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.
Revolutionizing the Laser Industry

**Traditional Lasers**
- Carbon Dioxide (CO₂)
- Expensive
- Bulky
- Unreliable
- Difficult to Operate

**IPG Fiber Lasers**
- Higher Productivity
- Compact
- Reliable
- Robust

- 15 kilowatt Continuous Wave
- 2 kilowatt Continuous Wave
- Picosecond Pulsed

- Efficient
- Minimal Maintenance
- No Consumables
- Scalable
Our Mission

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. Rapidly growing earnings and cash flow
Dual Secular Growth Strategies

(1) Conversion from Non-Laser to Laser Technologies

Global Machine Tool Consumption in 2017: ~$78B
Laser Systems 18% of Worldwide Machine Tools and Growing

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

Source: Optech Consulting and IPG Photonics Corporation
Broadest Portfolio of Fiber Lasers

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

<table>
<thead>
<tr>
<th>X-Ray</th>
<th>Ultraviolet</th>
<th>Visible</th>
<th>Near-Infrared</th>
<th>1.5 μm</th>
<th>Mid-Infrared</th>
<th>Far-IR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UV Lasers</td>
<td>Blue, Green, Yellow, Orange, Red Lasers</td>
<td>Ytterbium Lasers</td>
<td>Erbium Lasers</td>
<td>Thulium Lasers</td>
<td>Cr:Zn/Se/Se Lasers</td>
</tr>
</tbody>
</table>

**Peak Power (Megawatts)**

<table>
<thead>
<tr>
<th>Continuous Wave</th>
<th>Quasi-Continuous Wave</th>
<th>Nanosecond Pulsed</th>
<th>Nanosecond Pulsed</th>
<th>Picosecond Pulsed</th>
<th>Femtosecond Pulsed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughput</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precision</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Peak Power:**

- **Continuous Wave**: 120kW
- **Quasi-Continuous Wave**: 23kW
- **Nanosecond Pulsed**: >150 kW
- **Picosecond Pulsed**: >10 MW
- **Femtosecond Pulsed**: >20 MW

**Applications:**

- Continuous Wave: cutting, welding, soldering, drilling, brazing
- Quasi-Continuous Wave: cutting, welding, soldering, drilling, brazing, annealing
- Nanosecond Pulsed: thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling, and scribing
- Picosecond Pulsed: black marking, sapphire and glass scribing, solar thin films, OLED film cutting, scientific
- Femtosecond Pulsed: thin metal cutting and drilling, ophthalmic surgery, high precision, scientific

- X-Ray: 10 nm
- Ultraviolet: 400 nm
- Visible: 700 nm
- Near-Infrared: 1.5 μm
- Mid-Infrared: 10 μm

- UV Lasers
- Blue, Green, Yellow, Orange, Red Lasers

- Ytterbium Lasers
- Erbium Lasers
- Thulium Lasers
- Cr:Zn/Se/Se Lasers

- 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

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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
- >270 Patents
- >420 Pending

Vertically Integrated
- Lowest-Cost Provider

Manufacturing, Distribution & Service Scale
- Thousands of Lasers Shipped Each Quarter
Highest Volume, Lowest Cost Diode Producer

Source: IPG Photonics Corporation

Tested Chip Production

Cost/Watt Decrease (2009 Base Year)

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, 2017**
- China 44%
- Other Asia 15%
- Other Europe 21%
- US 12%
- Germany 8%
- RoW 0%

**Global Presence by Region**
- US 37%
- Germany 23%
- Russia 30%
- China 44%
- Other Asia 15%
- Other Europe 21%
- US 12%
- Germany 8%
- RoW 0%

**Current Employees**
- Fryazino, Russia: 5,835 employees
- Burbach, Germany: 5,835 employees
- Oxford & Marlborough, MA, USA: 5,835 employees

**Facilities**
- Fryazino, Russia: 580,000 sq. ft., Clean Room Percent: 58%
- Burbach, Germany: 415,000 sq. ft., Clean Room Percent: 58%
- Oxford & Marlborough, MA, USA: 650,000 sq. ft., Clean Room Percent: 58%
Total Addressable Market

- Estimated $6.5B Market in 2017
- Industrial Lasers $2.6B
- New Laser Applications $3.9B

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

Source: Optech Consulting, Strategies Unlimited and IPG Photonics Corporation
Metal Cutting

- Installed Base of ~100,000 Laser Cutting Systems Worldwide
- Motion of CO$_2$, Solid State and Diode Lasers

Source: Optech Consulting and IPG Photonics Corporation
Metal Joining (Welding & Brazing)

Source: Optech Consulting, Freedonia Group and IPG Photonics Corporation
New Laser Applications

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

2018E based on reported results through the first nine months and the fourth quarter 2018 guidance midpoint.
Rapidly Growing Cash Flow
Return Profile

Return on Equity
Return on Invested Capital, Excluding Cash
## 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>Revenue Growth</td>
<td>16% CAGR</td>
<td>40%</td>
<td>1%-4%</td>
<td>Market Growth</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>54% Average</td>
<td>57%</td>
<td>50%-55%</td>
<td>50%-55%</td>
</tr>
<tr>
<td>Operating Margin</td>
<td>36% Average</td>
<td>39%</td>
<td>32%-37%</td>
<td>32%-37%</td>
</tr>
</tbody>
</table>