

# **Photronics, Inc.**

## **Global Leader in the Merchant Photomask Industry**

**Investor Presentation**  
**Q3 2019**

# Safe Harbor Statement

This presentation and some of our comments may contain projections or other forward-looking statements regarding future events, our future financial performance, and/or the future performance of the industry. These statements are predictions, and contain risks and uncertainties. Actual events or results may differ materially from those presented. These statements include words like “anticipate”, “believe”, “estimate”, “expect”, “forecast”, “may”, “plan”, “project” or the negative thereto. We cannot guarantee the accuracy of any forecasts or estimates, and we are not obligated to update any forward-looking statements if our expectations change. If you would like more information on the risks involved in forward-looking statements, please see the documents we file from time to time with the Securities and Exchange Commission.

## **Non-GAAP Financial Measures**

This presentation and some of our comments may reference non-GAAP financial measures. These non-GAAP financial measures exclude certain income or expense items, and are consistent with another way management internally analyzes our results of operations. Non-GAAP information should be considered to be a supplement to, and not a substitute for, financial statements prepared in accordance with GAAP. Please see the “Reconciliation of GAAP to Non-GAAP Financial Information” in this presentation.

# A Compelling Investment Thesis

## ▶ Global leader in merchant photomask industry

- *Delivering growth by leveraging core competencies: Operational Excellence, Low Cost Producer, Technology Leadership, Customer Intimacy*

## ▶ Investing aggressively to exploit secular growth opportunities

- *China industry expansion – Made in China 2025*
- *Technology inflection from LCD to AMOLED*
- *Explosion of G10.5+ panel capacity*

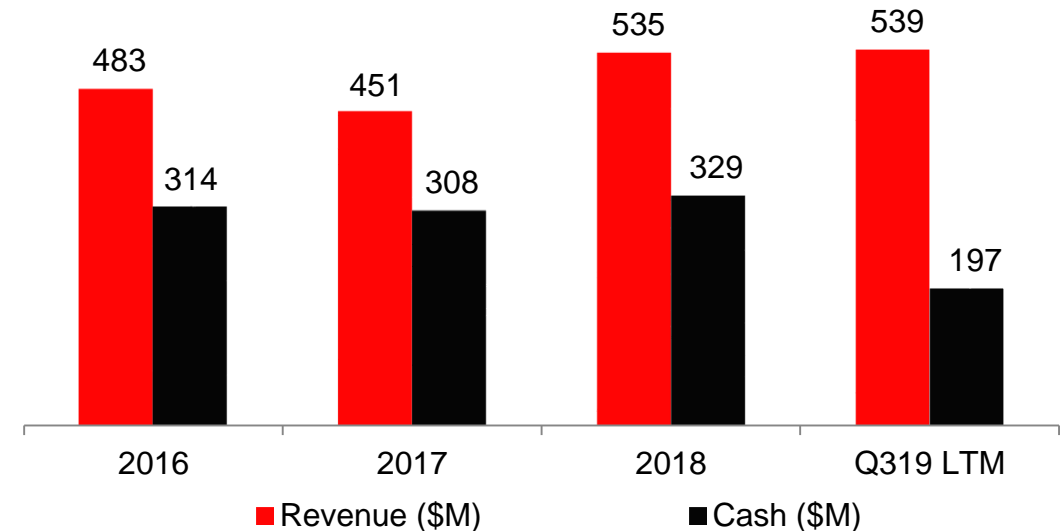
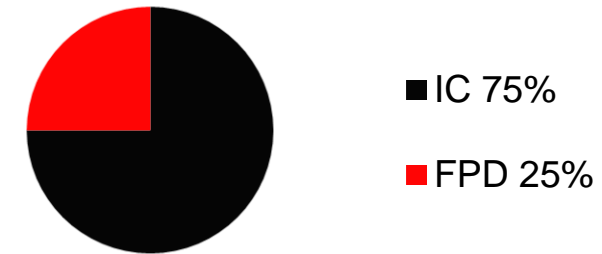
## ▶ On track for 2020 target: \$630M revenue & \$0.80 EPS

- *Strategic investments bring top-line growth*
- *Operating leverage creates margin expansion*
- *Increasing free cash flow to fund growth investments*
- *Lingering macro and growing geopolitical headwinds*

# Photronics at a Glance

- ▶ Largest merchant photomask manufacturer
- ▶ Unmatched global footprint
- ▶ Investing to exploit market disruptions with reciprocal customer commitments
- ▶ Strong balance sheet to fund growth

Q3 2019 LTM Revenue by Product



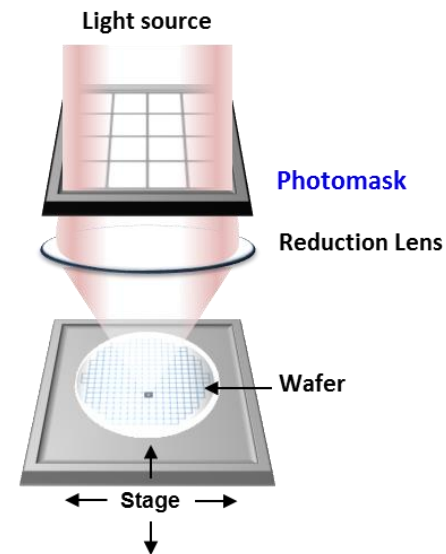
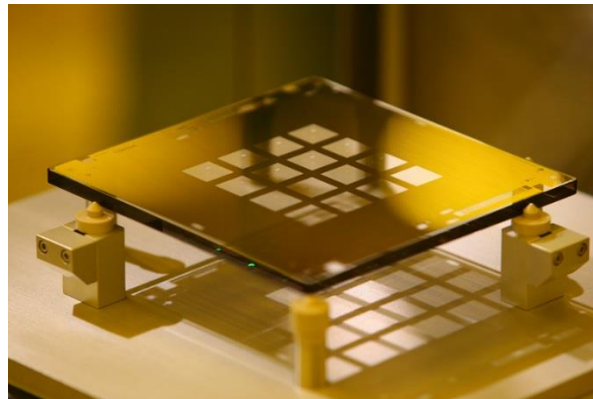
# Photomasks are Critical to Electronic Manufacturing

