers for Silicon Photonics



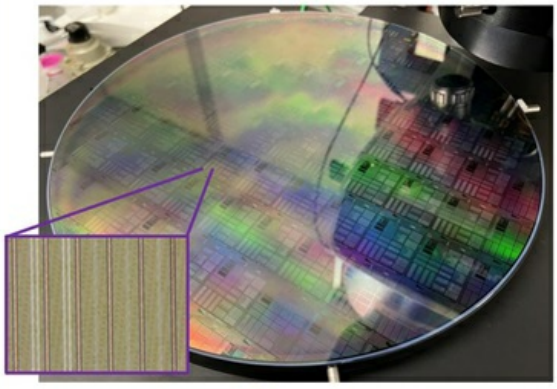
Integration of quantum dot lasers and other group III-V active devices in Silicon Photonics

Applicable markets include automotive, mobile, AR/VR, defense & aerospace, quantum computing, AI, and communication

Silicon Photonics and Laser Integration

Aeluma's Technology Can Enable Process Integration

12-inch Silicon Photonics Wafer with Aeluma Materials



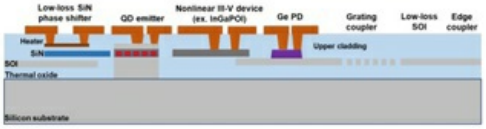
Aeluma, Inc. Enters into Agreement with RFSUNY to Support AIM Photonics

Silicon Photonics Applications

High-Performance Computing and Data Centers

AI and Photonic Computing

Lasers for Silicon Photonics



Integration of quantum dot lasers and other group III-V active devices in Silicon Photonics

Outcomes cannot be guaranteed.
Sources of images: https://venturebeat.com; https://spie.org/news/photonics-focus

Aiming to Service a Broad Market

High-Performance Semiconductors for Sensing and Communications

Aeluma™

Automotive LiDAR

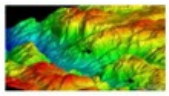


- Consumer vehicles
- Robotaxis
- Trucking

Industrial and Logistics


- Robotics
- Delivery robots
- Factory automation
- Logistics
- Security

Defense & Aerospace

- Imaging and LiDAR
- Security
- Autonomous systems
- Atmospheric sensing
- Topography

Mobile and AR/VR



- Mobile phone, tablet
- Face ID
- LiDAR scanner
- Proximity sensors
- AR/VR glasses

Communications, Quantum and AI


- Telecommunications
- Data centers
- Quantum computing
- 5G/6G
- AI communications

Conclusions

Aeluma™

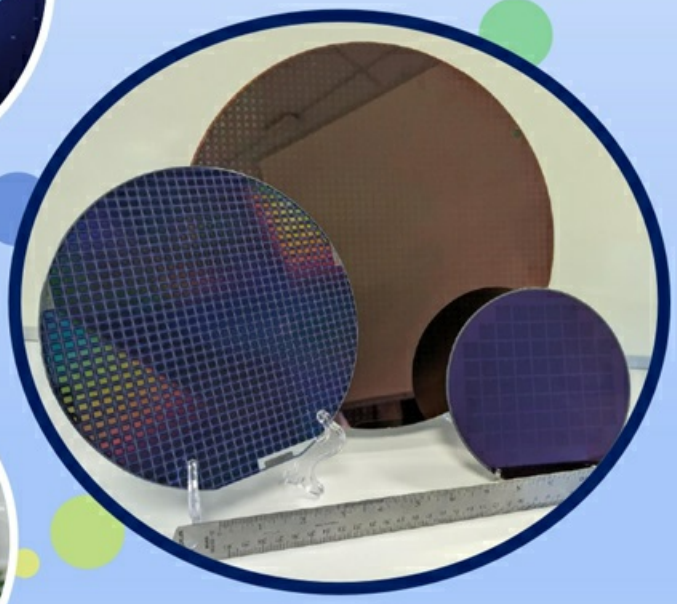
- **Large-diameter wafer platform capable of scaling InGaAs detector arrays and other technologies for consumer markets including automotive and mobile**
- **Demonstrated very low dark current detector arrays on 8-inch wafer platform with excellent pixel yield, wafer uniformity, and high-temperature performance**
- **Developed selective growth processes for monolithic integration on Silicon CMOS**
- **Technologies available include detector arrays, large-area detectors, and heterogenous integration platform**

