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.
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>Peak Power (Megawatts)</th>
<th>Throughput</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Wave</td>
<td>Peak Power: 120kW</td>
<td>cutting, welding, scribing, thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling and scribing</td>
</tr>
<tr>
<td>Quasi-Continuous Wave</td>
<td>Peak Power: 23kW</td>
<td>cutting, welding, soldering, drilling, brazing, annealing</td>
</tr>
<tr>
<td>Nanosecond Pulsed</td>
<td>Pulse Rate: 0.05-50 ns</td>
<td>thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling and scribing</td>
</tr>
<tr>
<td>Nanosecond Pulsed</td>
<td>Pulse Rate: 1-200 ns</td>
<td>thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling and scribing</td>
</tr>
<tr>
<td>Picosecond Pulsed</td>
<td>Pulse Rate: 0.7-5 ns</td>
<td>thin-film ablation, low-k and silicon dicing, glass scribing</td>
</tr>
<tr>
<td>Femtosecond Pulsed</td>
<td>Pulse Rate: ~2 ps</td>
<td>thin-film ablation, low-k and silicon dicing, glass scribing</td>
</tr>
<tr>
<td></td>
<td>Pulse Rate: &lt;500 fs</td>
<td>high precision, scientific</td>
</tr>
</tbody>
</table>

Peak Power: 1.5 μm
Applications: Holmium Lasers

Peak Power: 10 μm
Applications: Fe:ZnSe/S Lasers

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

X-Ray
EUV Lasers

Ultraviolet
Excimer Lasers

Visible
UV Lasers

Near-Infrared
Blue, Green, Yellow, Orange, Red Lasers

Diode Lasers

Mid-Infrared
Ytterbium Lasers

Thulium Lasers

Cr:Zn/Se/S Lasers

Far-IR

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

![Graph showing tested chip production and cost/watt decrease from 2009 to 2017.](Image)

- Tested Chip Production
- Cost/Watt Decrease (2009 Base Year)

Source: IPG Photonics Corporation

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Global Presence

Oxford & Marlborough, MA, USA
- Wafer fab operation, chip-on-submount assembly, wafer packaging, components and final assembly
- ~2,000 employees
  - 650,000 sq. ft.

Burbach, Germany
- Components and final assembly
- ~1,600 employees
  - 415,000 sq. ft.

Fryazino, Russia
- Components and final assembly
- ~1,600 employees
  - 580,000 sq. ft.

US
- 38%

Germany
- 24%

Russia
- 29%

China
- 44%

Other Asia
- 15%

Other Europe
- 21%

Other
- 12%

Clean Room Percent
-

Sales by Region, 2017

5,389 Current Employees

Manufacturing 72%

R&D 10%

G&A 6%

Sales 5%

Contractors 7%

Current Employees

US
- 580,000

Germany
- 415,000

Russia
- 580,000

China
- 580,000

Other Asia
- 580,000

Other Europe
- 580,000

RoW
- 580,000

Clean Room Percent
-
Total Addressable Market

Estimated $6.5B Market in 2017

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

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

**Fiber Lasers**

- 62% Market Share in 2017

**CO₂, Solid State and Diode Lasers**

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

CO₂ & Other

Fiber Lasers

CO₂, Solid State and Diode Lasers

$0B $1B $2B $3B

Metal Joining (Welding & Brazing)

Traditional Welding Equipment, $4.6B

Laser Welding $0.7B

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

Rapidly Growing Cash Flow

2012 2013 2014 2015 2016 2017

$ Millions

Free Cash Flow  Capex

2012: $68  $107
2013: $107  
2014: $107  
2015: $127  
2016: $278  
2017: $127  $278
Return Profile

Return on Equity
Return on Invested Capital, Excluding Cash

2012: 24%
2013: 20%
2014: 19%
2015: 43%
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>Revenue Growth</td>
<td>16% CAGR</td>
<td>40%</td>
<td>10%-15%</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>