Component  
Design

Photomask

Manufacturing  
Process

End  
User



# Core Competencies Underpin Sustainable Growth

**Low Cost Producer**

**Cost control  
Supply chain optimization**

**Operational Excellence**

**Flexible delivery  
High yields**

**Customer Intimacy**

**Trusted partner  
Wafer yield enhancement**

**Technology Leader**

**Process know-how  
Advanced PoR**

# Repositioned for Growth

## ► China

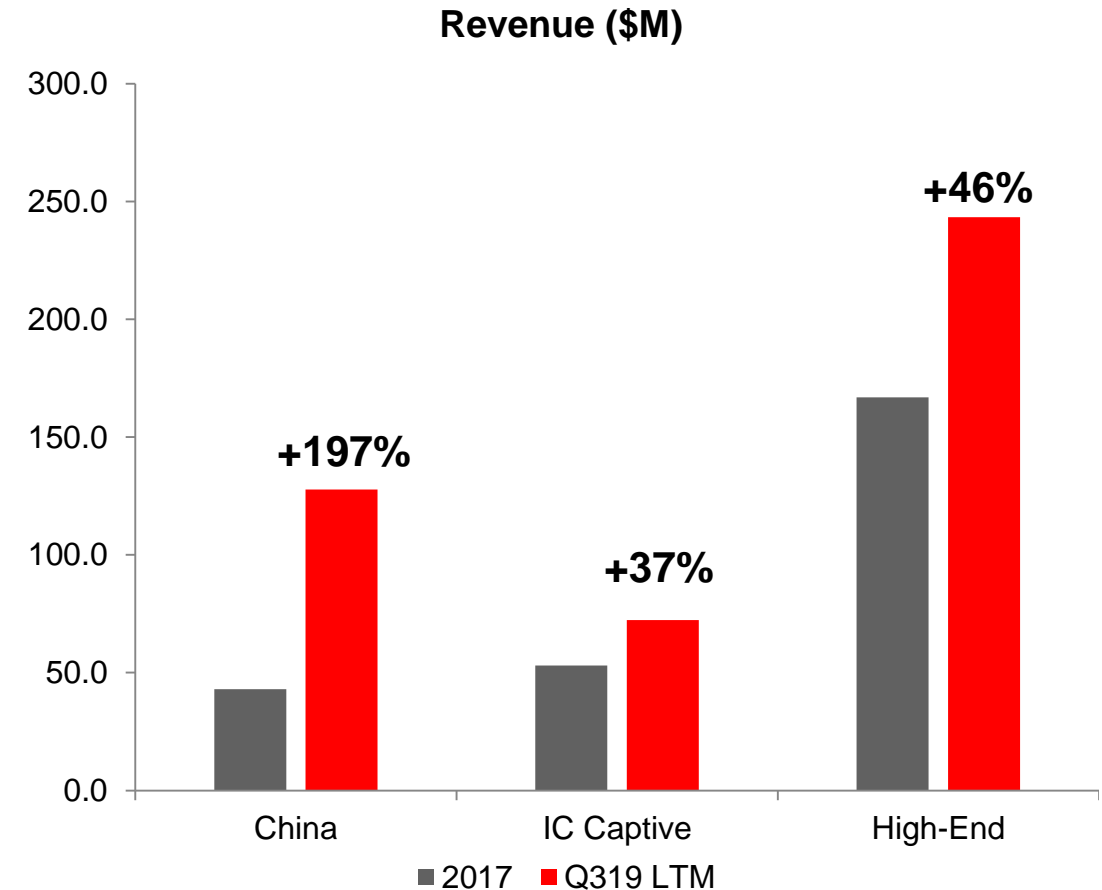
- Total TAM ~\$700M by 2022
- Region with strongest growth potential
- Supported by new manufacturing facilities in 2019

## ► IC Captive

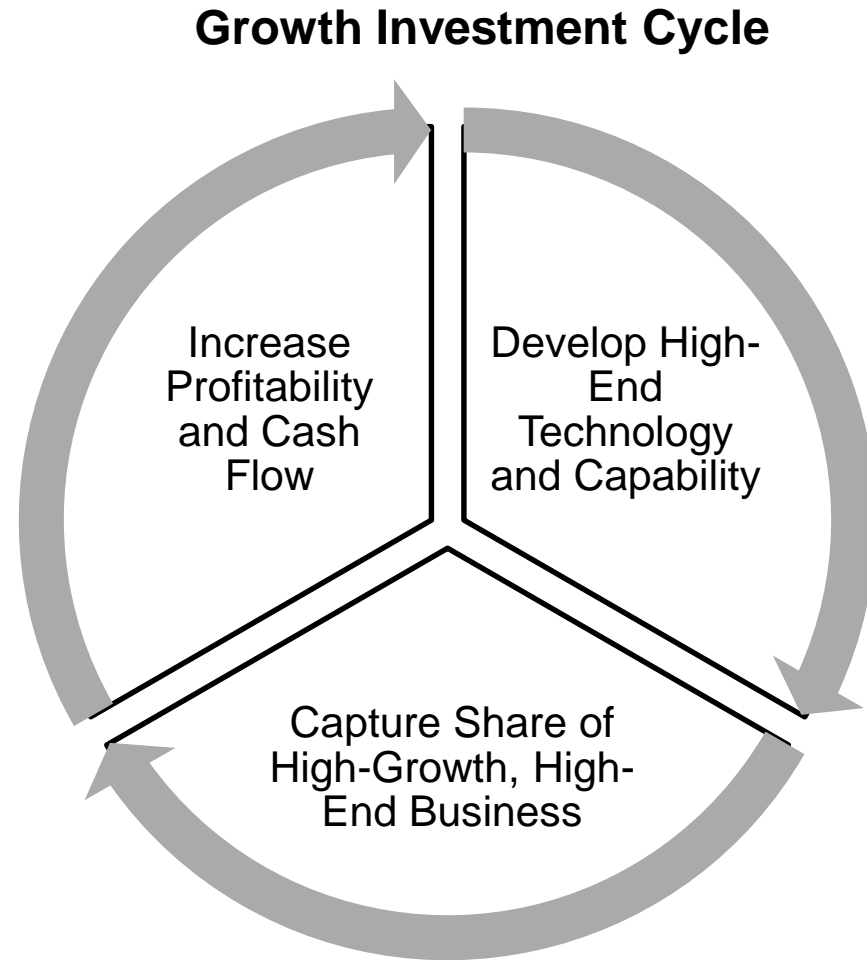
- Approximately \$2.6B TAM
- We are seen as trusted partner
- Commitments strengthen sustainability

## ► High-end revenue growth

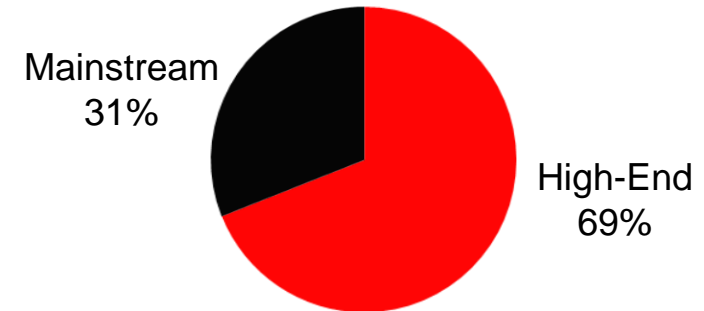
- High value and high growth
- Supports China & captive initiatives



