



2024 ANNUAL GENERAL MEETING

BluGlass Limited (ASX:BLG), 21 October 2024

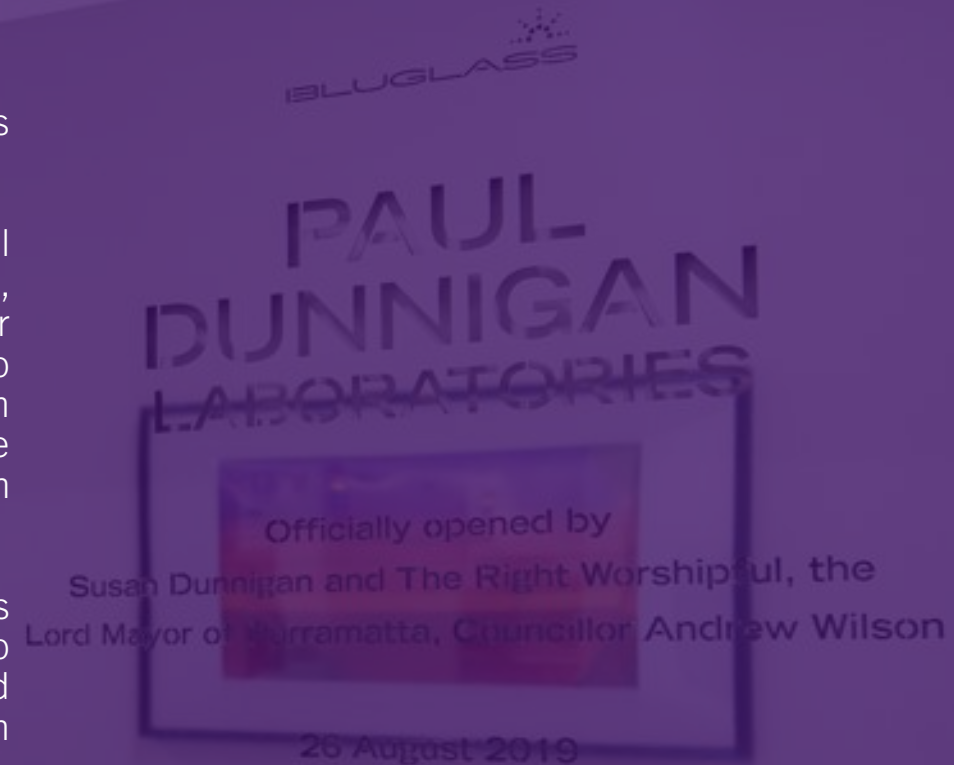
FORWARD LOOKING STATEMENT

This document has been prepared by BluGlass Limited to provide readers with an update of the Company and the Company's technology.

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Information on Service Addressable Markets (SAM) is based on internal BluGlass modelling and assumptions, both of which depend on successful R&D outcomes and results achieved within estimated timetables. BluGlass recommends a cautious interpretation be taken by investors.



