

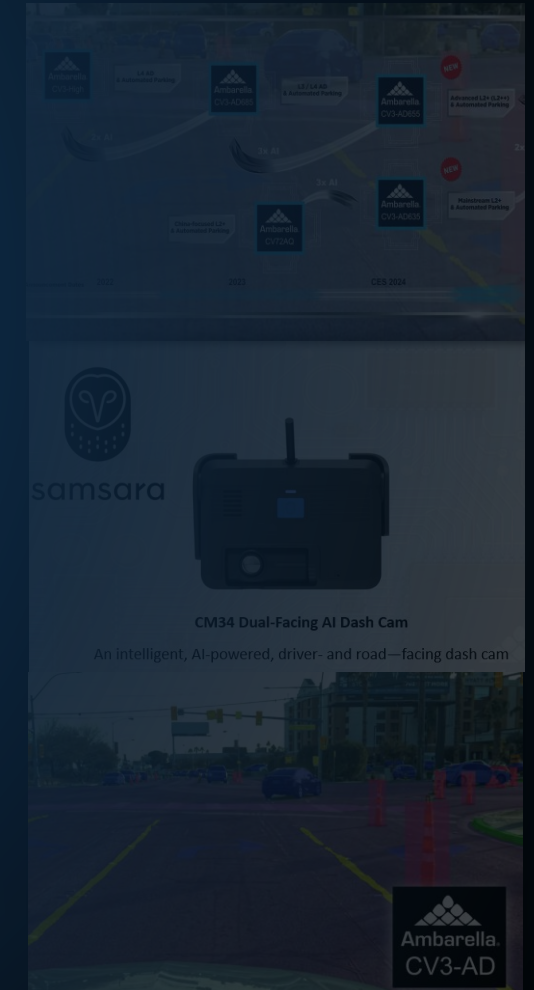
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Scottsdale, Arizona

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Ambarella Overview

Advanced edge deep learning AI inference hardware and software



2024
~25M AI SoCs shipped cumulatively

2021
Acquisition of


2015
Acquisition of


2012
IPO, NASDAQ: **AMBA**

2004
Ambarella founded

Founded on the premise that video is a unique type of data requiring an optimized SoC architecture

- Ambarella’s deep neural network AI inference processor integrated with a state-of-the-art video & radar perception yields highly optimized domain controller SoCs
- VisLab, a pioneer in CV and autonomous driving software, acquired in 2015
- Oculii, a pioneer in high-definition radar perception technology, acquired in 2021

World-class engineering team

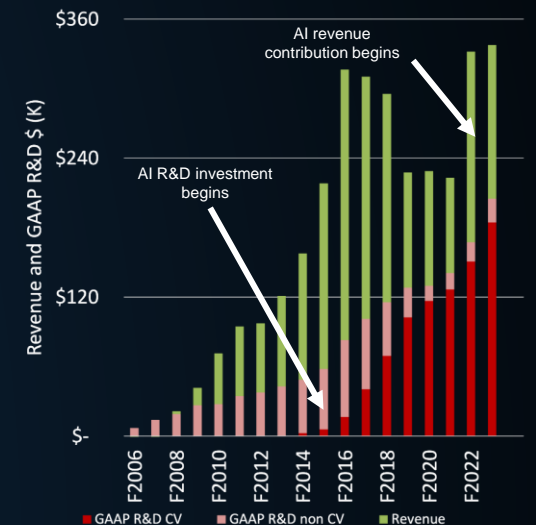
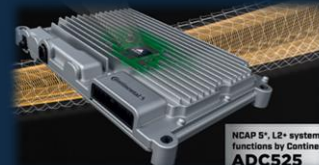
- ~**525** software, algorithm and image processing engineers globally
- **2nm** in development, **5nm** in mass production, **10nm** ~60% of revenue
- **>10yrs** of flawless VLSI execution with step “A” silicon into production

Edge AI revenue driven by computer vision today and advanced networks, including GenAI, are enabled with our 3rd generation products sampling today

