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): July 20, 2023

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 our new investor power point presentation. The presentation is furnished as Exhibit 99.1 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	Power Point Presentation
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURE

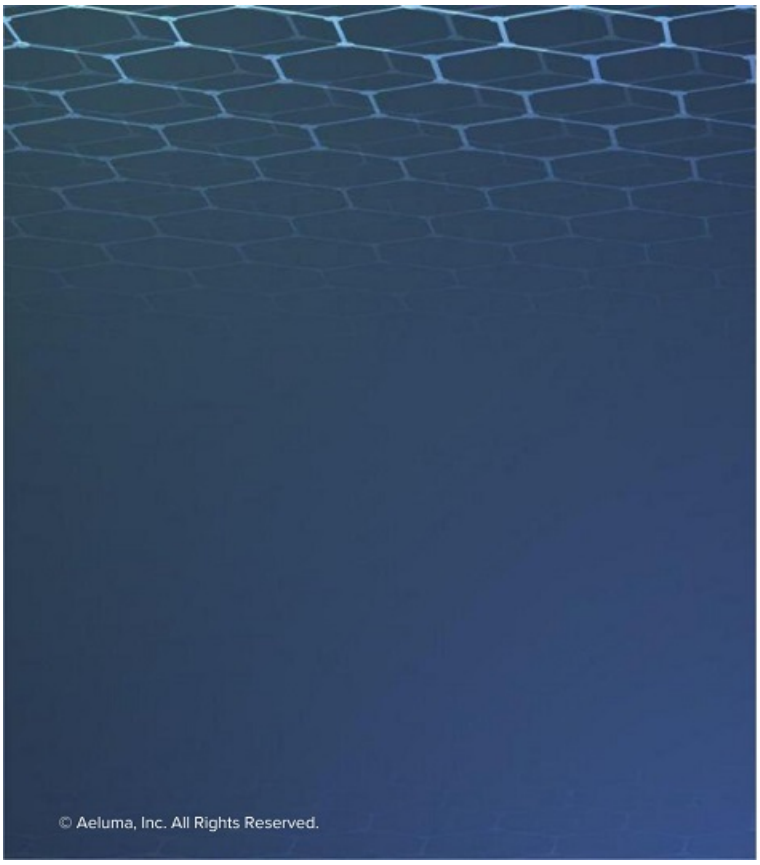
Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

AELUMA, INC.

Date: July 20, 2023

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

Exhibit 99.1



Aeluma™

Sensing Reimagined™

Investor Presentation

July 2023

Forward Looking Statements

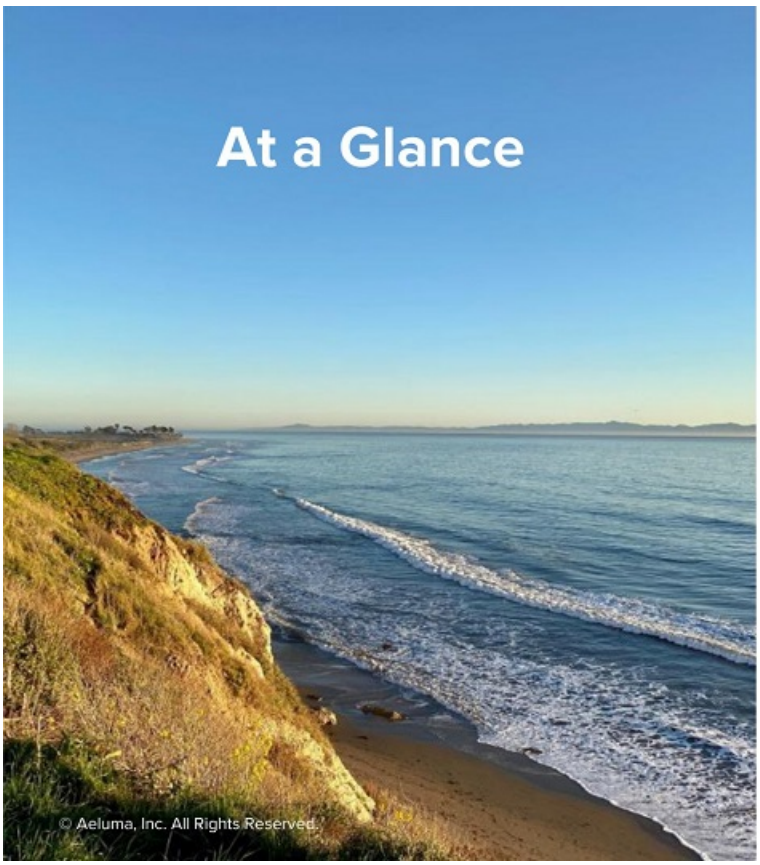
This presentation contains summary information about Aeluma, Inc. ("Aeluma") as of the date hereof. The information in this presentation is of general background and contains an overview and summary of certain data selected by the management of Aeluma. It does not purport to be complete.