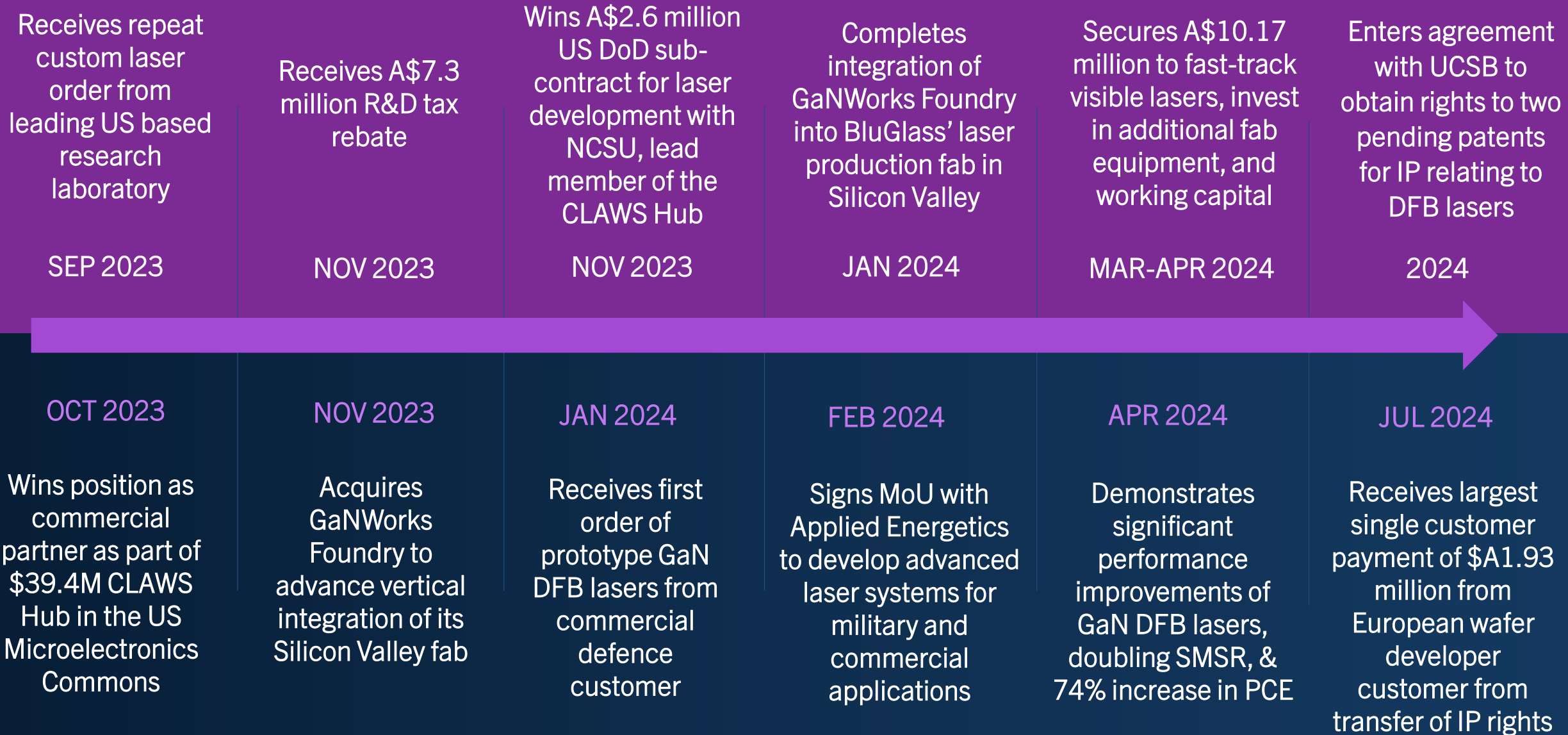
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JAMES WALKER CHAIR'S REPORT

SCALING REVENUES & INCREASING CUSTOMER ENGAGEMENT IN FY24



FINANCIAL PERFORMANCE

	FY24	FY23	YoY Movement
	\$	\$	%
Revenue	4,618,437	1,146,235	303%
Other Income	5,405,859	8,368,678	-35%
Net Assets	14,886,073	13,887,160	7%
Consolidated Loss	10,005,974	11,751,243	-15%
R&D Tax Rebate (Receipt for prior year R&D spend) *	5,372,680	7,314,179	-27%
Cash Position (as at end of FY)	5,573,205	4,258,334	31%

* FY24 R&D Rebate is yet to be received in FY25 - Not included in FY24 cash balance





JIM HADEN CEO'S REPORT

DELIVERED OUR MOST SUCCESSFUL YEAR



Delivered record income of A\$10.1M

- Third consecutive year of top-line income growth
- 4400% increase in project revenue compensated for the year-over-year reduction in the RnD rebate
- Record single customer receipt of \$1.93M for non-laser IP deal
- GaNWorks Foundry integration with only a slight year-over-year increase in expenses — projected savings on track

Executed on CLAWS Hub milestones

- 100% milestone delivery on or ahead of schedule despite fab challenges during the year
- Largest single contract to date delivering A\$2.73M revenue
- Achieved world-leading DFB performance
- Extended wavelength demos from violet to aqua-marine
- Established Lab-to-Fab Product and Research design kits for violet to blue single mode lasers
- Established CLAWS Hub customer inquiry flow

CLAWS – CORE YEAR HIGHLIGHTS

III-N Photonics	Optimizing light output and operating voltages of visible single-mode lasers. Improving manufacturability and progressing reliability and repeatability for commercial production.	Capability to ship improved performance prototypes to DoD, Gov Agencies, and prime contractors	Single mode laser and Semiconductor Optical Amplifiers for discrete devices (ex, external cavity laser diodes) to increase performance of high-precision devices to address the myriad of quantum applications
	Significantly improved GaN DFB laser performance (world-leading performance), doubling SMSR from ~ 20 to >40 dB, at the same time as demonstrating a 74% increase in power conversion at 115 mW. Continued to execute DFB iterations ahead of program schedule	Sampling with multiple key customers. Improved interest in broader commercial and national security sectors	Moving closer to quantum transition application requirements supporting: Quantum computing; Atomic and Ion Clocks; Magnetic Sensing; Atmospheric and underwater LiDAR; Sea, Air, and Space Comms; and more.
	Extend DFB performance from 450 nm to 420 and 405 nm	Ability to enable more quantum interactions, and novel applications	Access to additional quantum atomic transitions (Yb, Yb ⁺ , Ca, Ca ⁺ , Sr, Sr ⁺ , Ba ⁺ , Rb) supporting the above applications