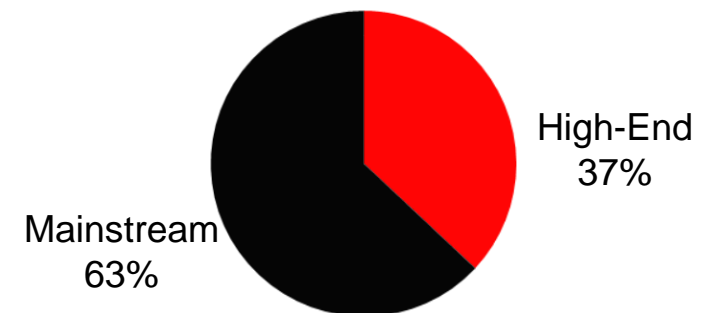
# Technology as a Tool to Support Business Growth



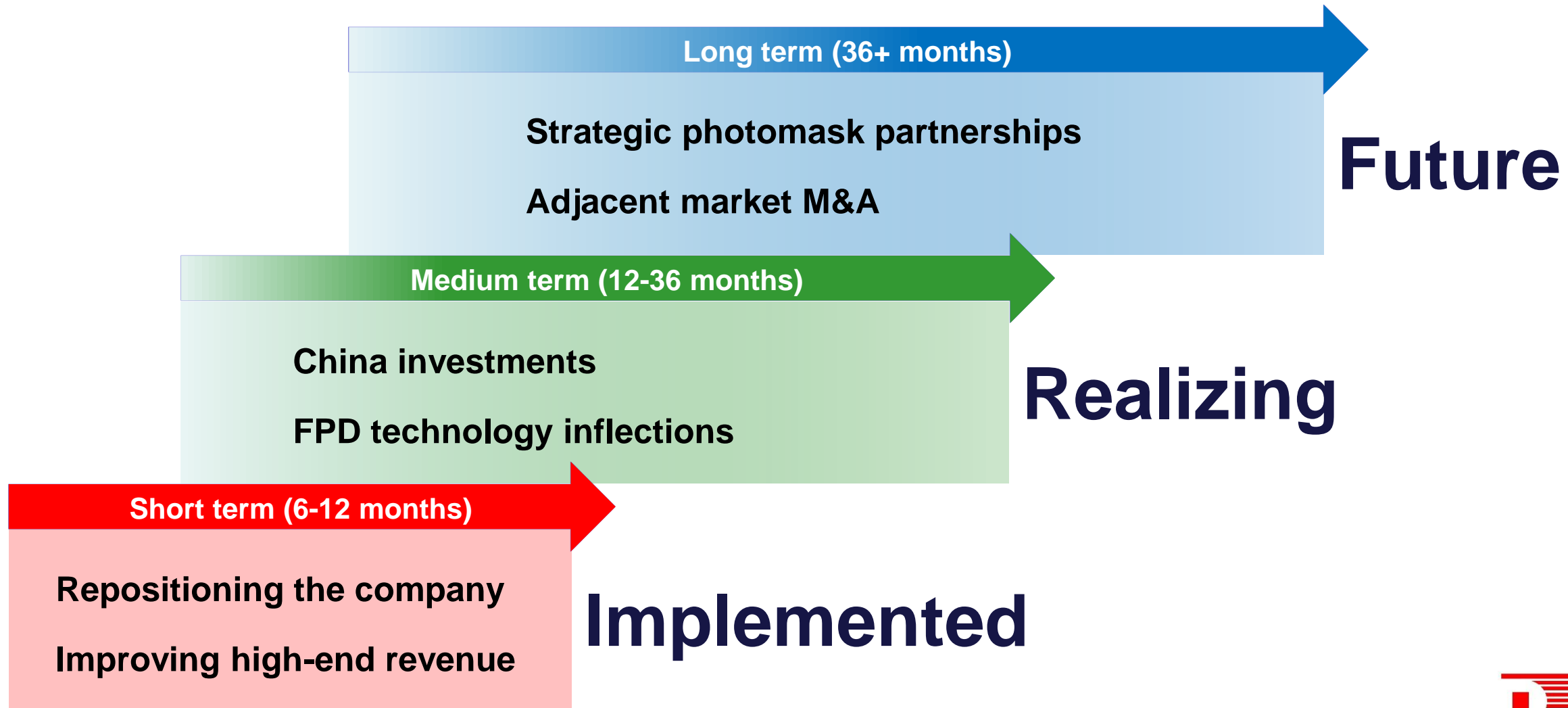
**Q3 2019 LTM FPD Revenue \$134.5M**



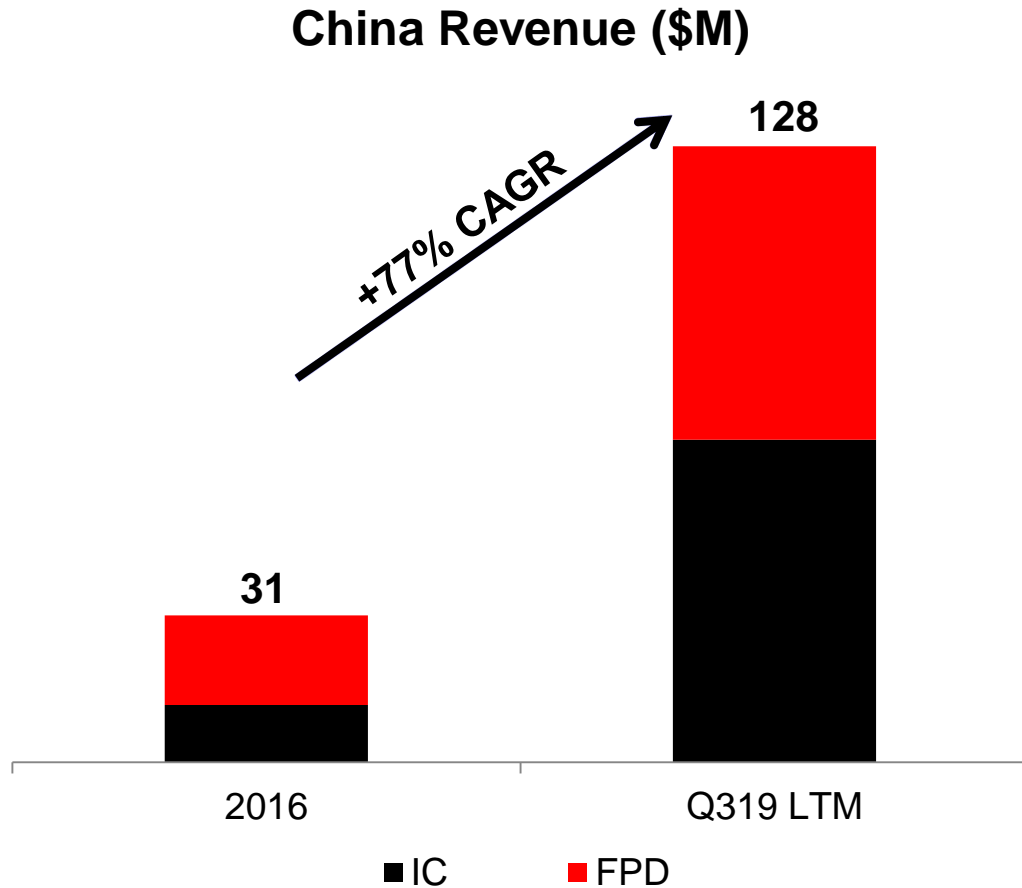
**Q3 2019 LTM IC Revenue \$404.5M**



# Driving Sustainable, Profitable Growth



# Developing and Growing China Business



## ▶ We already have growing business in China

- 24% of total revenue in Q319 LTM
  - 17% of IC revenue
  - 45% of FPD revenue
- Growing strong since 2016
  - IC +100% CAGR
  - FPD +61% CAGR

## ▶ Manufacturing presence in China aims to accelerate growth

- Customer contracts help ramp facilities more quickly
