Safe Harbor Statement

Statements in this presentation that relate to future plans, market forecasts, events or performance are forward-looking statements. These statements involve risks and uncertainties, including, risks associated with the strength or weakness of the business conditions in industries and geographic markets that IPG serves, particularly the effect of downturns in the markets IPG serves; uncertainties and adverse changes in the general economic conditions of markets; IPG's ability to penetrate new applications for fiber lasers and increase market share; the rate of acceptance and penetration of IPG's products; inability to manage risks associated with international customers and operations; foreign currency fluctuations; high levels of fixed costs from IPG's vertical integration; the appropriateness of IPG's manufacturing capacity for the level of demand; competitive factors, including declining average selling prices; the effect of acquisitions and investments; inventory write-downs; intellectual property infringement claims and litigation; interruption in supply of key components; manufacturing risks; government regulations and trade sanctions; and other risks identified in the Company's SEC filings.

Readers are encouraged to refer to the risk factors described in the Company's Annual Report on Form 10-K and its periodic reports filed with the SEC, as applicable. Actual results, events and performance may differ materially. Readers are cautioned not to rely on the forward-looking statements, which speak only as of the date hereof. The Company undertakes no obligation to release publicly the result of any revisions to these forward-looking statements that may be made to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.
Global market leader in fiber laser technology across multiple end markets and applications

Vertical integration, manufacturing scale and technology driving best-in-class margins

Expanding multi-billion dollar addressable market opportunity

Industry-leading earnings and cash flow

Based on 2021 data
IPG Fiber Laser

ADVANTAGES

Highest Powers
Record Energy Efficiency
Industry Leading Reliability
Smallest Form Factors
Easy System Integration
Lower Operating Costs
Best-in-Class Portfolio
Modular & Scalable
Leading-Edge Beam Quality
Revolutionizing the Laser Industry

**IPG FIBER LASERS**

- Ultra High Power Continuous Wave (CW) Lasers
- Ultra Compact Lasers
- Adjustable Mode Beam and QCW Lasers
- High Power Nanosecond Pulsed Pico and Femtosecond Pulsed

- Higher Productivity
- Compact
- Reliable
- Robust

**TRADITIONAL LASERS**

- Carbon Dioxide (CO₂)
- Lamp-Pumped Nd: YAG

- Expensive
- Bulky
- Unreliable
- Difficult to Operate

- Inefficient
- Frequent Maintenance
- Costly Consumables
- Not Scalable
IPG Total Addressable Market

$10 billion TAM Estimate

Industrial Applications

Non-Industrial Applications

IPG Holds Leading Share in Industrial Applications

High-Power Cutting and Welding
Marking and Engraving
Additive Manufacturing
Precision Processing

Future Growth Opportunities

Medical
Microprocessing
Sensors and Instruments
R&D and Scientific
Aerospace & Defense

Source: Optech Consulting, Strategies Unlimited and IPG Photonics Corporation
Laser Penetration in Industrial Applications

Continued adoption of laser tools in many industrial applications

- DRILLING
- ABLATION
- MARKING
- CLEANING
- WELDING
- BRAZING
- CUTTING
- ADDITIVE MFG

Global Machine Tool Market Size

- Industrial Laser Systems
- Non-Laser Machines

$80 billion
Continued Focus on Product Diversification

- Fiber lasers continue to replace CO2 (and other) lasers, as well as non-laser manufacturing tools, such as saws, dies, and punches in varying applications within new and existing markets.

- Well positioned to benefit from global macro trends such as automation, miniaturization as well as focus on sustainability, renewable energy and energy efficiency.

- Growth comes from areas of diversification in renewable energy investments, microprocessing, medical, advanced applications.

- Both AMB and high-power pulsed lasers are benefiting from increased investment in EV battery capacity worldwide.

- The handheld welding market, in which LightWELD continues to gain traction competing with traditional MIG and TIG systems, is a large global market.

- Medical business continues to grow significantly, potentially doubling in size over the next 2 to 3 years.
### Broader Portfolio of Fiber Lasers

**ANY WAVELENGTH, MODE OF OPERATION, POWER, BEAM PARAMETERS OR APPLICATION**

<table>
<thead>
<tr>
<th>X-Ray</th>
<th>Ultraviolet</th>
<th>Visible</th>
<th>Near-Infrared</th>
<th>Diode Lasers</th>
<th>1.5 μm</th>
<th>Holmium Lasers</th>
<th>Fe:ZnSe/S Lasers</th>
<th>Mid-Infrared</th>
<th>Far-IR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 nm</td>
<td>400 nm</td>
<td>700 nm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Peak Power (Megawatts)**