This presentation is not a prospectus, disclosure document or offering document under the law of any jurisdiction. It is for informational purposes only. This presentation is not investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. A recipient must make their own independent investigations, consideration and evaluation of Aeluma and the offer and Aeluma recommends that investors should obtain their own professional advice before making any investment decisions in the company. This investor presentation shall also not constitute an offer to sell or the solicitation of an offer to buy any securities, nor shall there be any sale of securities in any states or jurisdictions in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. No registered offering of securities shall be made except by means of a prospectus meeting the requirements of section 10 of the Securities Act of 1933, as amended.

This document has been prepared based on information available at the time of presentation. No representation or warranty, express or implied, is made as to the fairness, accuracy or completeness of the information, opinions and conclusions contained in this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person. While reasonable care has been taken to ensure that facts stated in this presentation are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or its completeness.

To the maximum extent permitted by law, neither Aeluma nor their respective officers, directors, employees, advisors and agents, nor any other person, accepts any liability as to or in relation to the accuracy or completeness of the information, statements, opinions or matters (express or implied) arising out of, contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person.

Some of the statements appearing in this presentation are in the nature of forward looking statements. You should be aware that such statements are predictions based on assumptions, and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industry in which Aeluma operates as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets and other factors that are in some cases beyond Aeluma's control. As a result, any or all of the Aeluma's forward-looking statements in this presentation may turn out to be inaccurate and actual results may be materially different than those expressed in such forward-looking statements. Except as required by law, we are under no duty to update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this presentation. These forward-looking statements speak only as of the date of this presentation, and we assume no obligation to update or revise these forward-looking statements for any reason.



Aeluma™

Enabling the future of automation with high-performance sensors and communications

Overview

Aeluma is a leading-edge semiconductor company specializing in sensors and communications for a broad range of specialty and mass markets.

Aeluma wins by combining high performance with scalable, cost-effective manufacturing.

Corporate Headquarters: Goleta, California (Santa Barbara)

Founded: 2019

Team: ~15 employees (including five PhDs)

Highlights

Broad and defendable **intellectual property** portfolio

World-class technical **team**

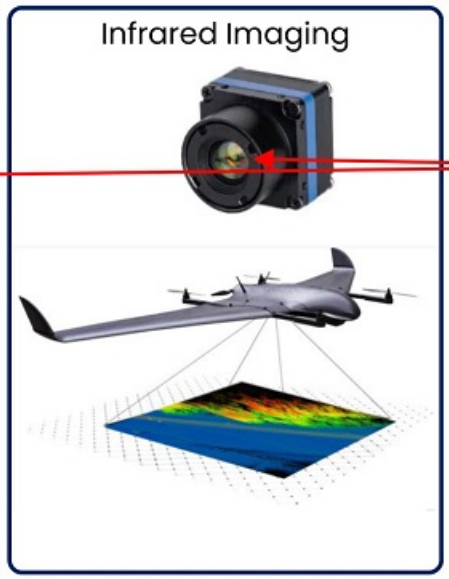
Highly experienced **advisors** and seed investors including Nobel Laureate Shuji Nakamura

Went public through Form 10 Reverse Merger in June 2021 with $8M oversubscribed raise – Listed on **OTCQB ("ALMU")**

Background on Automotive LiDAR

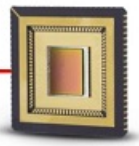
High-Performance Semiconductor Sensors for Autonomous Systems

Aeluma™



Behind the "Eye"

Representative commercial InGaAs-on-InP FPA for 3D imaging and **long-range LiDAR**



Issues preventing broad adoption

- Cost: Price for detector array is too high
- Scale: Existing suppliers unable to scale