- Investment incentives reduce risk and improve returns
- IC JV enables us to compete more effectively

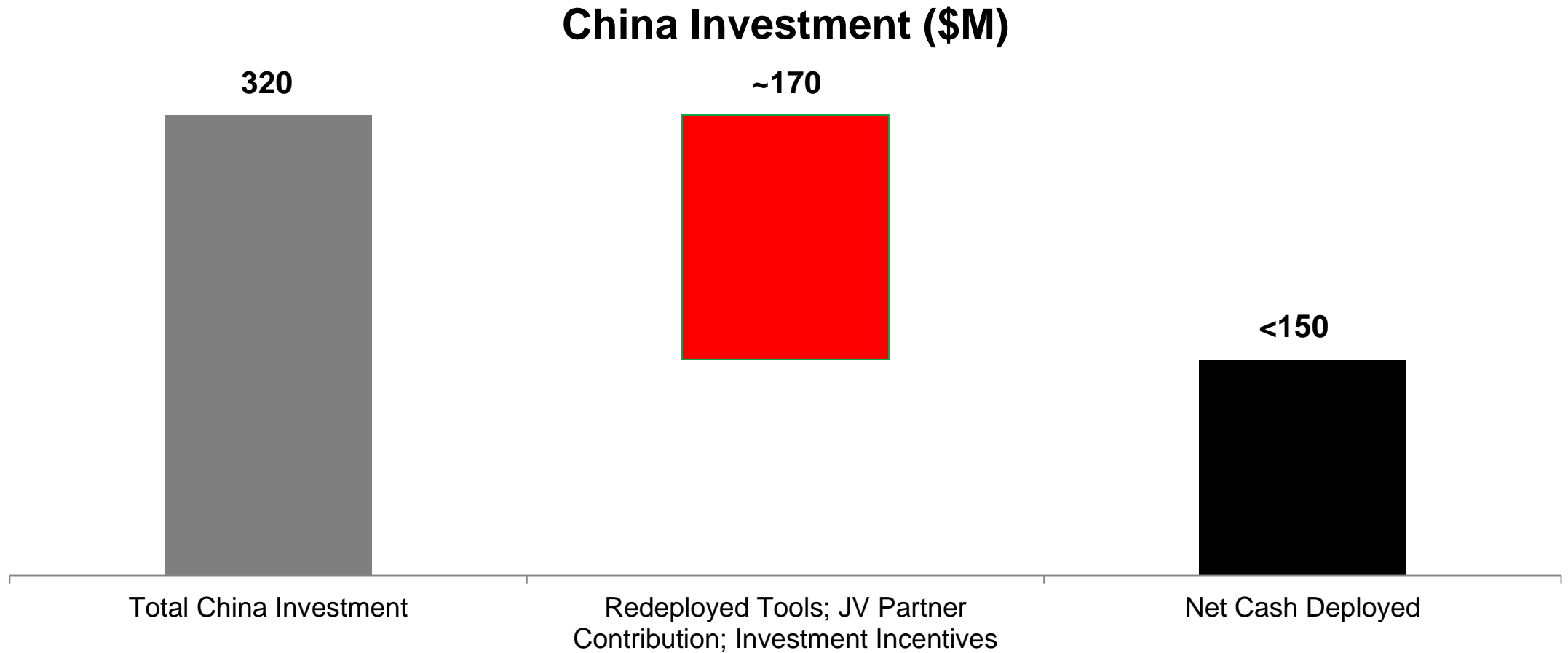
# Investing in China Operations

	IC	FPD
<b>Location</b>	Xiamen	Hefei
<b>Investment Amount</b>	\$160M	\$160M
<b>Cleanroom Size</b>	~2,500 m <sup>2</sup>	~4,500 m <sup>2</sup>
<b>Ownership Structure</b>	Majority-owned (50.01%) JV	Wholly-owned
<b>Technology</b>	High-end, mainstream, logic, memory	Up to G10.5+, AMOLED
<b>Incremental Revenue</b>	\$150M (total for both operations; ~1/3 IC and ~2/3 FPD)	