- **Peak Power: 120kW**
  - Applications: cutting, welding, soldering, drilling, brazing
- **Peak Power: 23kW**
  - Applications: cutting, welding, soldering, drilling, brazing, annealing
- **Peak Power: 150kW**
  - Applications: thin-film amination, low-k and silicon dicing, glass scribing
- **Peak Power: >10 MW**
  - Applications: thin metal cutting and drilling, ophthalmic surgery, high precision, scientific
- **Peak Power: >20 MW**
  - Applications: thin metal cutting and drilling, ophthalmic surgery, high precision, scientific

**Applications**

- **Thin metal cutting and drilling**
- **Ophthalmic surgery**
- **High precision**
- **Scientific**

**Pulse Duration**

- X-Ray: <500 fs
- Ultraviolet: ~2 ps
- Visible: 0.7-5 ns
- Near-Infrared: 1-200 ns
- Diode: 0.05-50 ns
- Holmium: 1.5 μm
- Fe:ZnSe/S: 10 μm

**Peak Power**

- 0.05-50 ms
- 1 MW
- 150 kW
- >10 MW
- >20 MW
- 23kW
- 120kW
- 1 MW
- 1.5 μm
- 10 μm

**Time**

- **Continuous Wave**
- **Quasi-Continuous Wave**
- **Nanosecond Pulsed**
- **Nanosecond Pulsed**
- **Picosecond Pulsed**
- **Femtosecond Pulsed**

**Thick steel cut with a continuous wave laser**

**Drilling using a quasi-continuous wave laser**

**Surface Cleaning using a pulsed laser**

**Micromachining using an ultrafast laser**
Laser Applications in Electric Vehicle Manufacturing

Laser Welding, Cutting & Marking of Battery Cells:
- Foil Welding
- Injection Pin Welding
- Tab to Terminal Welding
- Battery Cell Marking
- Pressure Relief Valve Welding
- Tab to Pole Welding
- Foil Cutting
- Cap to Can Welding

Laser Welding, Cutting & Ablation for Electric Motors:
- Hairpin Welding
- Rotor and Stator Stacks Welding
- Electrical Steel Sheet Cutting
- Hairpin Ablation
IPG Solutions for Electric Vehicle Manufacturers

IPG laser welding technologies enable battery welding that is 10X faster and more reliable than traditional bonding methods.

These combined technologies create the only battery welding solution with integrated process monitoring, traceability and non-destructive testing.

- **ADJUSTABLE MODE BEAM (AMB) LASERS**
  - Spatter reduction on EV batteries for improved reliability and safety
  - Superior welding quality of challenging dissimilar materials
  - Faster, more uniform high-speed welding

- **MID & HIGH POWER SCAN HEADS**
  - Consistent, precise, high-speed welding of cells to bus bars
  - High strength welds with no seal damage
  - Consistent penetration depth

- **INLINE WELD MONITORING**
  - In-weld real-time monitoring and control for optimal battery welds
  - Eliminates the need for destructive testing
  - Reduces scrap and increases overall throughput
  - Identifies problems before processing begins

- **WOBBLE WELDERS**
  - Reliable, high-speed welds for battery enclosures
  - Superior aesthetic finishes with no pitting or cracking
  - Pressure-tested hermetic seals

Safe and reliable production of EV batteries, motors and other components rely on these technologies for their unique ability to deliver:

- Weld quality control and depth consistency
- Spatter-free and porosity-free welds
- High throughput manufacturing and high-quality results
Adjustable Mode Beam (AMB)

- **Broadest range of beam profile tune-ability:**
  independent and dynamic control of the size and intensity of the core and ring beams enabling high-quality, high-speed, uniform welding

- **Virtually eliminates welding spatter:**
  molten material is deflected towards the bottom of the weld pool which is stabilized with large keyhole openings allowing molten vapor to escape

- **Increases welding quality:**
  consistent high weld seam quality, pore and crack free

- **High-speed welding for e-Mobility and automotive applications:**
  300 mm/s or higher speeds welding Al battery enclosures and drivetrains

- **Maximizes uptime:**
  less rework of parts, drastically reduces sensor contamination

Any combination of a small-spot high intensity bright core and a larger ring-shaped beam
Real-Time Laser Weld Monitoring for Unmatched Weld Quality Assurance

Using **real-time inline coherent imaging (ICI)** the LDD-700 weld monitoring system consolidates weld results into concise and actionable quality data from a single system.
Expanding Market Opportunities in New Applications

Advanced Applications

Microelectronics Processing

Medical

Systems
Ultrafast Fiber Lasers

Ultrafast fiber lasers operate in the range of picoseconds (10^{-12} seconds) and femtoseconds (10^{-15} seconds). Balanced throughput, precision and quality are made possible with the shorter pulse durations of ultrafast lasers without undesirable heat effects. This cold processing virtually eliminates heat affected zones, unwanted melting and cracking for consistent, controlled processing of the most sensitive materials.