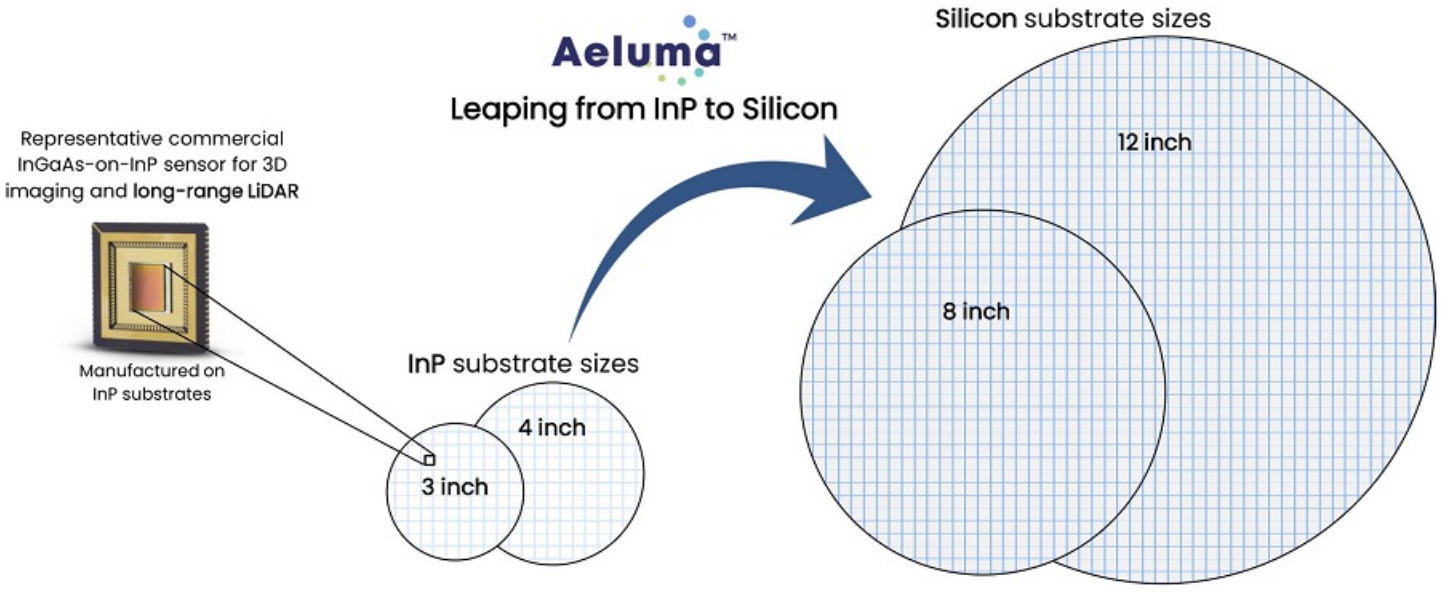
Aeluma's technology seeks to address these challenges with cost-effective, scalable manufacturing based on physics breakthroughs and cutting-edge intellectual property.

High performance at low cost

LiDAR: Light detection and ranging; InGaAs: Indium Gallium Arsenide; InP: Indium Phosphide; 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/inhttps://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 Sensor Manufacturing

High-Performance Technology with Low-Cost, Large-Diameter Substrate Manufacturing



InGaAs: Indium Gallium Arsenide; InP: Indium Phosphide; LiDAR: Light detection and ranging; FPA: Focal plane array
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

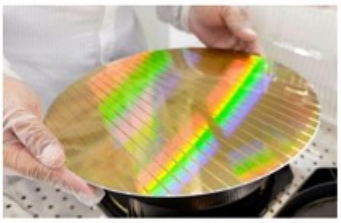
Conventional manufacturing of InGaAs photodetector arrays

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



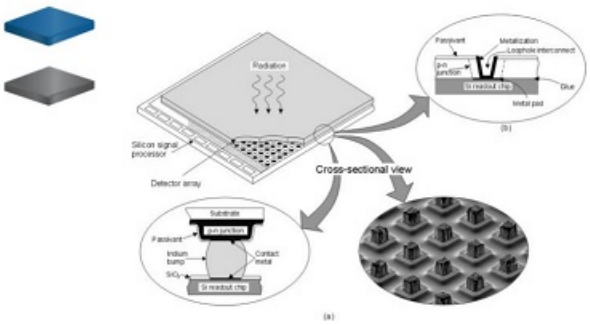
- ✓ Highly automated and ability to produce many arrays per wafer
- ✓ 10X lower manufacturing cost for mass market applications

Note: Outcomes cannot be guaranteed.