- Low-power and high-performance SoCs for auto and IoT markets
- Scalable family allows SW to be reused across a customer’s portfolio

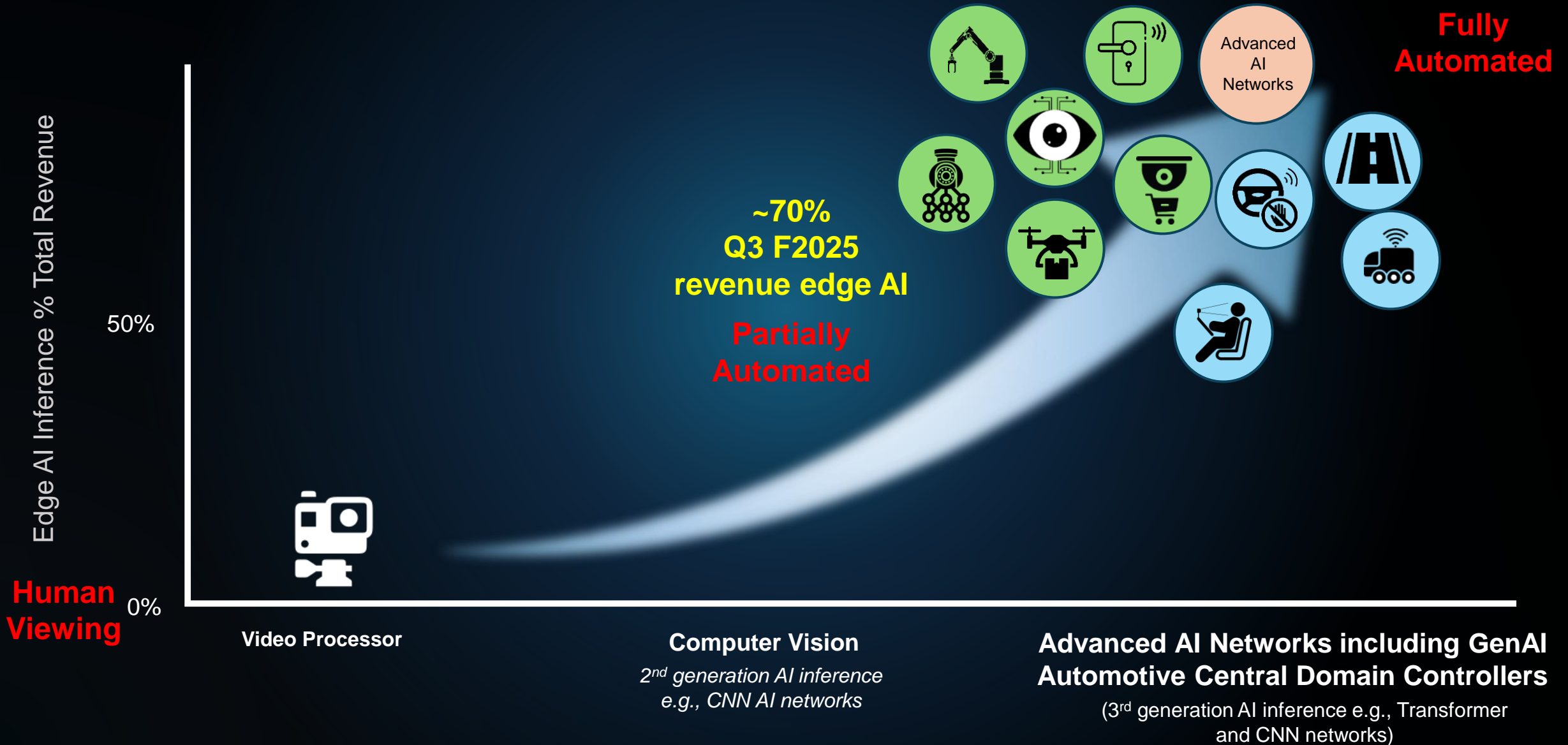
Significant R&D investment funded by operations and strong balance sheet

- >\$1.2 billion cumulative R&D investment into AI
- \$227 million net cash; no debt; 16 consecutive years of positive operating cash flow