Visit Aeluma at Booth 5143

info@aeluma.com | www.aeluma.com

Aeluma™

High Performance
Semiconductors that Scale



www.aeluma.com

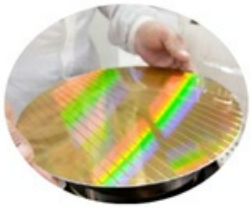
Aeluma™ Sensing Reimagined™

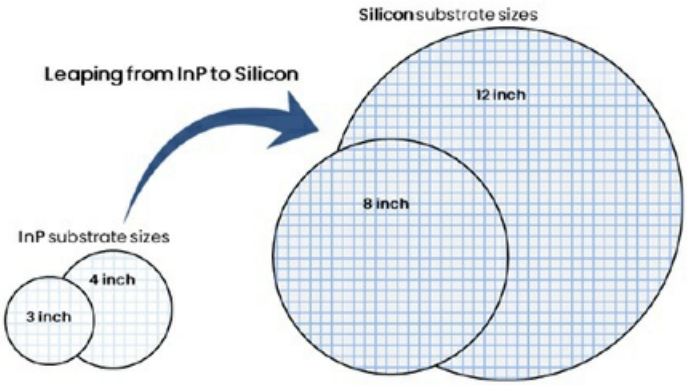
The Aeluma Semiconductor Manufacturing Approach

High-Performance Semiconductors with Large-Diameter Substrates

Aeluma's breakthrough technology produces high-performance semiconductor chips on large-diameter substrates with mass-market microelectronics manufacturing.

Conventional manufacturing uses 3-inch or 4-inch substrates. **Aeluma can manufacture on up to 12-inch substrates.**





Combining high-performance materials with scalable, cost-effective manufacturing enables mass markets.

Broad Range of Markets and Product Offerings

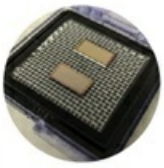
Automotive LiDAR

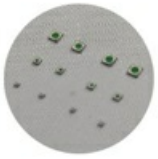
Industrial and Logistics

Defense & Aerospace

Mobile and AR/VR

Communications, Quantum and AI





Infrared Sensors

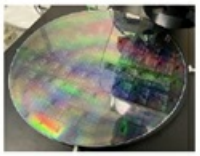
NIR, SWIR, XSWIR · PIN, APD, SPAD

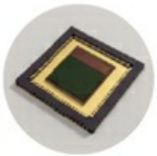
Large-area Detectors

Detector Arrays

Heterogenous Integration

Lasers for Silicon Photonics





Outcomes cannot be guaranteed.

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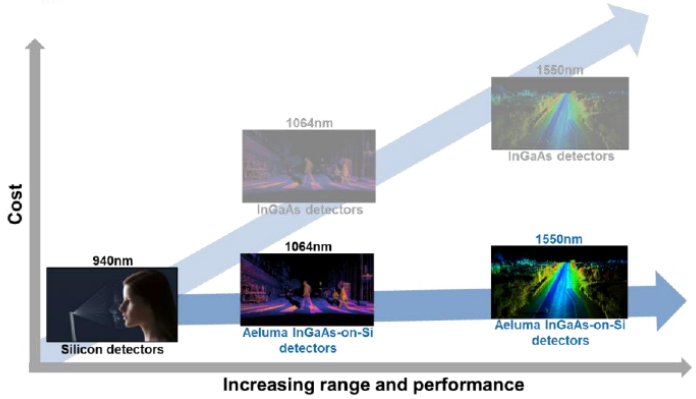
Automotive LiDAR for Driving Safety and Autonomy