IPG Ultrafast Product Options:
- Infrared, Green and Ultraviolet Wavelengths
- High Pulse Energies
- Pico to Femtosecond Pulse Durations

IPG Ultrafast Benefits:
- Low Cost & High Efficiency
- Ultra-compact heads
- All-fiber designs
- Easily Integrated
- High Power & High Reliability

Application Examples:
- Ultra-Precise Glass Drilling
- Glass Marking
Handheld Laser Welding & Cleaning Systems

LightWELD & LightWELD XC

• LightWELD systems offer greater flexibility, precision, speed, and greater ease of use compared to traditional welding products.

• LightWELD XC, adds unique cleaning capabilities to the original LightWELD handheld welder, removing rust, oil, or any coatings prior to welding and also cleaning any post-weld debris or discoloration.

Benefits include:

• Faster than traditional methods for higher welding productivity (less setup and shorter weld time)

• Less heat-induced damage increases application range and decreases scrap (less part distortion and deformation)

• Higher quality results with less finishing required decreases cost-per-part (less post-weld grinding/cleaning)

• Easy to set up (unbox and assemble in minutes)

• Easy to learn and operate enabling manufacturers to solve scarcity of skilled welders (built-in optimized modes and online tutorials)

• Preset modes eliminate process development in most cases

Crowds gather to watch live LightWELD XC demonstrations at FABTECH 2021 expo
Broad Laser Portfolio for Medical Applications

**Ophthalmology**
- Laser Eye Surgery, Refractive Eye Surgery
- Cataract Treatment

**Dermatology**
- Hair removal, Vascular and Pigmented Lesion
- Skin Aging, Scar, Tattoo, Acne, Skin Whitening
- Body Contouring

**Surgery**
- Urology, General Surgery, ENT, Gynecology
- Cardiovascular Surgery, Phlebology, Orthopedic Surgery

**Dentistry**
- Soft and Hard Tissue Dental Procedures

**Imaging**
- Microscopy Imaging including Confocal, Fluorescence, Multiphoton, OCT, Retinal Fluorescence and Disease Diagnosis
IPG Vertical Integration

INTEGRATED SYSTEMS
WELDING | ABLATION
DRILLING | CLADDING
CUTTING | CLEANING

Fab Operations
Semiconductor wafer growth
Diode processing, chip mounting & burn-in

Laser Diode Packaging
Up to 200 Watts of power

Optical Fiber
Silica based glass doped with rare earth ions

Fiber Blocks
Fiber Bragg Gratings
Isolators, Modulators

Industrial Lasers
Coupling | Final burn in | Shipment

Power Supplies
Control Electronics

Laser Modules
Up to 3 kW

Process Heads, Monitoring and Switches
All fiber beam delivery

Deep in Technology
Deep in Experience
Diodes: the Power Behind the Fiber Laser

- IPG diodes are the lowest cost in the industry, empowering our Customers with the HIGHEST power fiber lasers for the LOWEST cost per watt
- In 2019 IPG transitioned to a new higher power chip reducing cost per watt and the level of required production to support a given level of revenue

Source: IPG Photonics Corporation
## Financial Performance and Target Model

<table>
<thead>
<tr>
<th>GAAP Metrics</th>
<th>2012-17</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Growth</td>
<td>20% CAGR</td>
<td>4%</td>
<td>(10%)</td>
<td>(9%)</td>
<td>22%</td>
<td>Double Digit Growth *</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>55%</td>
<td>55%</td>
<td>46%</td>
<td>45%</td>
<td>48%</td>
<td>45%-50% *</td>
</tr>
<tr>
<td>Operating Margin</td>
<td>37%</td>
<td>36%</td>
<td>18%</td>
<td>17%</td>
<td>25%</td>
<td>25%-30% *</td>
</tr>
</tbody>
</table>

* Revenue growth and margins can be below long-term targets during periods of macroeconomic weakness that give rise to lower demand for our products
Strong Cash Returns

Operating Cash Flow

- 2015: $263
- 2016: $70
- 2017: $123
- 2018: $390
- 2019
- 2020
- 2021

Capital Expenditures

- 2015: $70
- 2016: $123
- 2017: 
- 2018: 
- 2019: 
- 2020: 
- 2021:

2021 Return on Equity ¹

10%

2021 Return on Invested Capital ¹ ²

21%

¹ excludes losses and gains on foreign currency
² excludes cash
Capital Allocation Strategy