MOU WITH NATIONAL SECURITY CONTRACTOR - APPLIED ENERGETICS

BluGlass and Applied Energetics are partnering to combine highly complementary high-performance solutions and expertise across a wide range of emerging technologies

- Applied Energetics pioneers next-generation ultrashort pulse (USP) optical systems for the US Department of Defense, defense primes, the intelligence community, and commercial, medical, and space markets.
- Collaboration is developing innovative solutions critical to national security, aviation, and commercial applications
- Gaining traction with major US government agencies and commercial partners
- BluGlass will leverage its unique GaN distributed feedback (DFB) lasers, SOAs, and single-mode lasers in Applied Energetics' advanced laser systems



GROWING DEMAND AND MARKET VALIDATION



Manufacturing flexibility

BluGlass' laser offering addresses underserved markets, wavelengths and delivered in flexible form factors.



Dedicated GaN laser supplier

A dedicated GaN laser supplier targeting the quantum, scientific, biotech, defence and industrial markets.



Differentiated offering & novel capabilities

BluGlass' novel capabilities are attracting top-tier strategic partners, progressing through our project pipeline



Development capability

Supporting customer product roadmaps with development capability to power innovative new applications.



Solving our customers greatest challenges

Packaging and customisation flexibility to reduce customer integration costs, solving key challenges.

BluGlass' go-to-market strategy, has been validated by strong customer demand and market recognition.

Our partners are choosing to work with us to solve challenges, develop novel capabilities, and create new markets.

GROWING PROJECT PIPELINE

Custom project wins are a vital pillar of our commercial strategy and path to profitability: providing large recurring revenues, and fast tracks and funds technology development.

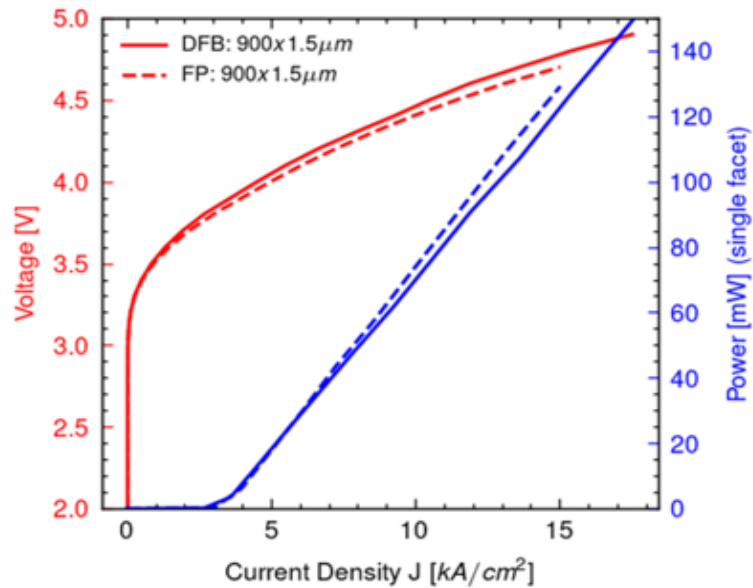
BluGlass' project pipeline is gaining significant momentum with diverse opportunities at various stages of negotiation including:

- **Medium and large development opportunities:** with defense primes, commercial manufacturers to innovative start-ups
- **Mixed term:** From single to multi-year joint developments agreements
- **Follow-on manufacturing contracts and service agreements:** Partners are interested in securing long-term partnerships to provide commercial manufacturing follow-on contracts and ensure supply
- **Developing novel capabilities:** Developing in strategic markets with high-growth potential
- **Various stage:** Opportunities ranging from initial discussions to advanced negotiations
- **Sector diversity:** Opportunities span quantum, defence, aviation, scientific, and biomedical application development