Edge AI Inference the Foundation for Our Growth

Successfully leveraging perception heritage into multiple high value deep learning AI inference applications



Edge AI Demands a Fundamentally Unique Processing Architecture

Higher levels of efficiency and new capabilities enabled with edge AI

Cloud
Data Centers

Network Edge
Network Computing



Application Edge
IoT Endpoints



Edge AI enables:

- Privacy and security
- Realtime processing
- Reduce network bandwidth requirement
- Low power consumption
- Synergies between cloud and edge AI processing – AI processing throughout the network hierarchy

Ambarella's "Algorithm First" Approach

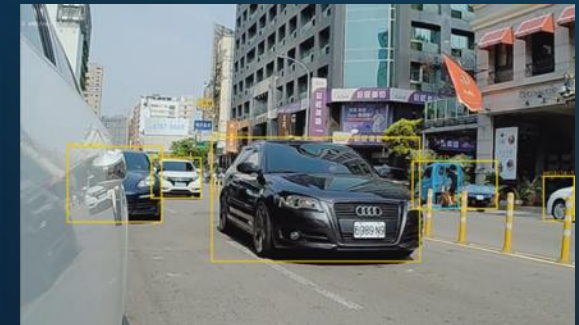
Differentiated approach enables superior efficiency and scalability



Superior Image Quality



AI-based Computer Vision & Radar Processing



"Algorithm First" Approach
Programmable AI Platform
with Optimized Acceleration

Image Processing
& Compression

**17 years of
Image
Processing and
Compression
Experience**

Autonomous
Driving

**25 years of
Autonomous
Driving
Experience**

Radar
Processing

**Oculii
Patented
Adaptive AI
Radar
Algorithms**

CVflow - Deep
Neural Network AI
processor

**CVflow® -
Superior AI
Performance
Per Watt**

Scalable Deep Learning AI Inference Processor Portfolio

Integrated SoC (AI accelerator + perception processing) offers superior AI performance per Watt

5nm Samsung

CV3-AD family of central domain controllers

3rd generation; AI
(e.g., Transformer and CNN AI networks)

AI Inference SoCs



2024S

~1.5x CV22 AI ✓



2024S

~6x CV22 AI ✓



2024S

~13x CV22 AI ✓



2024S

~27x CV22 AI ✓



2023S

~80x CV22 AI ✓



2022S

~160x CV22 AI ✓

10nm Samsung

2nd generation; AI
(e.g., CNN AI networks)



Feb 2021P

1/4 of CV22 AI



Jul 2019P

1/2 of CV22 AI



Dec 2018P

Baseline (CVflow DNN AI)