Wafer-Scale Integration and 3D Packaging

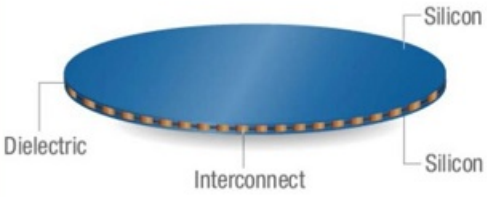
Silicon Manufacturing Environment Enables Advanced Integration and Packaging

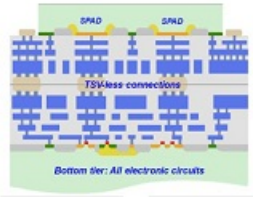
Conventional chip-to-chip hybridization



- 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

Aiming to Service a Broad Market

High-Performance Semiconductors for Sensing and Communications

Aeluma™

Automotive LiDAR

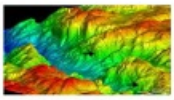


- Consumer vehicles
- Robotaxis
- Trucking

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

Aggregate of these Markets is $Trillions

Market sizes based on internal studies and projections for 2030.

Aiming to Service a Broad Market

High-Performance Semiconductors for Sensing and Communications

Automotive LiDAR

- Consumer vehicles
- Robotaxis
- Trucking

2024 Market Projections[1]

113 million automotive vehicles

131 million tablets

1.73 billion mobile phones

2030 TAM for Automotive LiDAR[2,3,4]

$5B-$80B

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

- 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

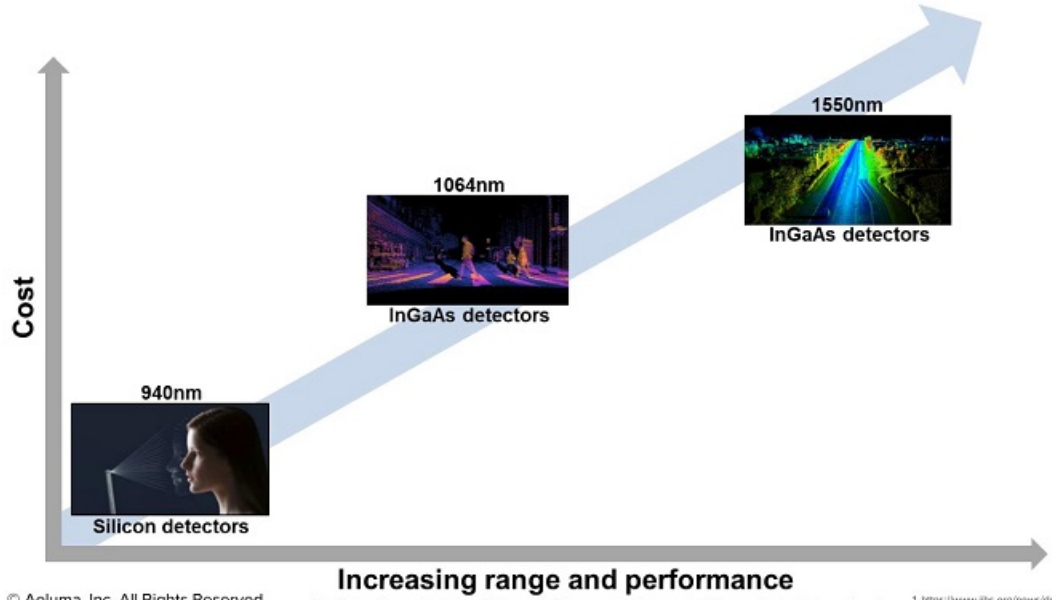
- Telecommunications
- Data centers
- Quantum computing
- 5G/6G
- AI communications

Aggregate of these Markets is $Trillions

1. www.idc.com; 2. https://www.bloomberg.com/press-releases/2022-05-31/lidar-market-size-to-be-worth-4-71-billion-by-2030-grand-view-research-inc; 3. AEye Presentation, LD Micro Invitational 2022; 4. Velodyne estimate; Note: Past results are not indicative of future results; outcomes cannot be guaranteed.