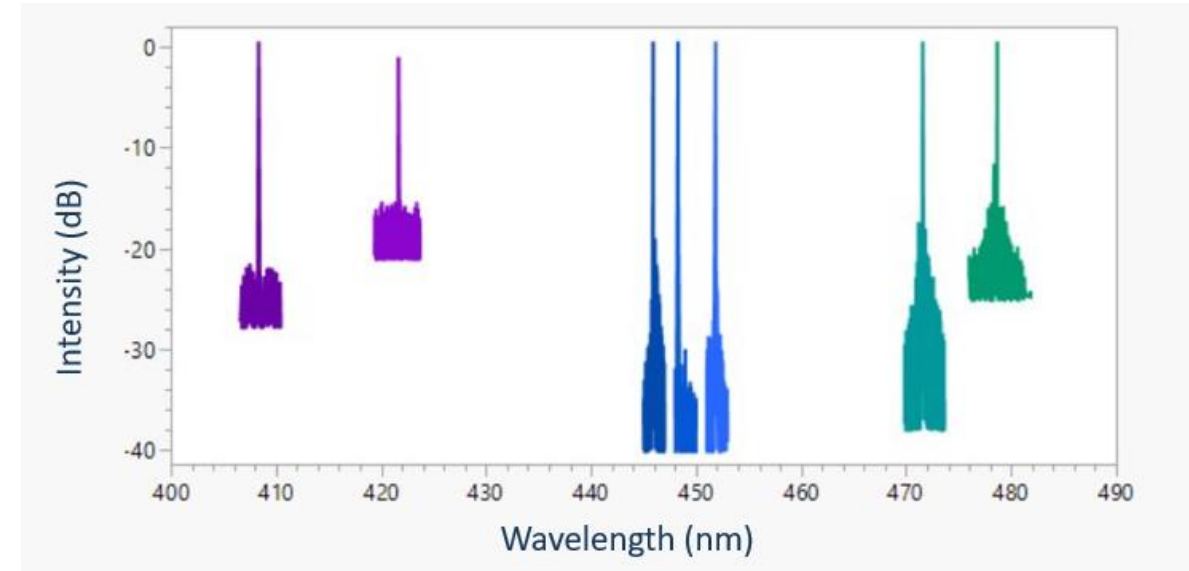
TECHNICAL — OPERATIONAL
PROGRESS

DFB PERFORMANCE IMPROVEMENTS – WORLD LEADING NARROW LINEWIDTH DH DEVICES



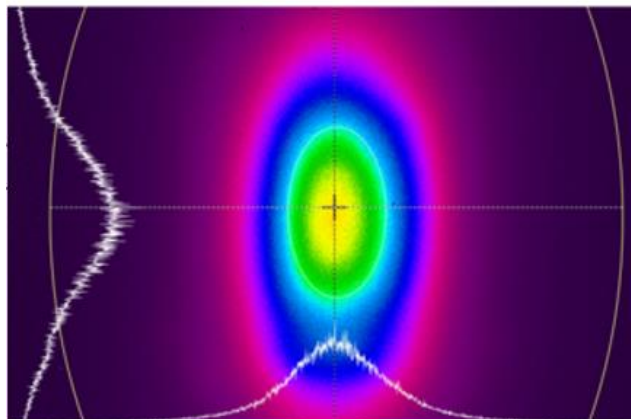
Demonstrated a 74% increase in power conversion efficiency from 2023 to 2024

EXTENDING DFB DEMONSTRATIONS TO VIOLET



Product architecture design iterations enable narrow frequency DFB demonstrations from violet 405nm to aquamarine 480nm.

We are moving closer to quantum transition application requirements supporting quantum computing, atomic and ion clocks, magnetic sensing, atmospheric and underwater LiDAR, sea, air, and space communications, and more.