Apr 2021P



Aug 2019P

4x CV22 AI



Apr 2021P

2x CV22 AI



2022P

3.5x CV22 AI ✓

Human Viewing



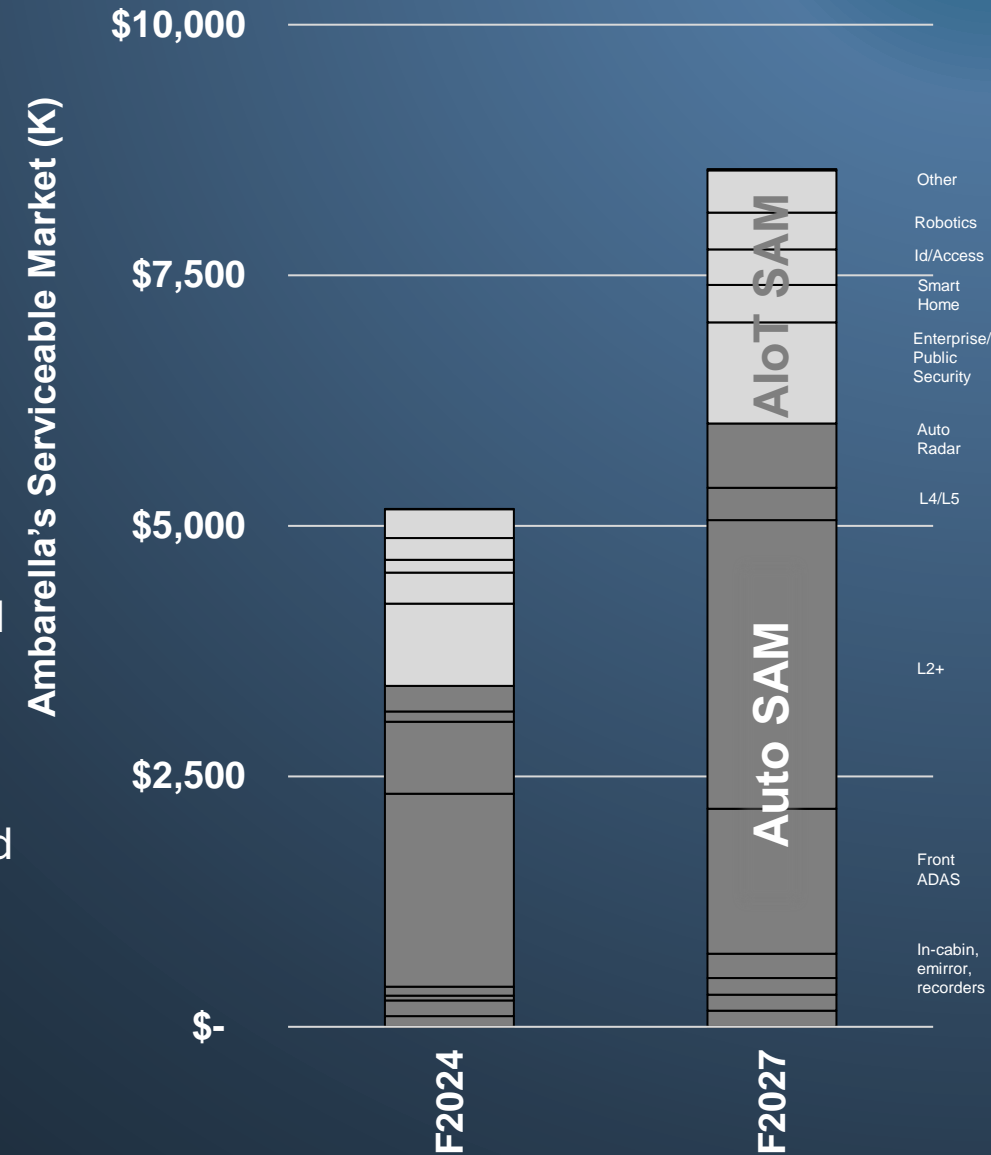
“New Products” ✓
20xx = Calendar Year
P = Production
S = Sample

Large and Growing Markets

Serviceable market (“SAM”) revenue CAGR in the high teens

- **F2024 revenue was ~34% Auto and ~66% IoT**
- **F2028 revenue SAM estimate ~70% Auto and ~30% IoT**
- **We are focused on AIoT edge applications**, including both edge endpoints and edge infrastructure systems (e.g., AI box, edge server)
- **We address the megatrends of security, safety, and automation**
- **Key driver is to enable electronic systems to perceive the world and make intelligent decisions**; human viewing business expected to decline as a proportion of revenue
- AI has triggered **new product cycles** in existing IoT markets and opened **entirely new opportunities** in the auto and IoT markets
 - Advanced AI networks, including GenAI, are expected to be an important new product cycle

SAM estimates do not include autonomous driving software, advanced networks nor Generative AI (“GenAI”)