Aeluma's Initial Focus on Automotive LiDAR

- LiDAR is essential for Autonomous Driving (AD) and Advanced Driver Assistance Systems (ADAS).[1]
- Mid- and long-range LiDAR sensors require InGaAs-based receivers[2], however, InGaAs manufacturing is expensive and low volume therefore preventing scaling and broad adoption.[3]



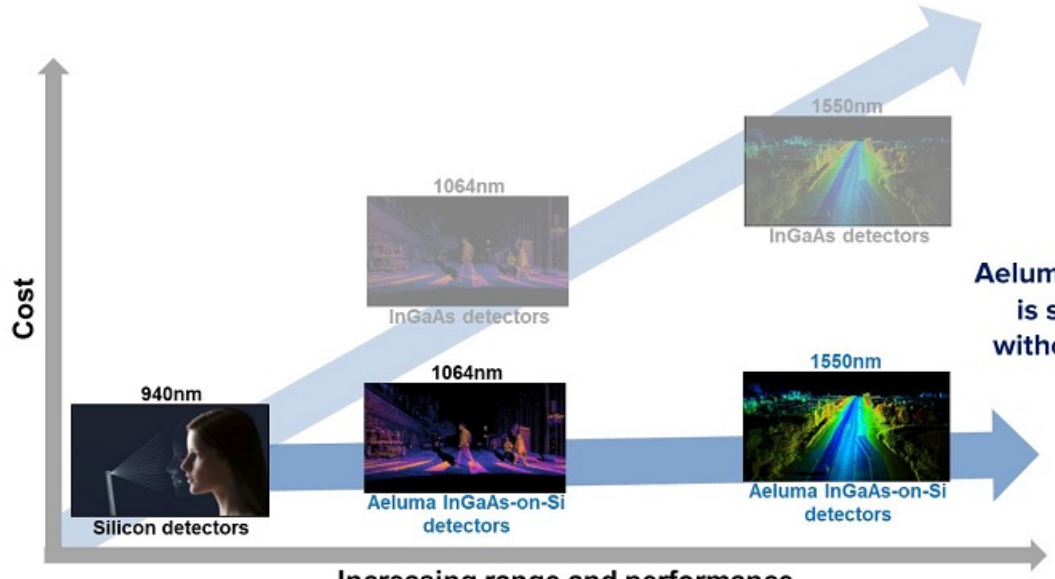
Note: Past results are not indicative of future results. Outcomes cannot be guaranteed. Range and cost estimates not based on actual data. Sources of images: blog.laserto.com; novuslight.com; techcrunch.com; i-microwaves.com

1. https://www.ihs.org/news/detail/pedestrian-crash-avoidance-systems-cut-crashes--but-not-in-the-dark
2. C. Rablau, "LIDAR – A new (self-driving) vehicle for introducing optics to..." ETOP 2019, paper 11143_138.
3. https://www.mdpi.com/2076-3417/9/19/4093

Aeluma's Goal:

To Provide Increased Visibility and Longer Range Cost Effectively

Manufacturing high-performance InGaAs photodetector arrays at Silicon cost levels



Aeluma's disruptive InGaAs-on-Si is scalable and cost-effective without sacrificing performance.

Note: Past results are not indicative of future results. Outcomes cannot be guaranteed. Range and cost estimates not based on actual data. Sources of images: blog.laserto.com; novuslight.com; techcrunch.com; i-microwaves.com

Si: Silicon

Emerging Market:
Automotive OEM LiDAR Demand is Increasing

Mercedes Taps Luminar for Laser Sensors, Takes Stake in the Company

- Technology company also has production pacts with Volvo, SAIC
- European automakers 'ahead of the game' on lidar, CEO says

By Gabrielle Coppola
January 20, 2022, 6:00 AM PST *Updated on January 20, 2022, 9:41 AM PST*
From **Hyperdrive**

Volvo Will Install Lidar on All New Vehicles

Recently it was announced that Volvo will install LiDAR systems onto all new vehicles to help identify potential dangers at extreme distances.

Source and Image: LiDAR News, October 12, 2022
https://blog.lidarnews.com/volvo-will-install-lidar-on-all-new-vehicles/

Note: Past results are not indicative of future results. Outcomes cannot be guaranteed.