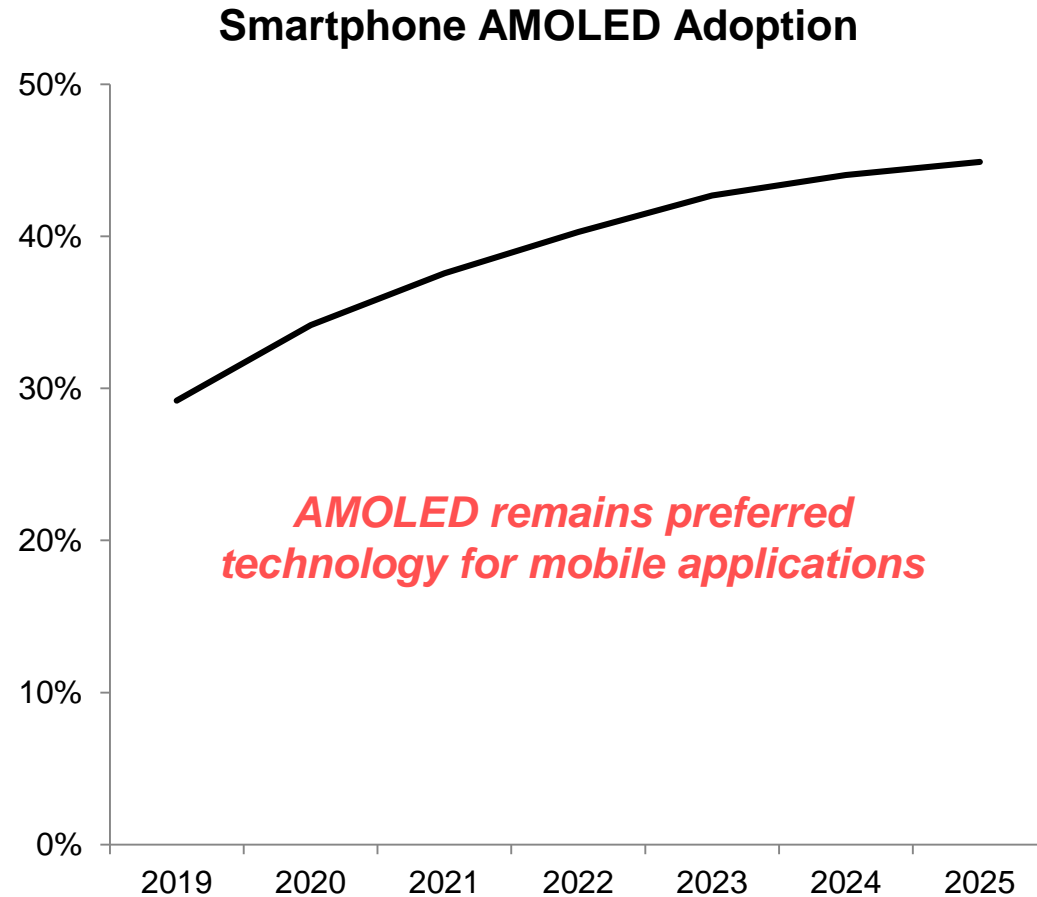
Customer commitments totaling ~\$400M through 2021  
Enables facilities to operate profitably

**PLAB well positioned for these investments**  
Global merchant market and technology leader  
Strong footprint in Asia  
Balance sheet to support investment

# Reducing Risk of China Investment



# Leveraging Technology Leadership for Mobile Display AMOLED Adoption



Source: Internal Estimates

## ▶ Mobile devices moving from LCD to AMOLED

- Superior visual characteristics
- Lower power consumption
- Enables flexible format
- Preferred for VR/AR devices