Source: Ambarella, ABI, Gartner, IHS, Strategy Analytics, TSR

Automotive Applications

~34% of fiscal 2024 revenue

Majority of our F2024 Auto Revenue in ADAS

Goal:
Intersect
at L2+
with CV3

	Visualization	ADAS		Autonomous Driving	
	Human Viewing + Recording	Sensing + Viewing + Recording		Part-time	Full-Time
	Dataloggers, Drive Recorders <small>(pre-install, dealer-fit, aftermarket)</small>	Front ADAS <small>(front facing camera L0 to L2)</small>	Other ADAS <small>(emirror, in-cabin (DMS, OMS) access, personalization)</small>	L2+	L4
Application					
C2023 market penetration (% of new vehicles produced globally)	~15%	~70%	~1% other ~4% emirror ~15% in-cabin	~3%	~0.1%
C2023 → C2027 Ambarella SAM*	\$275M → \$400M	\$1.6M → \$1.3B	\$200M → \$500M	\$500M → \$2.5B	\$200M → \$900M
<i>*does not include SW stack</i>					
Products					
Ambarella Processors	Human Viewing	2 nd Generation AI		3 rd Generation AI	
Other Ambarella Products				CV3-AD Platform includes: CV3-AD SoCs • 4D radar perception SW • End-to-end AI SW Stack	



AIoT Applications

~66% of fiscal 2024 revenue



AIoT

(F2024 AIoT revenue 100%)

“Security”

(~80%)

Enterprise “Security”

(~60%)

Home “Security”

(~20%)

Other

(~20%)

- Access Control
- Drone
- Portable Video
- LLMs
- Multi-modal
- Robotics
- Videocon.
- VR
- Wearable

- **IoT historically camera-based human viewing and endpoints**

- 2nd gen AI SoCs now a majority of revenue and typically process CNN networks, enabling machine sensing + human viewing → ~CV2 ASP 2x video processor ASP
- 3rd gen AI SoCs add transformer network processing support. Expected to enable entirely new applications, potentially expanding SAM deeper into the network → further increase in ASP anticipated

- **Enterprise currently the largest security market**

- Global installed base in C2023 estimated to be 1.1 billion cameras with <10% based on embedded deep learning SoCs
 - Installed base growing low single digits Y/Y (AI a key driver)
 - Annual unit demand heavily influenced by replacement units (AI a key driver)
- Consistent with our revenue, we estimate a majority of the installed base is represented by enterprise + public capital expenditures, the balance home spending

- **Other AIoT includes emerging advanced AI networks (e.g. CLIP, VLM, LLM, GenAI, multi-modal) and legacy**

- 2nd gen and 3rd gen AI SoCs are enabling entirely new applications, including access control, consumer cameras, fixed and mobile robotics and virtual reality
- GenAI represents both a new product cycle and an extension into new markets as larger models can be condensed into smaller, more efficient models at the edge
 - N1 serves the “missing middle” for 3B to 50B parameter models such as Llama-v2, Gemma, Phi-2 and CLIP in network infrastructure HW
 - CV7 family addresses <3B parameter models including within an endpoint



BOSCH



motorola
AVIGILON



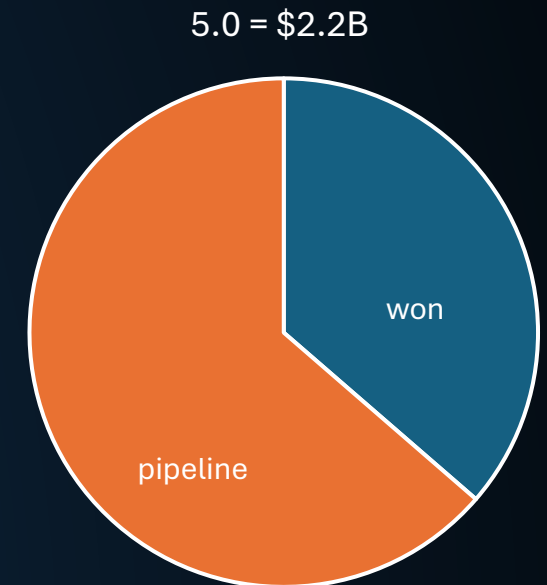
TELEDYNE
FLIR



6-Year Automotive Revenue Funnel 5.0 ~\$2.2 Billion

Methodology unchanged: six years (F2026 to F2031) with discount factors to estimate net auto revenue