Manufacturing for a Mass Market without Sacrificing Performance

Sensors: Camera, Radar and **LiDAR**

- LiDAR is necessary for driving safety and autonomy.
- Eye-safe LiDAR provides the range and resolution required for highway and other driving conditions.
- High cost and limited scale have inhibited broad market adoption. Aeluma's large-diameter wafer technology can **scale without sacrificing performance.**



Aeluma Competitive Advantage

	Incumbent technologies		Technologies under consideration for scaling and cost reduction		
	12 inch Silicon	3 inch InP	12 inch Silicon	12 inch Silicon	12 inch Silicon Aeluma™
Technology:	Silicon SPAD	InGaAs-on-InP	Ge-on-Si	Thin film	**InGaAs-on-Si**
Status:	Incumbent for **short-range**	Incumbent for **long-range**	Considered for **long-range**	Considered for **long-range**	Considered for **long-range**
Performance:	Good	Best	Low	Low	**Best**
Multiplication (ex. APD, SPAD):	Yes	Yes	Maybe	No	**Yes**
Wafer-scale integration:	Yes	No	Yes	Yes	**Yes**

Aeluma combines proven, high-performance InGaAs with scalable manufacturing on large-diameter substrates to overcome the cost-performance tradeoff.

Outcomes cannot be guaranteed. Source of car/sensor figure: https://www.eetimes.com/why-sensor-technology-is-the-key-to-autonomous-vehicles/
LiDAR: Light Detection and Ranging

Aeluma™

About Aeluma

Aeluma develops novel optoelectronics for sensing and communication applications. Aeluma has pioneered a technique to manufacture semiconductor chips using high-performance compound semiconductor materials on large-diameter substrates that are commonly used for mass-market microelectronics. The technology has the potential to enhance performance and scale manufacturing, both of which are critical for emerging applications. Aeluma is developing a streamlined business model from its headquarters in Santa Barbara, California that has a state-of-the-art manufacturing cleanroom. Its transformative semiconductor chip technology may impact a variety of markets including automotive LiDAR, mobile, defense & aerospace, AR/VR, AI, quantum, and communication.

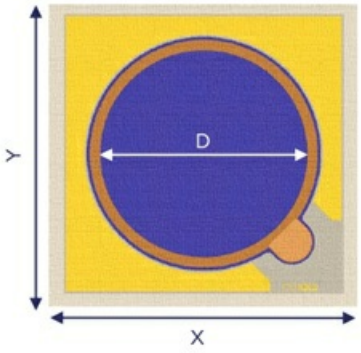
Aeluma differentiates itself with unique semiconductor manufacturing capability, proprietary technology, the ability to perform rapid prototyping, and a broad set of product offerings.

For more information: **info@aeluma.com**

www.aeluma.com

Aeluma™ Sensing Reimagined™

Large Area InGaAs Detectors



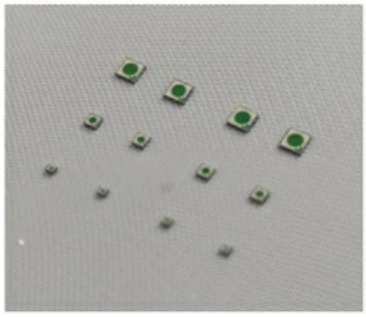
High sensitivity, low dark current and high speed detectors for SWIR and XSWIR

- Typical Photosensitive Diameter (D): 0.25 to 5.0mm
- Typical Operating Wavelength (λ): 0.95 to 1.55μm)
- Device: PIN, APD or SPAD
- Format: Bare die or mounted in TO package

Performance Specifications for λ = 1.064μm, D = 1.0mm InGaAs PIN

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Spectral Response Range	λ_R		0.95	1.064	1.15	μm
Peak Sensitivity Wavelength	λ_P		-	1.064	-	μm
Quantum Efficiency	η	$\lambda = \lambda_P$	0.6	0.75	0.9	-
Responsivity	R	$\lambda = \lambda_P$	0.52	0.64	0.77	A/W
Dark Current	I_D	V = -5V	-	0.2	-	nA
Terminal Capacitance	C_T	V = -5V f = 2MHz	-	125	-	pF

Bare Die



TO Package

Outcomes cannot be guaranteed.
Specifications for operating temperature of 25°C.