DFB beam profile measurements confirm single spatial mode operation

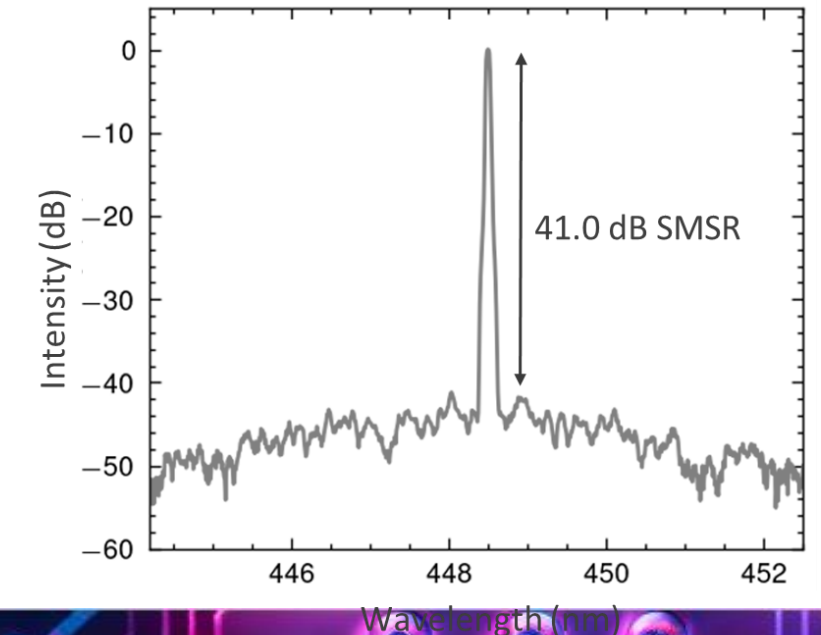
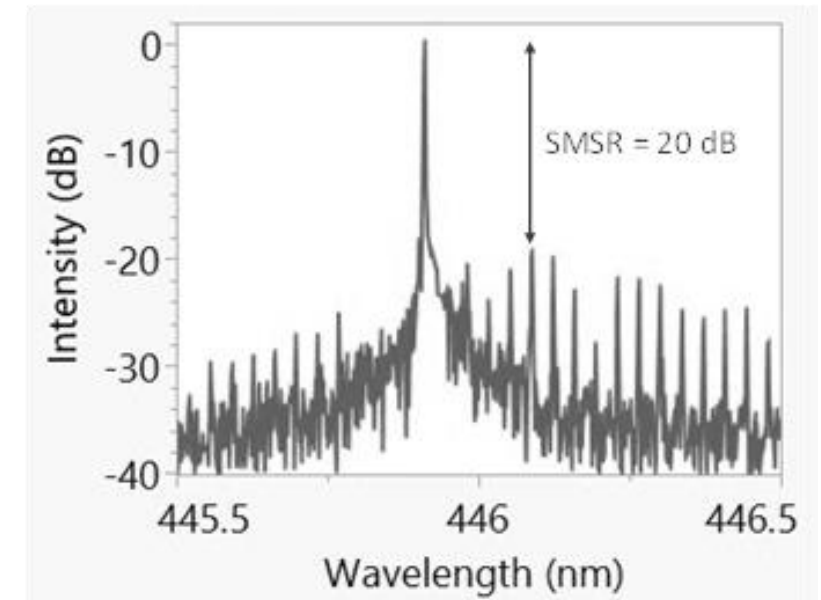
Ref: BluGlass improves novel GaN DFB laser performance for quantum applications; published April 2024

DOUBLED DFB SIDE-MODE-SUPPRESSION RATIO

BluGlass's latest design iterations demonstrate a world-leading side-mode-suppression ratio (SMSR), which underpins customers' growing interest within the quantum, scientific, and biotech industries.

DFB Design 1

- SMSR of ~ 20 dB.
 - The spectrum displays the narrow-frequency behavior of a DFB device driven to 6 kA/cm²
- DFB Design 2 — improved grating design
 - SMSR of ~ 40 dB at even higher current densities
 - Enables more precise manipulation of atomic structures

