INVESTOR PRESENTATION
The 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.
PRODUCT ACROSS ALL INDUSTRIES are made better AND at lower cost with IPG FIBER LASERS
Revolutionizing the Laser Industry

Traditional Lasers

- Expensive
- Bulky
- Unreliable
- Difficult to Operate
- Inefficient
- Frequent Maintenance
- Costly Consumables
- Not scalable

Carbon Dioxide (CO₂)

Lamp-Pumped Nd: YAG

IPG Fiber Lasers

- Higher Productivity
- Compact
- Reliable
- Robust
- Efficient
- Minimal Maintenance
- No Consumables
- Scalable

20 & 30 Kilowatt (kW)
Continuous Wave (CW)

3 & 6 kW CW

5 & 23 kW Quasi CW

5 kW Nanosecond Pulsed & 100 W Picosecond Pulsed
Making our fiber laser technology the tool of choice in mass production
Key Takeaways

1. Global market leader in fiber laser technology across multiple end markets and applications

2. Vertical integration, manufacturing scale, and technology driving industry-leading margins

3. Expanding multi-billion dollar addressable market opportunity

4. Strong growth in earnings and cash flow
Dual Secular Growth Strategies

(1) Conversion from Non-Laser to Laser Technologies

Global Machine Tool Consumption in 2018: $81B
Global Cutting Laser Systems in 2018: ~$6B
*Laser Cutting Tools 6-7% of Worldwide Machine Tools & Growing*

![Graph showing conversion from non-laser to laser technologies]

Source: Oxford Economics, Optech Consulting and IPG Photonics Corporation

(2) Conversion from Traditional Lasers to Fiber Lasers

Fiber Lasers a Growing Percentage of Annual Demand for High-Power Industrial Laser Sources

![Graph showing conversion from traditional lasers to fiber lasers]

Source: Optech Consulting and IPG Photonics Corporation

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# Broadest Portfolio of Fiber Lasers

Any wavelength, mode of operation, power, beam quality or application

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>Mode of Operation</th>
<th>Power</th>
<th>Beam Quality</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Ray</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultraviolet</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Visible</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Near-Infrared</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Infrared</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Far-IR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Peak Power (Megawatts)

<table>
<thead>
<tr>
<th>Mode of Operation</th>
<th>Pulse Duration</th>
<th>Peak Power</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Wave</td>
<td>&lt;50 fs</td>
<td>&gt;20 MW</td>
<td>Thick steel cut with a continuous wave laser</td>
</tr>
<tr>
<td>Quasi-Continuous Wave</td>
<td>0.05-50 ms</td>
<td>23 kW</td>
<td>Drilling using a quasi-continuous wave laser</td>
</tr>
<tr>
<td>Nanosecond Pulsed</td>
<td>0.7-5 ns</td>
<td>1 MW</td>
<td>Surface Cleaning using a pulsed laser</td>
</tr>
<tr>
<td>Picosecond Pulsed</td>
<td>~2 ps</td>
<td>&gt;150 kW</td>
<td>Micromachining using an ultrafast laser</td>
</tr>
<tr>
<td>Femtosecond Pulsed</td>
<td>&lt;500 fs</td>
<td>&gt;20 MW</td>
<td></td>
</tr>
</tbody>
</table>

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Advantages of Our Fiber Lasers

- Monolithic Design
- Highest Power
- Record Power Efficiency
- Beam Quality
- MOPA Configuration
- Reliability
- Modular / Scalable Architecture
- Faster Processing Speed
- Lower Operating Costs
- Easy Systems Integration
- Small Footprint
- Efficient Cooling
Significant Barriers to Entry

Technology: IP & Process
Know-How

Business: Vertical Integration & Scale

Continuous Innovation
>350 Patents
>430 Pending

Vertically Integrated
Lowest-Cost Provider

Manufacturing, Distribution & Service Scale
Thousands of Lasers Shipped Each Quarter
IPGs Vertical Integration

