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

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

IPG Fiber Lasers

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

Carbon Dioxide (CO₂)

Lamp-Pumped Nd: YAG

15 kilowatt Continuous Wave

2 kilowatt Continuous Wave

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. 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>Mid-Infrared</th>
<th>Far-IR</th>
</tr>
</thead>
<tbody>
<tr>
<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/S Lasers</td>
</tr>
</tbody>
</table>

### Peak Power (Megawatts)

<table>
<thead>
<tr>
<th>Pulse Duration</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05-50 ms</td>
<td>Peak Power: 120 kW Applications: cutting, welding, soldering, drilling, brazing, annealing</td>
</tr>
<tr>
<td>1-200 ns</td>
<td>Peak Power: 23 kW Applications: cutting, welding, soldering, drilling, brazing, annealing</td>
</tr>
<tr>
<td>0.7-5 ns</td>
<td>Peak Power: 1 MW Applications: scribing, thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling and scribing</td>
</tr>
<tr>
<td>~2 ps</td>
<td>Peak Power: &gt;150 kW Applications: thin-film ablation, low-k and silicon dicing, glass scribing</td>
</tr>
<tr>
<td>&lt;500 fs</td>
<td>Peak Power: &gt;10 MW Applications: scribing, thin-film ablation, low-k and silicon dicing, glass scribing</td>
</tr>
<tr>
<td>0.05-50 ms</td>
<td>Peak Power: 120 kW Applications: cutting, welding, soldering, drilling, brazing, annealing</td>
</tr>
</tbody>
</table>

### Time

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

- **Throughput**
- **Precision**

**Peak Power:**
- 0.05-50 ms: 120 kW
- 1-200 ns: 23 kW
- 0.7-5 ns: 1 MW
- ~2 ps: >150 kW
- <500 fs: >10 MW
- 0.05-50 ms: 120 kW

**Applications:**
- 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
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)

Packaged Diode Costs % Chg.

Tested Chips Produced

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
- ~1,600 employees

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

Sales by Region, 2017
- China 44%
- Other Asia 15%
- US 12%
- Germany 8%
- Other Europe 21%

US 37%
China 30%
Russia 30%
Other Asia 15%
Other Europe 21%

Current Employees
5,780
- Oxford & Marlborough, MA, USA
- Fryazino, Russia
- Burbach, Germany

Manufacturing 73%
R&D 10%
G&A 6%
Sales 5%

650,000 sq. ft.
415,000 sq. ft.
580,000 sq. ft.

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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

Source: Optech Consulting and IPG Photonics Corporation

Installed Base of ~100,000 Laser Cutting Systems Worldwide
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

- Revenue ($ Millions):
  - 2012: $563
  - 2013: $600
  - 2014: $900
  - 2015: $1,200
  - 2016: $1,200
  - 2017: $1,409

- Operating Margin:
  - 2012: 37%
  - 2013: 37%
  - 2014: 37%
  - 2015: 39%
  - 2016: 39%
  - 2017: 39%
Rapidly Growing Cash Flow

- **2012**: $68
- **2013**: $107
- **2014**: $127
- **2015**: $278
- **2016**: $50
- **2017**: $127

**Free Cash Flow**

**Capex**
Return Profile

- **Return on Equity**
  - 2012: 24%
  - 2013: 20%
  - 2014: 20%
  - 2015: 19%
  - 2016: 19%
  - 2017: 19%

- **Return on Invested Capital, Excluding Cash**
  - 2012: 43%
  - 2013: 35%
  - 2014: 35%
  - 2015: 40%
  - 2016: 40%
  - 2017: 40%
# 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>7%-9%</td>
<td>Market Growth</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>54% Average</td>
<td>57%</td>
<td>50%-55%</td>
<td>50%-55%</td>
</tr>
<tr>
<td><strong>Operating Margin</strong></td>
<td>36% Average</td>
<td>39%</td>
<td>32%-37%</td>
<td>32%-37%</td>
</tr>
</tbody>
</table>