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.
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>10 nm</th>
<th>Ultraviolet</th>
<th>400 nm</th>
<th>Visible</th>
<th>700 nm</th>
<th>Diode Lasers</th>
<th>1.5 μm</th>
<th>Holmium Lasers</th>
<th>Fe:ZnSe/S Lasers</th>
<th>10 μm</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Ray</td>
<td>UV Lasers</td>
<td></td>
<td>Blue, Green, Yellow, Orange, Red Lasers</td>
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<tr>
<td>Near-Infrared</td>
<td>Ytterbium Lasers</td>
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<tr>
<td>Mid-Infrared</td>
<td>Erbium Lasers</td>
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<tr>
<td>Mid-Infrared</td>
<td>Thulium Lasers</td>
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<tr>
<td>Far-IR</td>
<td>Cr:Zn/Se/S Lasers</td>
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</tbody>
</table>

**Peak Power (Megawatts)**

- **Peak Power: 120kW**
  - Pulse Duration: 0.05-50 ms
  - Applications: cutting, welding, soldering, drilling, brazing, annealing

- **Peak Power: 23kW**
  - Pulse Duration: 1-200 ns
  - Applications: thin-film ablation, via drilling and flex cutting, surface preparation, texturing, annealing, marking, drilling and scribing

- **Peak Power: 1 MW**
  - Pulse Duration: 0.7-5 ns
  - Applications: thin-film ablation, low-k and silicon dicing, glass scribing

- **Peak Power: >150 kW**
  - Pulse Duration: >2 ps
  - Applications: black marking, sapphire and glass scribing, solar thin films, OLED film cutting, scientific

- **Peak Power: >10 MW**
  - Pulse Duration: <500 fs
  - Applications: thin metal cutting and drilling, ophthalmic surgery, high precision, scientific

**Applications:**
- The Power to Transform®

---

- **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
- Manufacturing, Distribution & Service Scale

Continuous Innovation

- >270 Patents
- >420 Pending

Vertically Integrated

Lowest-Cost Provider

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%
- US: 12%
- Germany: 8%
- Other Europe: 21%
- Other Asia: 15%

5,537 Current Employees
- US: 37%
- Russia: 30%
- China: 24%
- Other Asia: 15%
- Other Europe: 21%
- Other: 0%

Manufacturing: 74%
R&D: 10%
Sales: 4%
G&A: 6%
Contractors: 6%
Clean Room Percent:
- Fryazino, Russia: 580,000 sq. ft.
- Burbach, Germany: 415,000 sq. ft.
- Oxford & Marlborough: 650,000 sq. ft.

Current Employees:
- Fryazino, Russia: 5,537
- Burbach, Germany: 5,537
- Oxford & Marlborough, MA, USA: 5,537

Regions and Sales:
- US: 37%
- Germany: 24%
- Russia: 30%
- China: 4%
- Other: 5%
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)

Traditional Welding Equipment, $4.6B

Laser Welding $0.7B

Annual Demand For Welding Equipment Globally

$0M
$200M
$400M
$600M
$800M


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

- Operating Margin: 37% in 2012, 39% in 2017

Graph showing revenue and operating margin from 2012 to 2017.
Rapidly Growing Cash Flow

$ Millions

2012
$68
$107

2013

2014

2015

2016
$278
$127

2017

Free Cash Flow

Capex
Return Profile

Year | Return on Equity | Return on Invested Capital, Excluding Cash
--- | --- | ---
2012 | 24% | 43%
2013 | 20% | 35%
2014 | 20% | 38%
2015 | 20% | 40%
2016 | 19% | 40%
2017 | 19% | 40%

Return Profile

IPG Photonics

Power to Transform®
## 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>
Thank You

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