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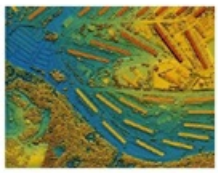
Applications and Markets

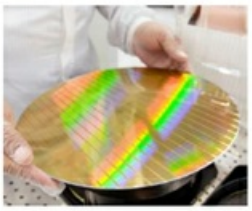


High-performance, large-area detectors for imaging, sensing and communication applications

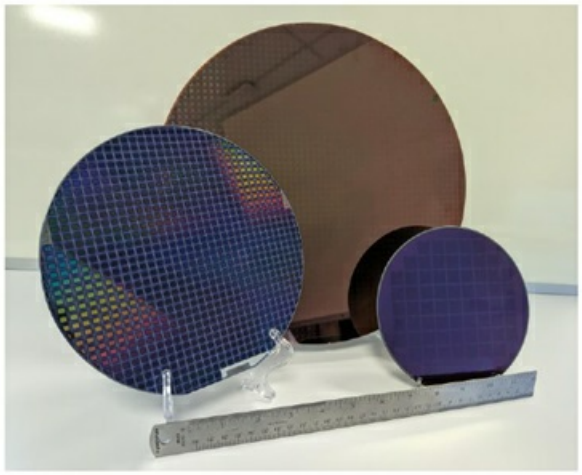
Applicable markets include automotive, mobile, AR/VR, defense & aerospace, industrial and logistics, gas sensing, instrumentation, and security

Advantages of Aeluma Large-Scale Manufacturing




- **Highly automated manufacturing to produce many chips per wafer at high yield**
- **Greater than 10-fold reduction in manufacturing cost for mass-market applications**
- **Wafer-scale integration for volume production, performance improvement, and lower cost**

Benefits of Large-Scale Integration



Manufacturing on large-diameter substrates

- **Low cost**
- **Larger area detectors**
- **High yield**
- **High reliability**
- **Scalability**
- **Large volumes**

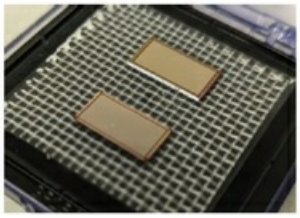
Aeluma's large-diameter wafer manufacturing platform is ideally suited for scaling high-performance, large-area detectors for mass markets

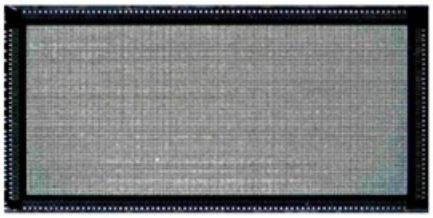
Outcomes cannot be guaranteed.

Aeluma™ Sensing Reimagined™

Shortwave Infrared Detector Arrays

Custom Detector Arrays





Examples shown are 256 X 128 arrays

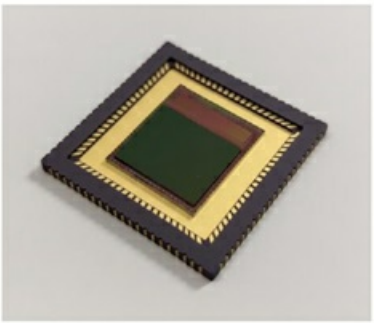
Custom Array Specifications

Specification	Value			Unit
	Min.	Typ.	Max.	
Pixel Pitch	5	10	-	µm
Rows	1	-	-	
Columns	1	-	-	
Peak Sensitivity Wavelength	0.95	-	1.55	µm
Detector Type	PIN • APD • SPAD			
Configuration	Common Anode • Common Cathode			

Performance, Formats and Features

- Low dark current photodetector arrays manufactured with large-diameter substrate platform
- Pixel and array size customizable
- Typical array sizes: 128 X 32, 256 X 128, 640 X 512
- Reliability performance exceeds generic Telcordia GR-468 optoelectronics standard
- Delivered as PDA chips or with ROICs
- FPA assembly available
- Small test arrays (ex. 8 X 8) available for eval./qual.