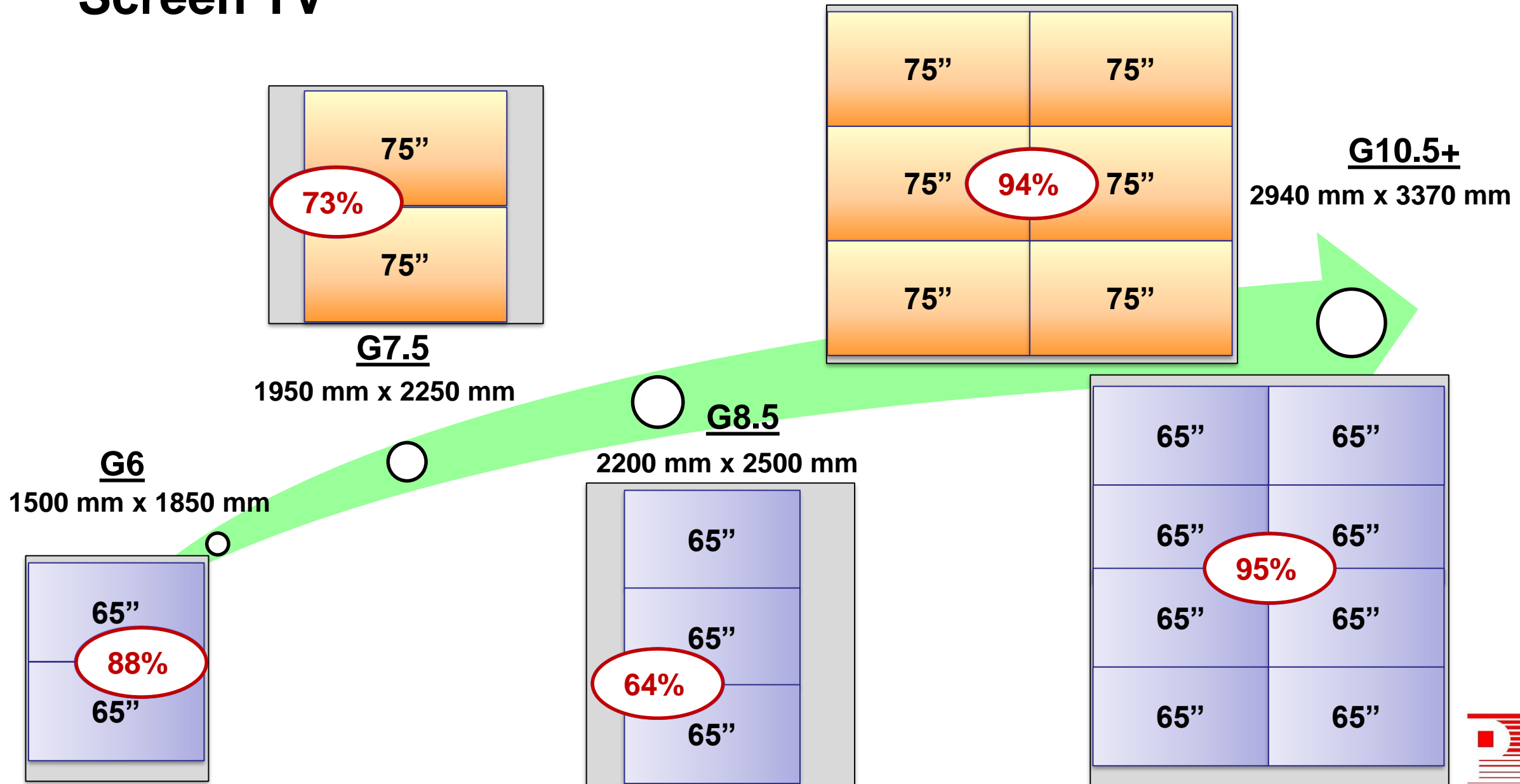
## ▶ Increases mask complexity

- More mask layers per set
- Tighter specs on each layer

## ▶ Established technology leadership

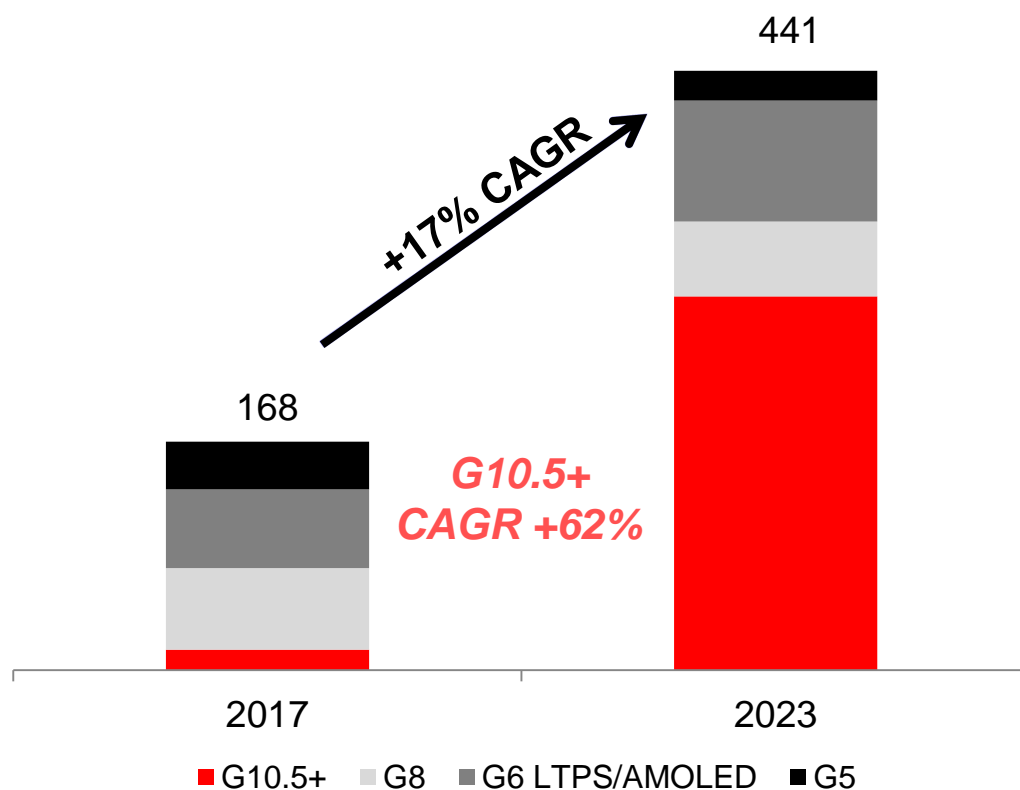
- 1<sup>st</sup> firm with this P-800 mask writer
- Produces highest resolution AMOLED masks
- Competitive advantage vs. all merchants and captives

# G10.5+ → Improved Glass Efficiency for Ultra-Large Screen TV



# “Made in China 2025” Driving Growth in FPD Market

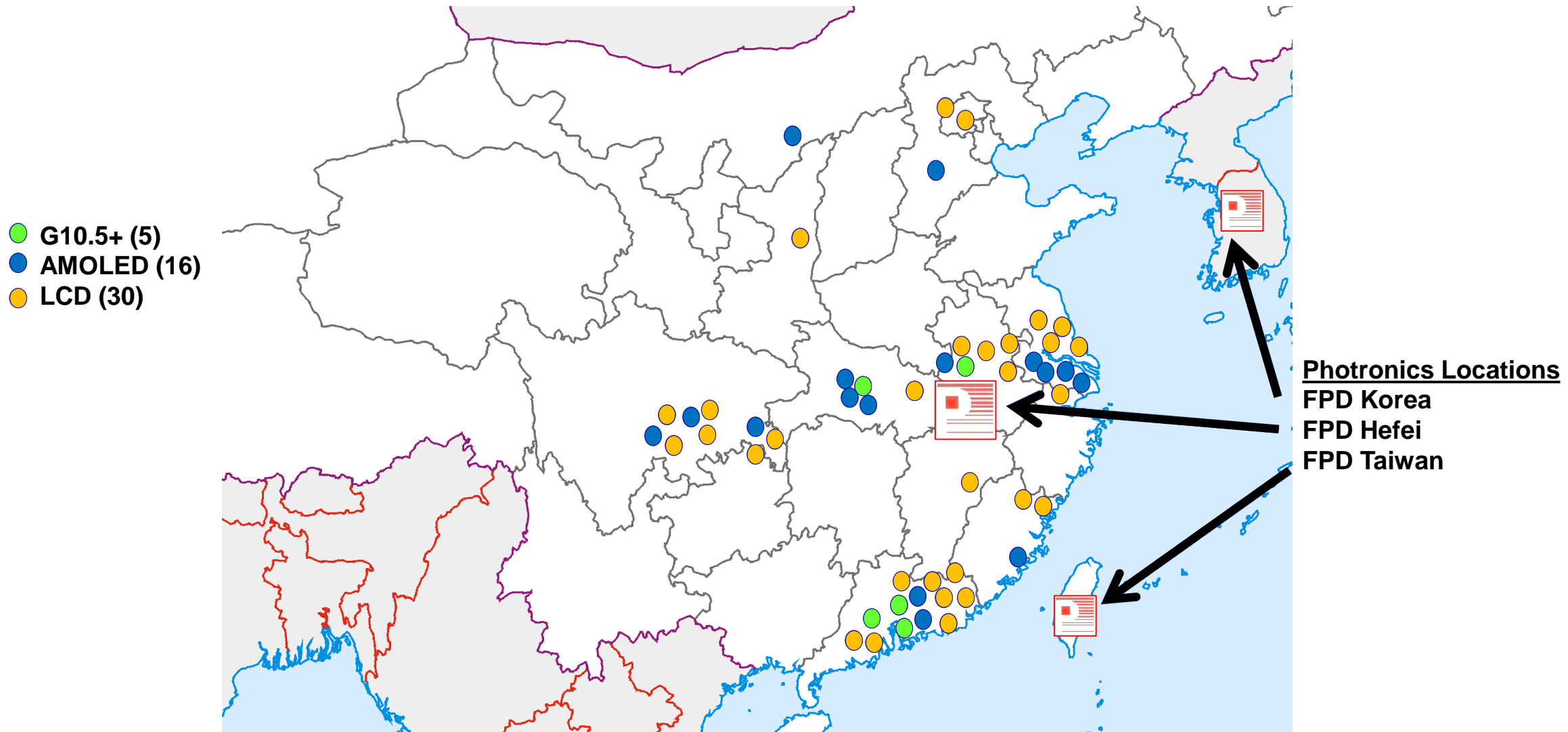
China FPD Mask Production (\$M)