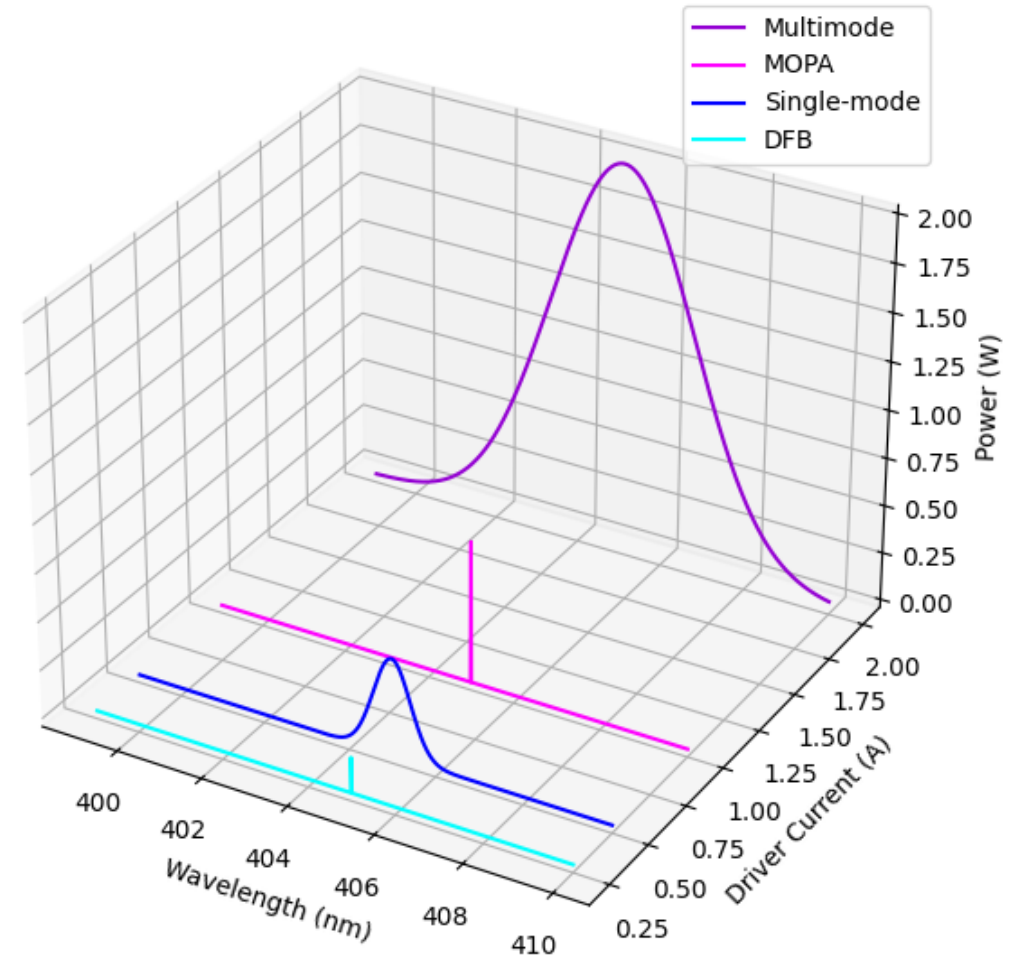


Ref: BluGlass improves novel GaN DFB laser performance for quantum applications; published April 2024

IMPROVE MARKET ACCESS: ADVANTAGES OF NARROW LINE-WIDTH DFB VISIBLE LASERS

- GaN DFB lasers provide key advantages:
 - Precise wavelength control
 - Narrow linewidth
 - Higher spectral purity
 - Low relative intensity noise
 - Enhanced stability
- What does this mean to BLG customers?
 - Improved measurement and sensing accuracy using atomic-level interactions
- What does this mean to BluGlass?
 - Increased market access: LiDAR, Comms, Quantum Sensing, Scientific — Atomic Clocks, 3-D Holography, and more

Comparison of Multimode, MOPA, Single-mode, and DFB Lasers



IMPROVED BLG DEVICE CHARACTERIZATION CAPABILITIES IN NASHUA



BURN-IN RACKS

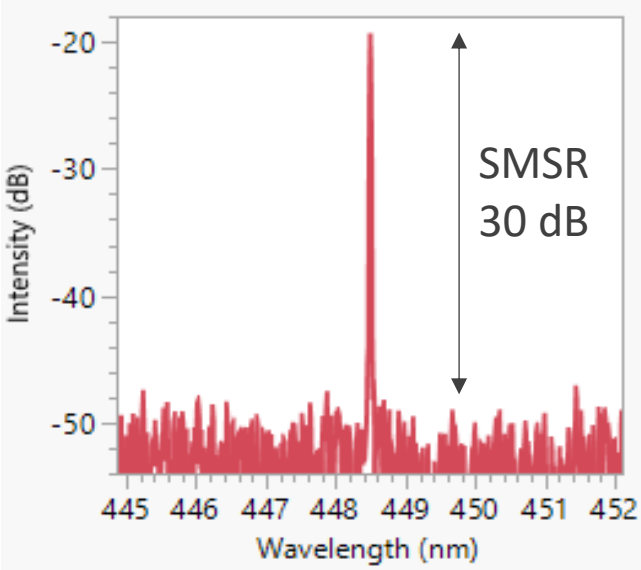
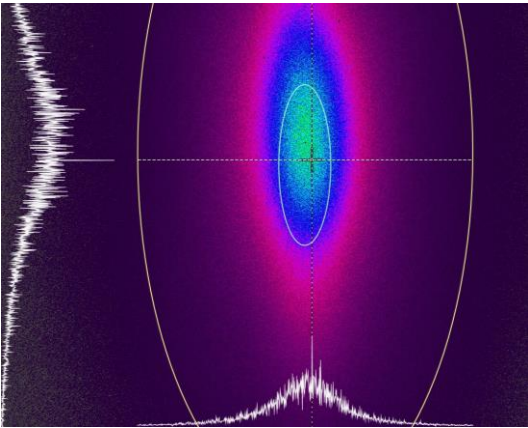
Large scale commercial burn-in racks (retrofitted LED racks) for GaN devices



RELIABILITY RACKS

Purchased state-of-the-art monitored reliability system to scale BluGlass laser reliability testing and prepare for volume manufacturing

Sample output of a Single-mode diode tested on our internal Far-field test system



Sample output of a DFB diode tested on our internal SMSR measurement station.