Focal Plane Array Assembly



Outcomes cannot be guaranteed.
PDA: Photodetector Array; ROIC: Read-out Integrated Circuit; FPA: Focal Plane Array

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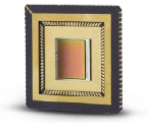
Applications and Markets

Focal Plane Arrays



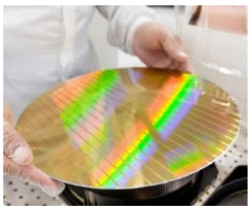
Passive Imaging

LiDAR Sensing

High-performance photodetector arrays used in focal plane array applications, passive imaging, and active LiDAR sensing

Applicable markets include automotive, mobile, AR/VR, defense & aerospace, industrial and logistics, and security

Advantages of Aeluma Large-Scale Manufacturing

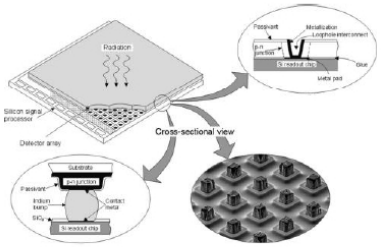


- **Highly automated manufacturing to produce many chips per wafer at high yield**
- **Greater than 10-fold reduction in manufacturing cost for mass-market applications**
- **Wafer-scale integration for volume production, performance improvement, and lower cost**

Benefits of Large-Scale Integration

Chip-to-chip integration

Die-to-Die

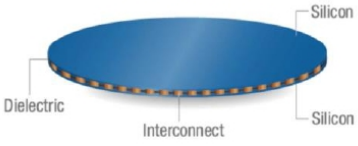


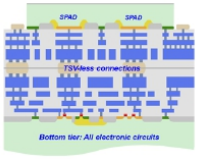
Traditional chip-to-chip / die-to-die hybridization is low throughput and high cost.

Indium bump technology poses challenges on integration and packaging, and limits the minimum pixel size and maximum array size.

Wafer-scale Integration

Wafer-to-Wafer





Wafer-scale integration, including die-to-wafer and wafer-to-wafer, enables high throughput and low cost.

Copper-based interconnects improve performance.

Smaller pixel size and larger format arrays are possible with CMOS interconnects and 3D stacking.

Sources of images: https://www.flir.com/support/products/swir-ingaas-fpa/; https://www.bhphotovideo.com; https://ouster.com/blog/mhttps://www.foresightauto.com/thermal-cameras-solve-autonomous-trucks-dust-problem/ake-intersections-safer-trb/; www.digikey.com; A. Rogalski, Optical Engineering, 42(12), 2003; https://www.allaboutcircuits.com/news/moores-law-xperi-new-die-to-wafer-bonding-technology-ic-package/; E. Charbon, et al., ICECS, 2018.
Outcomes cannot be guaranteed.

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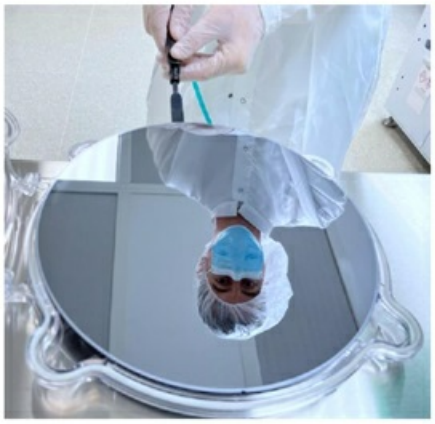
Heterogeneous Integration Platform

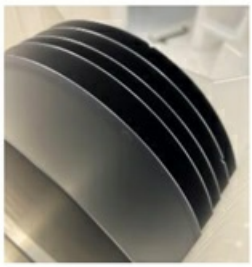


Aeluma's proprietary heterogeneous integration platform integrates high-performance compound semiconductors (ex. GaAs, InP, GaSb) on large-diameter substrates including up to 12-inch Silicon.