Source: Internal Estimates

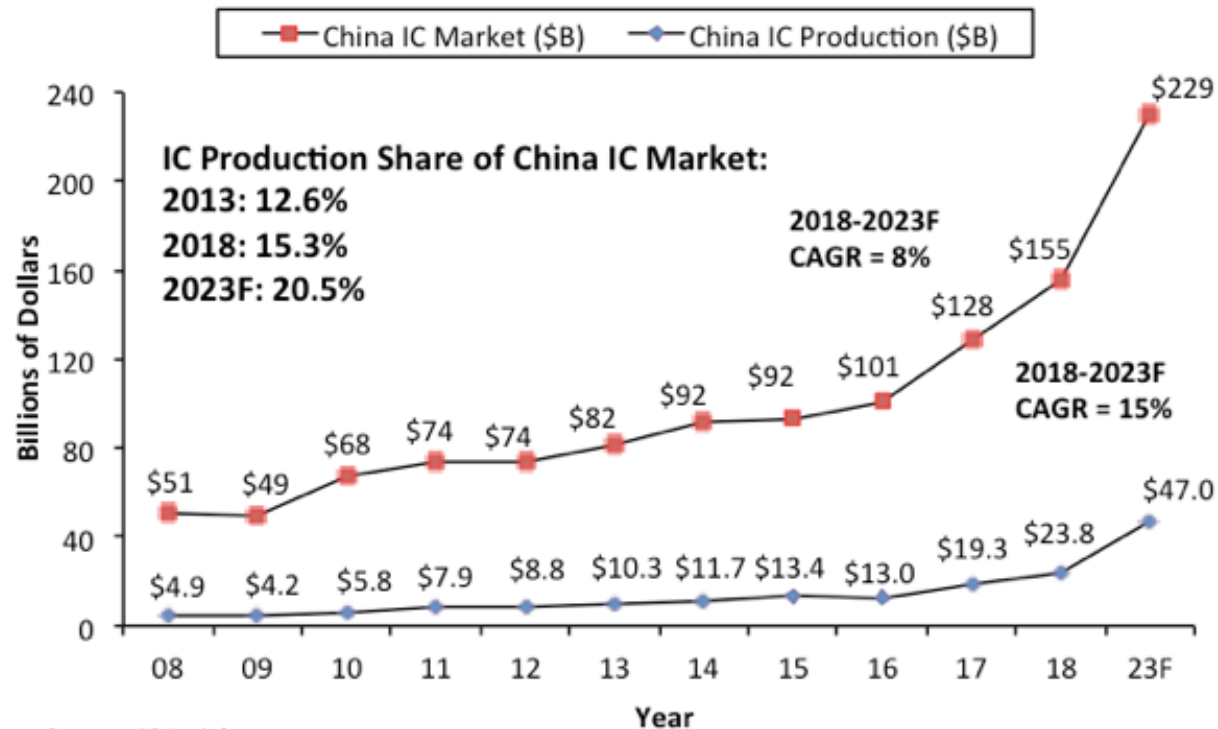
- ▶ **China represents fastest growing display region**
  - 51 fabs in production or under construction
  - Largest LCD display producer (Korea 2<sup>nd</sup>)
- ▶ **Photomask opportunities in China are attractive**
  - Wide range of display technology, including AMOLED & G10.5+
  - No merchant photomask producer with high-end experience
  - No G10.5+ photomask producer

# 51 China Display Fabs in Production by 2022



# “Made in China 2025” Driving Growth in IC Market

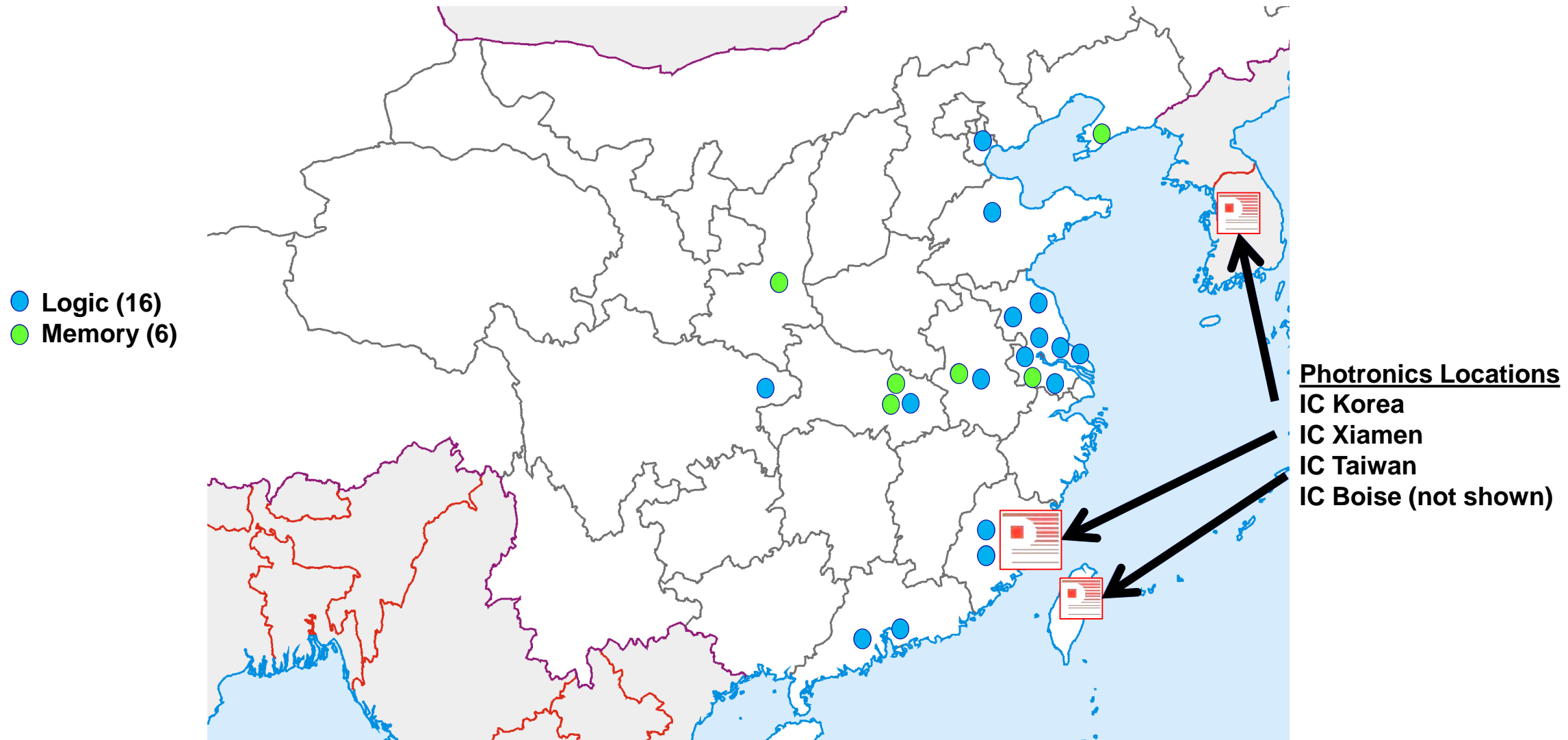
China IC Market vs. China IC Production Trends