INSOURCING WAFER FAB UPDATE

Progress and Struggles

- Multiple single-mode and DFB designs developed and tested
- Transitioned DFB laser processes inhouse, matching peak performance achieved with UCSB, and improved yields /reduced loss
- Struggled with equipment downtime and losses due to a minor earthquake & sweeping power outages
 - Enhanced mitigations to bolster supply chain up-time
- New equipment identified for GaN-optimized processing as part of continuous fab improvement
- Hired veteran equipment engineer

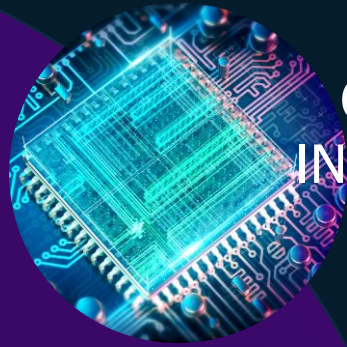
GaNWorks Foundry Integration

- Completed GaNWorks Foundry integration with only a slight year-over-year increase in expenses — projected future savings on track
- In-sourcing GaNWorks has enhanced supply chain and strengthened our manufacturing team
- Promoted highly experienced GaNWorks engineer to Head of Operations at Fremont
- Backside processing
 - Reduced breakage by 50%
 - Increased speed by 30%



MARKET
OPPORTUNITY

GaN DFB LASER APPLICATIONS



QUANTUM
INFORMATION



BIO-
PHOTONICS



RANGING &
NAVIGATION



QUANTUM
SENSING

A myriad of applications

- Quantum Computing
- Precision Atomic and Ion Clocks
- Magnetic and Electric Sensing
 - next-gen robotics, geophysics, materials science, and medical diagnostics
- Underwater and Atmospheric LiDAR
- Biophotonics such as fluorescence microscopy
- Space communication
- Undersea communication
- Laser spectroscopy for atomic colours

QUANTUM OPPORTUNITY

The quantum sensing market is projected to experience explosive growth to reach US\$1 billion by 2030 and \$6 billion by just 2040, as its advantages both disrupt existing at the same time as forging new markets that rely on sensor technology, according to recent [McKinsey analysis](#).



Quantum sensing

\$1B–\$6B

estimated market size by 2040

\$0.7B

invested
as of Dec 2023

48

start-ups
as of Dec 2023

A large industrial machine with a glass viewing window. The brand name 'AIXTRON' is displayed in red LED letters at the top. Below it, the words 'PLANETARY REACTOR' and 'GAS FOIL ROTATION' are printed. Inside the window, two pairs of protective gloves are hanging. A man in a dark polo shirt is standing in front of the machine, looking at it. Two women are standing to his right, also looking at the machine. The entire image has a purple tint.

AIXTRON

PLANETARY REACTOR™

GAS FOIL ROTATION™

THE YEAR AHEAD

BLUGLASS TECHNOLOGY ROADMAP

Launched GaN Products (Core Capabilities)

- Portfolio spanning 405, 420 & 450nm in Single-mode & multi-modes
- Continued improvement in performance & reliability
- **Initial sales – Expanding reach through CLAWS participation**

Add Novel Capabilities

- Sample Distributed Feedback (DFB) lasers and semiconductor optical amplifiers (SOAs) for quantum apps
- DFB lasers are not commercially available at present
- **Unique product positioning and growing presence in higher ASP quantum markets**

Establish BLG as Partner of Choice

- **BLG positioned for break-out success as the only pure-play GaN laser provider**
- Enhanced packaging and manufacturing flexibility
- Industry-leading performance and stand-out technology capabilities

Increase unique capabilities and technology to capture greater value over time

1

2

3

4

5

- Extend Wavelengths to ultra-violet (390nm) & green (525nm)
- Improve power conversion & reliability
- Offer greater form factor flexibility adding fibre-coupled packages
- **Increasing sales and BLG reputation**

Enhance & Extend Product Portfolio

- Higher ASP product offering such as Photonic Integrated Circuits (PICs)
- **Ease of system integration for quantum and doubling applications**

Higher Value Offering (Integrated Functionality)

WHAT WE INTEND TO ACCOMPLISH IN THE COMING YEAR

BUILD STRATEGIC PARTNERSHIPS

- Advance BluGlass' alliance with Applied Energetics. Demonstrate advanced blue laser systems for commercial and national security opportunities
- Win opportunities with primes and startups leveraging BluGlass technology to enable advanced systems in the areas of quantum sensing and frequency doubling
- Strengthen BluGlass IP position

ADVANCE TECHNOLOGY ROADMAPS

- Advance novel GaN devices inc DFBs and SOAs in the areas of quantum sensing and frequency doubling
- Integration of single-mode lasers with power amplifiers on a single chip
- Continue to work with SSLEEC (UCSB) and NCSU (CLAWS) to develop and protect IP
- Identify and acquire new equipment and processing technology

ENHANCE MANUFACTURING & OPERATIONS

- Improve packaging and testing capabilities, especially for DFB devices
- Process improvements associated with feedback from testing with our new reliability racks
- Increase yields and reduce cycle times as we improve the backside processing associated with the GaNWorks Foundry acquisition