This technology has the potential to scale, reduce cost, and increase yield, all of which are critical for emerging and mass-market applications.

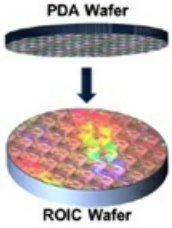
Summary of Offerings

High Quality Templates



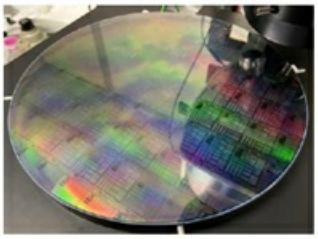
High-quality GaAs, InP, and GaSb templates grown on up to 12-inch Silicon substrates for scaling high-performance technologies to larger wafer sizes.

Large-Scale Detectors for Wafer-Scale Integration



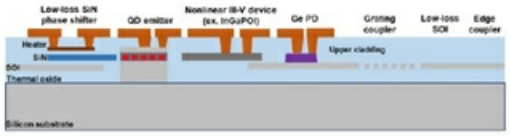
Manufacturing detectors on the same substrate size as read-out ICs enables wafer-scale integration to improve performance, increase functionality, and reduce cost.

Monolithic Integration by Selective Growth



Selective growth enables CMOS process integration and may be applied to Silicon Photonics, III-V electronics integrated with Silicon CMOS, integration of InGaAs detectors with CMOS read-out ICs, and more.

Lasers for Silicon Photonics



Integration of quantum dot lasers and other group III-V active devices in Silicon Photonics

Outcomes cannot be guaranteed.

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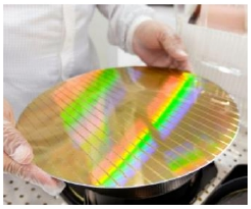
Applications and Markets




High-performance compound semiconductor devices integrated in large-scale platforms including Silicon CMOS

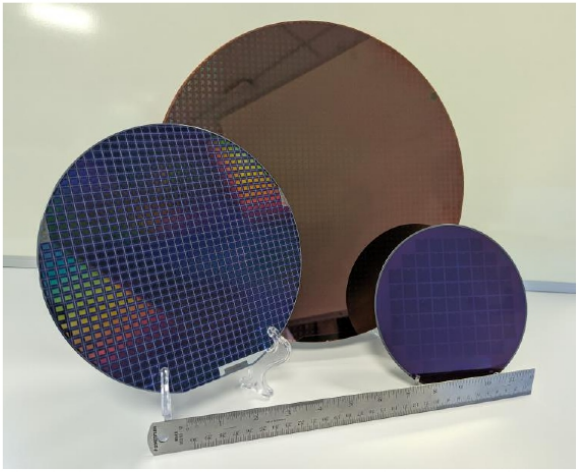
Applicable markets include automotive, mobile, AR/VR, defense & aerospace, quantum computing, AI, and communication

Advantages of Aeluma Large-Scale Manufacturing




- **Highly automated manufacturing to produce many chips per wafer at high yield**
- **Greater than 10-fold reduction in manufacturing cost for mass-market applications**
- **Wafer-scale integration for volume production, performance improvement, and lower cost**

Benefits of Large-Scale Integration



Manufacturing on large-diameter substrates

- **Low cost**
- **High yield**
- **High reliability**
- **Scalability**
- **Large volumes**

Aeluma's large-diameter wafer manufacturing platform is ideally suited for scaling high-performance compound semiconductor devices for mass markets

Outcomes cannot be guaranteed.