INTEGRATED SYSTEMS
Welding | Cladding
Drilling | Ablation

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

Laser Diode Packaging
Over 200 watts of output power from 100 μm core fiber

Optical Preform
Silica based glass
MCVD method
Dope with rare earth ions

Components
Bragg Gratings | Isolators | Couplers

Process Heads and Switches
All fiber beam delivery

Laser Sources
Coupling | Final burn in | Shipment

Modules
Up to 2000 Watts

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Highest Volume, Lowest Cost Diode Producer

Source: IPG Photonics Corporation
Global Presence

**Oxford & Marlborough, MA, USA**
- Wafer fab operation, chip-on-submount assembly, wafer packaging, components and final assembly
- ~2,000 employees

**Fryazino, Russia**
- Components and final assembly
- ~1,700 employees

**Burbach, Germany**
- Components and final assembly
- ~1,300 employees

**Sales by Region, 2018**
- China: 43%
- Russia: 25%
- Germany: 8%
- Other Europe: 20%
- Other Asia: 15%
- RoW: 0%
- US: 14%

**Current Employees**
- 6,231

**Manufacturing**
- 73%

**G&A**
- 7%

**Sales**
- 5%

**R&D**
- 11%

**Contractors**
- 4%

**US**
- 14%

**Germany**
- 8%

**Russia**
- 25%

**China**
- 20%

**Other Asia**
- 15%

**RoW**
- 0%

**Other Europe**
- 20%

**Other Asia**
- 15%

**Other**
- 6%

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Total Addressable Market

Estimated $7B Market in 2018

- Industrial Lasers $2.8B
- New Laser Applications $4.4B

Source: Optech Consulting, Strategies Unlimited and IPG Photonics Corporation
Industrial Laser Market

Source: Optech Consulting, Strategies Unlimited and IPG Photonics Corporation

Fiber Lasers
63% Market Share in 2018

CO₂, Solid State and Diode Lasers

Additive Manufacturing
Marking and Engraving
Fine Metal Processing
High-Power Cutting and Welding

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New Laser Applications

Source: Strategies Unlimited and IPG Photonics Corporation
Solid Growth and Industry-Leading Margins

- **Revenue ($ Millions)**
  - 2013: $648
  - 2014: $700
  - 2015: $750
  - 2016: $800
  - 2017: $1,460
  - 2018: $1,500

- **Operating Margin**
  - 2013: 34%
  - 2014: 34%
  - 2015: 36%
  - 2016: 36%
  - 2017: 36%
  - 2018: 36%
Free Cash Flow

<table>
<thead>
<tr>
<th>Year</th>
<th>Free Cash Flow ($ Millions)</th>
<th>Capex ($ Millions)</th>
<th>Total ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>48</td>
<td>23</td>
<td>71</td>
</tr>
<tr>
<td>2014</td>
<td>100</td>
<td>160</td>
<td>260</td>
</tr>
<tr>
<td>2015</td>
<td>150</td>
<td>160</td>
<td>310</td>
</tr>
<tr>
<td>2016</td>
<td>200</td>
<td>160</td>
<td>360</td>
</tr>
<tr>
<td>2017</td>
<td>250</td>
<td>160</td>
<td>410</td>
</tr>
<tr>
<td>2018</td>
<td>300</td>
<td>160</td>
<td>460</td>
</tr>
</tbody>
</table>
Return Profile

Return on Equity  
Return on Invested Capital, Excluding Cash

2013 2014 2015 2016 2017 2018

19% 36% 36% 19%
## Target Business Model

<table>
<thead>
<tr>
<th>GAAP Metrics</th>
<th>2012-16</th>
<th>2017</th>
<th>2018</th>
<th>Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue Growth</strong></td>
<td>16% CAGR</td>
<td>40%</td>
<td>4%</td>
<td>Double Digit Growth *</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>54% Average</td>
<td>57%</td>
<td>55%</td>
<td>50%-55% *</td>
</tr>
<tr>
<td><strong>Operating Margin</strong></td>
<td>36% Average</td>
<td>39%</td>
<td>36%</td>
<td>32%-37% *</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.
Thank You

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