- **Our 6-year automotive revenue funnel 5.0 is ~\$2.2 billion (\$2.4 billion the prior year)**
 - “Won” of \$800 million (similar with prior funnel 4.0)
 - “Pipeline” of \$1.3 billion (~\$1.6 billion with prior funnel 4.0)
 - About \$2 billion not included in the funnel beyond year six, the terminal year of our methodology
- **The \$2.2 billion six-year funnel, although reduced, remains an indication of the strong revenue growth we anticipate from the auto market, given our F2024 revenue of ~\$77 million**
- **Significant revisions between funnel 5.0 and funnel 4.0 due to changes in OEM/T1 forecasts, project delays or cancellations, projects won or lost and the addition of new projects**
- **Automotive market increasingly challenged in the last year**
 - Global vehicle production growth is slow
 - L2+ market penetration remains in the low single digits
 - OEM projects and software development are delayed



November 2024

Q3 F2025 (October) Representative Customer Engagements

Ambarella's edge AI inference products are enabling many new use cases



i-PRO New Aero PTZ Camera

HEAVY-DUTY and SMART

- Extreme weather resistance
Windsblasts, temperature, rain and snow, salt corrosion, darkness
- Edge AI capability
- Easy and flexible installation

19 new models with CV22



Rearview mirror/display with A12



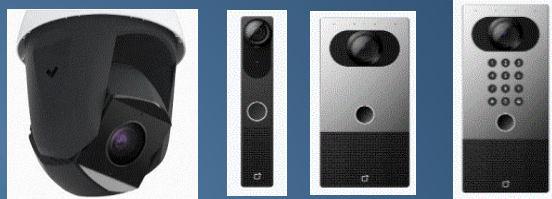
CV22 enabling multiple AI use cases



CV28 for left and right exterior mirror replacement



CV2FS for ADAS with US Global T1



Multiple enterprise security + access control products based on CV72 and CV25



CV5 in state-of-the-art portable video camera



Mapmaking with CV5



ADAS for Trucks with CV22AQ

Q4 (January) F2025 Outlook and Q3 (October) F2025 Recap

Q4 fiscal 2025 outlook and Q3 fiscal 2025 results provided November 26, 2024

Q4 F2025 (January, 2025) Outlook

- Our Q4 revenue guidance is \$76.0M to \$80.0M (consensus estimate ~\$69.4M on Nov. 25th) with AIoT and Auto both flat to slightly down sequentially
- For F2025, we expect total revenue of \$276.9M to \$280.9M, up 22% to 24% (consensus estimate on November 25th was \$266.6M or up 18%)
- Q4 non-GAAP gross margin estimated to be 61.5% to 63.0% (consensus 62.9%) with non-GAAP operating expense \$49.0M to \$52.0M (consensus \$50.8M)

Q3 F2025 (October, 2024) Results

- Revenue of \$82.7M was above the high-end of our guidance range of \$76.0M to \$80.0M (consensus estimate ~\$79.0M)
- Non-GAAP gross margin was 62.6% versus the consensus estimate of 63.2% and non-GAAP operating expense was \$49.1M (consensus \$50.0M)
- Non-GAAP earnings per share were \$0.11 versus the consensus estimate for earnings per share of \$0.04

Multi-year transformation underway; geopolitical risks remain elevated

- AI is becoming pervasive, we are embedding it in all our new products and we have growing evidence of market acceptance
- We see a wide variety of risks outstanding, including geopolitical and supply chain factors. These risks include*:
 - potential export regulations on advanced technologies
 - market share shifts between our customers
 - the evolution of new markets and rates of adoption of new technologies
 - supply chain issues such as long lead times, shortages of materials, components, electricity and manufacturing capacity, the sell-out from our customers own sales channels and adverse weather conditions
 - changes to tariffs and/or the Entity List
 - the risk customers in China continue to take actions to reduce their dependence on components they believe could be subject to new export controls, including the creation of dual China/non-China supply chains

**Potential risk factors that could affect our financial results are more fully described in the documents that we file with the SEC, including annual reports on Form 10-K and quarterly reports on Form 10-Q.*



Thank you!

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