Emerging Market:

Automotive OEM LiDAR Demand is Increasing

TRANSPO / MERCEDES-BENZ / CARS

Mercedes-Benz will add Luminar lidar to 'a broad range' of vehicles by mid-decade

Image: Mercedes-Benz AG

/ The two companies are expanding their partnership to include a lot more vehicles sporting the laser sensor that has quickly become an essential ingredient in autonomous driving.

By **Andrew J. Hawkins**, transportation editor with 10+ years of experience who covers EVs, public transportation, and aviation. His work has appeared in The New York Daily News and City & State.

Feb 22, 2023, 10:30 AM PST | 0 Comments / 0 New

Source: https://www.theverge.com

Note: Past results are not indicative of future results. Outcomes cannot be guaranteed.

Emerging Market:
Automotive OEM LiDAR Demand is Increasing

Toyota's LS 500h and Mirai models with short and long-range LiDAR
Image Credit: Toyota

https://www.motor1.com/news/499716/lexus-toyota-advanced-drive-system/

Image Credit: MIRISE (DENSO / Toyota)

Emerging Market:

Automotive OEM LiDAR Demand is Increasing

Nissan Motor Corporation: "Nissan aims to expand ProPILOT technology to over 2.5 million Nissan and INFINITI vehicles by fiscal year 2026. The company will also further develop its autonomous vehicle technologies, aiming to incorporate next generation LIDAR systems on virtually every new model by fiscal year 2030."

https://usa.nissannews.com/en-US/releases/nissan-unveils-ambition-2030-vision-to-empower-mobility-and-beyond

Note: Past results are not indicative of future results. Outcomes cannot be guaranteed.

Emerging Market:
Automotive OEM LiDAR Demand is Increasing

Source: TESLARATI Aug 3, 2022

Israeli lidar startup Innoviz struck a deal reported to be worth $4 billion with Volkswagen to supply advanced ADAS (advanced driver-assistance system) features for its next generation of automated vehicles. The deal will run for eight years starting "mid-decade", when the first Innoviz-equipped Volkswagen group vehicles are expected to ship. Innoviz expects to supply units for between 5 million and 8 million Volkswagen Group vehicles in total.

Source: NoCamels Aug 3, 2022

Note: Past results are not indicative of future results. Outcomes cannot be guaranteed.

Emerging Market:

Automotive OEM LiDAR Demand is Increasing

Volkswagen's autonomous ID.Buzz EVs to begin transporting passengers in Germany

Scooter Doll | Jul 14 2023 - 6:26 am PT | 12 Comments

Source: https://electrek.co

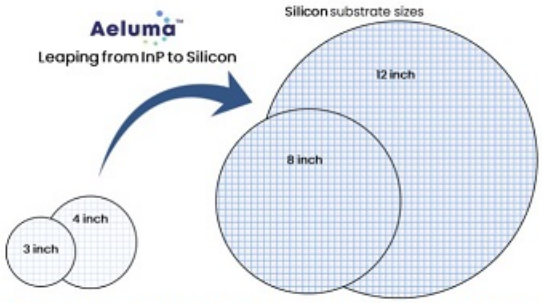
Note: Past results are not indicative of future results. Outcomes cannot be guaranteed.

Manufacturing for a Mass Market

Aeluma's Large-Diameter Manufacturing Economies of Scale

Cars will have Radar, LiDAR, and Camera sensors

- **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/

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	Very good	Okay	Okay	**Very good**
Multiplication (ex. APD, SPAD):	Yes	Yes	Maybe	No	**Yes**
Wafer-scale integration:	Yes	No	Yes	Yes	**Yes**

Aeluma's is the only known technology that combines proven, high-performance InGaAs with scalable, cost-effective Silicon manufacturing, thereby overcoming 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.

Aeluma's Headquarters

Ideal Location for Development and Commercialization

- Located in Goleta, California High-Tech Corridor
- In the heart of the Infrared Capital of the World
- 9,000 sq. ft. space with cleanroom facility
- Close to University of California Santa Barbara

Aeluma's Cost-Effective Scalable Manufacturing

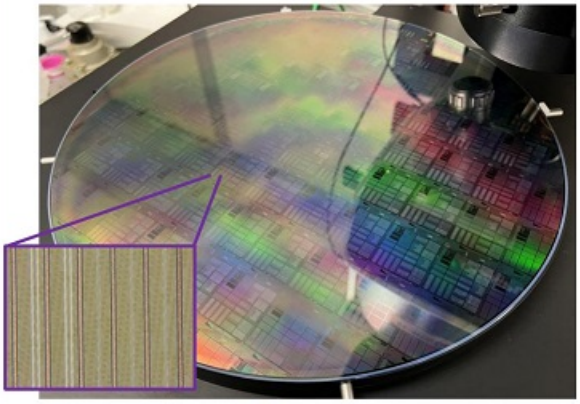
Unique 12-inch Wafer Capability and Strong Intellectual Property