WIN NON-DILUTIVE REVENUE & DEVELOPMENT FUNDING

- Continue to balance US and AU government funding opportunities
 - Extend government funding to agency funding
- Extend from government agencies to prime and subprime contractors
- Apply non-dilutive funding to technological and operational investment

BLUGLASS: THE WORLD'S LEADING PURE PLAY VISIBLE LASER SUPPLIER

GaN lasers are disrupting the US\$25B laser market

- GaN lasers are forecasted to be a US\$2.5B segment of the broader laser market by 2025
- Visible GaN lasers offer a quantum leap over traditional infrared lasers in precision and efficiency, with adoption accelerating across quantum, scientific, biotech, and defense applications

Expanding market with few competitors

- One of just a handful of GaN laser manufacturers globally, operating in a market with high barriers to entry
- BluGlass is the only pure-play GaN laser supplier not captive in commoditised markets
- Competitors are typically high-volume, low-product mix businesses, with wavelength and form factor constraints
- Significant unmet and growing demand for exciting quantum and bio-tech markets

BluGlass is the solution

- Full-suite pure-play GaN laser supplier disrupting the rapidly expanding worldwide visible laser market
- Positioned as the supplier of choice with flexible product offerings, design, and manufacturing capabilities
- Secured orders from leading industrial and quantum OEMs, an international energy research institute, and medical device manufacturers
- Proprietary RPCVD manufacturing process offers significant competitive advantages, facilitating novel laser architectures, brighter, and higher efficiency laser diodes



2024

THANK-YOU & QUESTIONS

Investor Relations:

Stefanie Winwood

P: +61 2 9334 2300

E: admin@bluglass.com

FORMAL BUSINESS:

IBLUGGLASS

PAUL DUNNIGAN LABORATORIES

Officially opened by
Susan Dunnigan and The Right Worshipful,
Lord Mayor of Warramatta, Councillor Andrew

26 August 2019

RESOLUTION 1 – ADOPTION OF REMUNERATION REPORT

“That, for the purpose of Section 250R(2) of the Corporations Act and for all other purposes, approval is given for the adoption of the Remuneration Report as contained in the Company’s Annual Financial Report for the financial year ended 30 June 2024.”

Resolution	For	Against	Discretion	Exclusions	Abstain
RESOLUTION 1	125,651,662 (77.71%)	15,155,493 (9.37%)	20,888,477 (12.92%)	6,268,715	1,192,584

RESOLUTION 2 – RE-ELECTION OF MR JAMES WALKER AS DIRECTOR

“That Mr James Walker, a Director who retires by rotation in accordance with the Company’s Constitution and ASX Listing Rule 14.5, and being eligible offers himself for re-election as a Director of the Company, effective immediately.”

Resolution	For	Against	Discretion	Exclusions	Abstain
RESOLUTION 2	133,927,254 (82.36%)	7,817,387 (4.81%)	20,861,607 (12.83%)	0	6,550,683

RESOLUTION 3 – RE-ELECTION OF MR VIVEK RAO AS DIRECTOR

“That Mr Vivek Rao, a Director who retires by rotation in accordance with the Company’s Constitution and ASX Listing Rule 14.5, and being eligible offers himself for re-election as a Director of the Company, effective immediately.”

Resolution	For	Against	Discretion	Exclusions	Abstain
RESOLUTION 3	82,263,681 (56.89%)	41,468,749 (28.68%)	20,861,607 (14.43%)	0	1,173,581

RESOLUTION 4 – APPOINTMENT OF AUDITOR

“That, for the purposes of section 327B(1) of the Corporations Act and for all other purposes, In.Corp Audit & Assurance Pty Ltd, having been nominated by shareholders and consented in writing to act as auditor of the Company, be appointed as auditor of the Company, effective immediately.”

Resolution	For	Against	Discretion	Exclusions	Abstain
RESOLUTION 4	145,794,974 (87.46%)	50,758 (0.03%)	20,861,607 (12.51%)	0	2,449,592

RESOLUTION 5 – ASX LISTING RULE 7.1 APPROVAL OF FUTURE ISSUE OF SECURITIES

“That, for the purposes of ASX Listing Rule 7.1A and for all other purposes, the Shareholders approve the issue of equity securities up to 10% of the issued capital of the Company (at the time of issue) calculated in accordance with the formula prescribed in ASX Listing Rule 7.1A.2 and otherwise on the terms and conditions set out in the Explanatory Statement which accompanies and forms part of this Notice of Meeting.”

Resolution	For	Against	Discretion	Exclusions	Abstain
RESOLUTION 5	112,258,641 (66.75%)	34,112,317 (20.28%)	21,802,958 (12.96%)	0	983,015



2024

Investor Relations:

Stefanie Winwood

P: +61 2 9334 2300

E: admin@bluglass.com