Capital Allocation Priorities

1. Internal Investment in R&D and CapEx
2. Share Repurchases
3. Acquisitions
4. Dividends

$2.1 billion of capital allocated 2016-2021

Source: IPG Photonics Corporation
Strong Track Record of Accomplishing ESG Goals

Accomplishments to Date

**Environment**
- IPG lasers have saved approximately 25,000,000 metric tons of emissions and 48 terawatts of electricity since 2011*
- Decreased our emissions by 8% from 2017 to 2020 and decreased our energy intensity by 41%
- Our waste heat recovery technology saved an estimate of 6,808 metric tons of greenhouse gas emissions and 5.6 million gallons of city water
- We replaced traditional lights with LED light bulbs, exceeded insulation building codes by up to 25% and used water saving fixtures in our new construction projects

**Social**
- Women comprise 34% of our global workforce and 21% of senior leaders and managers; two female directors joined our Board in January 2021
- We enhanced the visibility of our job opportunities via the CIRCAWORKS program for women, minorities, older workers, individuals with disabilities, veterans, and LGBQIA applicants
- Throughout the COVID-19 pandemic, IPG has assisted its global offices by donating 1 million RMB to help those in the Wuhan Area, purchasing PPE supplies and ventilators for local health centers in Europe and donating over 27,000 N95 masks to medical facilities in the U.S.

**Governance, Ethics and Safety**
- Separated Chairman and CEO roles and appointed our first non-executive Chairman in 2021.
- All Board committees are comprised entirely of independent directors
- IPG upholds uncompromisingly high ethical standards that are defined by our Code of Business Conduct
- Complies with OSHA standards and manufacturing employees undergo comprehensive safety training to minimize any workplace hazards or accidents

*Assumes fiber lasers replace lamp-pumped and diode-pumped Nd:YAG, CO2 and disc lasers.
Promoting Stakeholder Engagement

- We engage with key stakeholders to communicate our efforts to protect the planet and to secure a safe working environment.
- We continue to evaluate the concerns of our customers, employees and stockholders to ensure that our sustainability strategy is consistently updated to prioritize industry-specific as well as global material issues.
- In 2021, we commenced our first materiality assessment involving our key stakeholders and expect to share in our next sustainability report.

Our Key Stakeholders

Customers
Dedicated to helping our customers grow their businesses while helping them achieve their energy reduction goals from using our efficient and environmentally-friendly lasers.

Employees
We focus on attracting and retaining talent from diverse backgrounds and experiences.

Stockholders
Our sustainability activities are inspired by the ideals and values of our stockholders.

*IPG recognizes the value of transparency and accountability to our various stakeholders*
Use of IPG lasers saved ~25MM(1) metric tons of emissions equivalent to 48TW of electricity*
Our Sustainability Agenda

Energy
- Reduced the energy consumption per kilowatt of laser power sold over the last ten years
- Updated the efficiency and infrastructure of our manufacturing facilities
- Investigating use of solar panels at a planned new building which could provide 1 MW of clean power annually

Approximately 7 million metric tons of CO₂ saved from using IPG lasers

Waste
- Continue to divert resources from landfills by increasing our recycling practices
- Commited to investigating new opportunities to conserve resources and reuse materials

Recycled 388 metric tons of metals

Water
- Our buildings have the most efficient plumbing equipment available to conserve water consumption
- Committed to looking for ways to decreasing water consumption

Water usage decreased from 196,540m³ in 2017 to 180,306m³ in 2020 despite expanded output

We are focused on expanding our energy efficiency strategy by decreasing our energy consumption, reducing our environmental footprint and supporting the sustainability goals of our customers.
Corporate Governance Highlights

Independent Leadership and Oversight
- Governed by an 8-member board of directors, 6 of whom are independent directors under NASDAQ Guidelines
- Separate Chairman / CEO roles since May 2021; appointed non-executive Chairman in October 2021
- Published inaugural corporate sustainability report in 2020
- Increased stock ownership requirements for executives and directors

Continued Focus on Board Refreshment
- Focused on increasing Board diversity
- Adopted Rooney Rule in 2020 ensuring diverse candidates are part of the Board search
- Ongoing process to refresh and strengthen board composition with shareholder input; 3 new directors added in the past 3 years
- 25% of the Board is comprised of female directors

Structured to Empower Shareholder Rights
- Annually elected directors
- Single class of voting stock and no supermajority voting provisions
- Supermajority of independent directors and 100% independent Board committees
- Stockholder right to act by written consent
- Majority voting standard
- Stockholder proxy access right adopted in March 2019
The IPG Advantage

- **Focus on Improving Diversity Company-Wide**
- **High Electrical Efficiency Enables Lower Customer Energy Use**
- **Strong Margins, Balance Sheet & Cash Flow**
- **The World Leader in Fiber Lasers**
- **Expanding into Laser & Non-Laser Applications**
- **Vertical Integration Provides Competitive Edge**
- **Shareholder Friendly Governance & Ongoing Board Refreshment**
- **Enabling Greater Automation**

**The IPG Advantage**