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

Silicon Photonics and Laser Integration

Aeluma's Technology Can Enable Process Integration

12-inch Silicon Photonics Wafer with Aeluma Materials



Aeluma AIM PHOTONICS

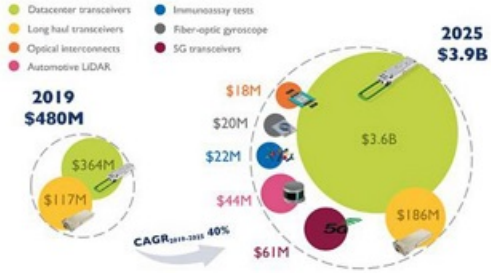
Aeluma, Inc. Enters into Agreement with RFSUNY to Support AIM Photonics

Silicon Photonics Applications

High-Performance Computing and Data Centers

AI and Photonic Computing

Summary of Applications and Market Data



Outcomes cannot be guaranteed. Source of market data: https://optics.org/news/11/5/12
Sources of images: https://venturebeat.com; https://spie.org/news/photonics-focus

Aeluma Intellectual Property Strategy

Key Aspects and Status

- Trade Secrets
  - Secret information that provides a competitive advantage
  - Reasonable precautions taken to preserve secrecy
  - Examples: confidential business information, process recipes, chip designs, layer structures, employees and skill levels
- Patents (>20 issued and pending patents)
  - Aim to cover nearly all aspects of technology including systems, applications, architectures, circuits, materials, packaging and assembly, process, device manufacturing, testing, structures
- Trademarks ("Aeluma™" and "Sensing reimagined™")
- Agreements including Non-Disclosure Agreements

Note: Outcomes cannot be guaranteed. Source of image: https://blog.ipleaders.in

Aeluma Milestones and Traction

Selection of Press Releases and Updates

Jul 6, 2023: **Aeluma Names Former ams-OSRAM Senior Staff Scientist, Matthew Dummer, Ph.D., as Director of Technology**

May 11, 2023: **Aeluma, Inc. Closes $6 Million Oversubscribed Common Stock Only Private Placement**

Apr 24, 2023: **Aeluma CEO to Appear on Bloomberg Businessweek on April 24, 2023 at 5:20 pm ET**

Mar 28, 2023: **Aeluma CEO to Participate in Fireside Chat with Benchmark Company Semiconductor Analyst David Williams**

Mar 10, 2023: **Aeluma Commences Sampling of Its Large-Diameter Wafer Photodetectors to a First Tier-1 Automotive Supplier Customer**

Mar 2, 2023: **Aeluma Achieves Photodetector Performance Milestone with its Large-Diameter Wafer Manufacturing Platform**

Dec 2, 2022: **Aeluma, Inc. Enters into Agreement with RFSUNY to Support AIM Photonics**

Nov 30, 2022: **Aeluma, Inc. Delivers Sensor Engineering Samples to Tier-1 Automotive Supplier for Evaluation**

Oct 11, 2022: **Aeluma, Inc. Achieves Device Fabrication Process Technology Milestone**

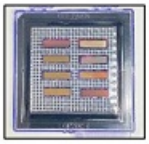
Oct 4, 2022: **Aeluma, Inc. Joins the Lidar Coalition**

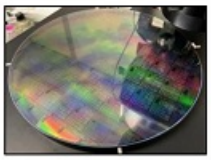
Sep 16, 2022: **Aeluma, Inc. Achieves Materials Technology Milestone**

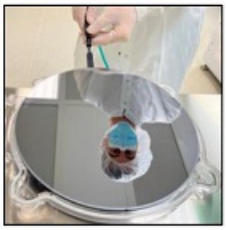
Aug 26, 2022: **Aeluma, Inc. Common Stock Listed on the OTCQB Venture Market**

Aug 1, 2022: **Aeluma, Inc. CEO Appears on NBC NOW Tonight**

Jul 7, 2021: **Aeluma, Inc. Raises $8 Million and Completes Reverse Merger**







Aeluma has beat all of its milestones and more...

Our Leadership Team

Vision, Entrepreneurship and Expertise

Jonathan Klamkin, PhD
Founder, CEO & Director

BinOptics · UCSB · MIT Lincoln Laboratory

Shuji Nakamura, PhD
Seed Investor

UCSB · SLDLASER · SORAA

Matthew Dummer
Director of Technology

Vixar · ams OSRAM

Jeffrey Shealy, PhD, MBA
Advisor & Seed Investor

AKOUSTIS · rfmd · qorvo

Steven DenBaars, PhD
Advisor, Seed Investor & Director

UCSB · SORAA · SLDLASER · AKOUSTIS

Palvi Mehta
Director

PSL · Radioframe Networks · ExtraHop · newpath Networks

Richard Ogawa, JD
Advisor & Seed Investor

Inphi · Camesite · AKOUSTIS · Odyssey Semi

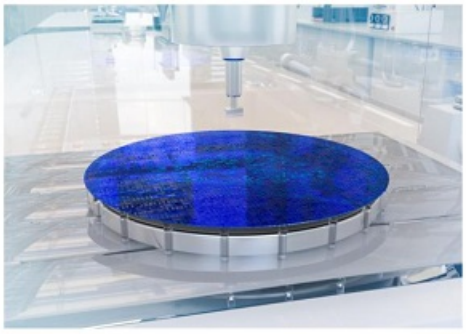
John Paglia, PhD
Director

Pepperdine Graziadio Business School · Axxes Capital · SimulationsPlus

Aeluma Plans and Next Steps

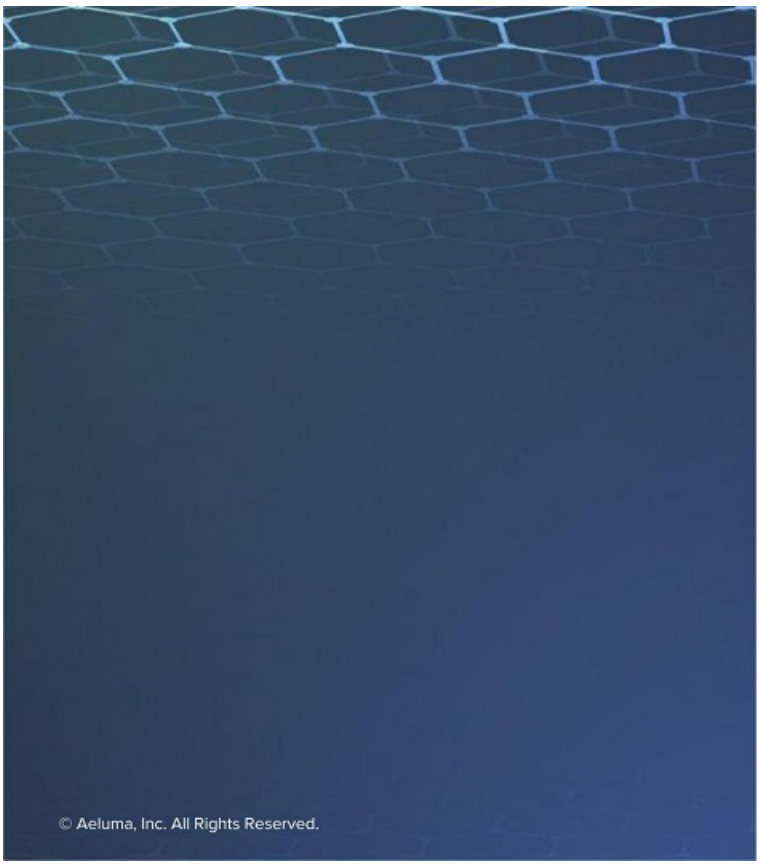
Building on our Momentum

- Deliver on customer orders and contracts
- Government funding opportunities with industrial partners
- CHIPS Act opportunities
- Further establish production-scale foundry process and pursue strategic relationships
- Further business development opportunities
  - Continue to focus on automotive LiDAR
  - Broaden scope to include mobile, AR/VR, AI, industrial LiDAR, robotics, defense & aerospace, communications
- More inventions and patent protection
- Next generation products



Ready Aeluma for Mass-Market Scale

Note: Outcomes cannot be guaranteed.



Aeluma™

Sensing Reimagined™

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