Source: IC Insights

- ▶ **China represents fastest growing semiconductor region**
  - Growing domestic producers
  - Investments by multi-nationals
- ▶ **More investment needed to meet national targets**
  - 2023 forecast is 21%
  - China government target is 40% by 2020, 70% by 2025
- ▶ **Photomask opportunities in China are attractive**
  - Wide range of nodes in logic and memory
  - No strong domestic merchant mask producer

# 22 New China 12" IC Fabs



# Impact of US-China Trade Dispute

- ▶ **Some of our customers beginning to feel impact (Q319)**
- ▶ **Tariffs**
  - We do not ship, or plan to ship, any product from China to US
  - China counter-tariffs (product from US to China) have not yet been material
- ▶ **Technology**
  - Companies located in China recently added to the entity list do not have a material impact on our IC business at this time
  - FPD business is not currently impacted by recent restrictions
- ▶ **Due to dynamic and uncertain nature of ongoing dispute, future material impact cannot be ruled out**

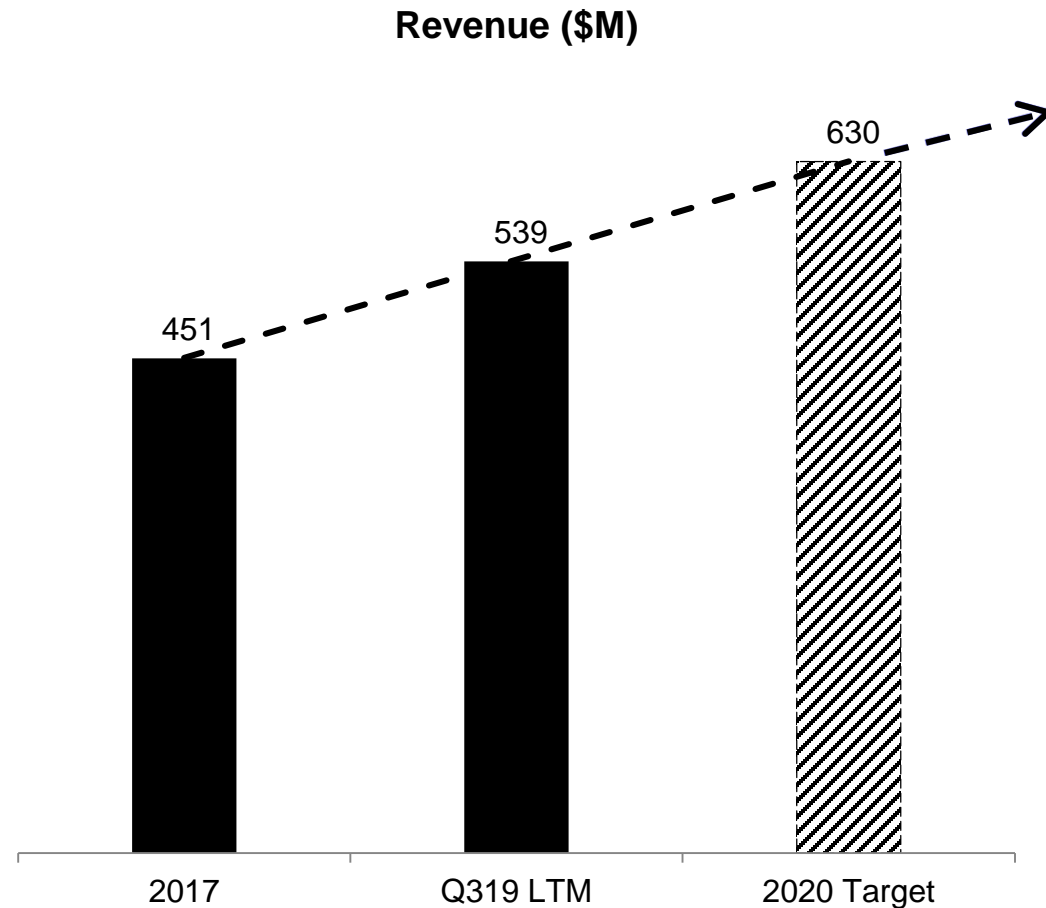
# Strategic Priorities to Improve Shareholder Value

- ▶ **Top line growth combined with continued focus on driving costs out**
- ▶ **Disciplined focus on investments to improve ROIC**
- ▶ **Maintain strong balance sheet while returning cash to shareholders**
  - Share repurchases
    - Have repurchased \$34M (3.7M shares) since July 2018
    - Announced new \$100M program in August 2019
  - Repaid \$57.5M of convertible debt April 2019 (eliminated 5.5M potentially dilutive shares)
  - Financial stability through economic downturn
  - Flexibility to invest in other growth opportunities (organic or M&A)

# Solid Financial Fundamentals

- ▶ **Powerful operating leverage: target 50%**
- ▶ **Strong operating cash flow generator**
- ▶ **Positive free cash flow every fiscal year since 2009**
- ▶ **Solid balance sheet**

# On Our Way to 2020 Target



## Key Success Factors

- ▶ “Made in China 2025” – new facilities
- ▶ FPD technology inflections
- ▶ Repositioning the company
- ▶ Node migration (logic & memory)
- ▶ Growing business with captive producers
- ▶ IC JV’s in China and Taiwan
- ▶ Stable mainstream business
- ▶ Cross-site collaboration to serve global customers

# Clear Capital Deployment Priorities

## ► Fund organic growth

- Geographic expansion into China
- Investments to maintain technical leadership
- Capacity expansion when reciprocated by customer commitment

## ► Explore strategic M&A

- Photomask industry – IC & FPD
- Adjacencies to increase revenue diversification

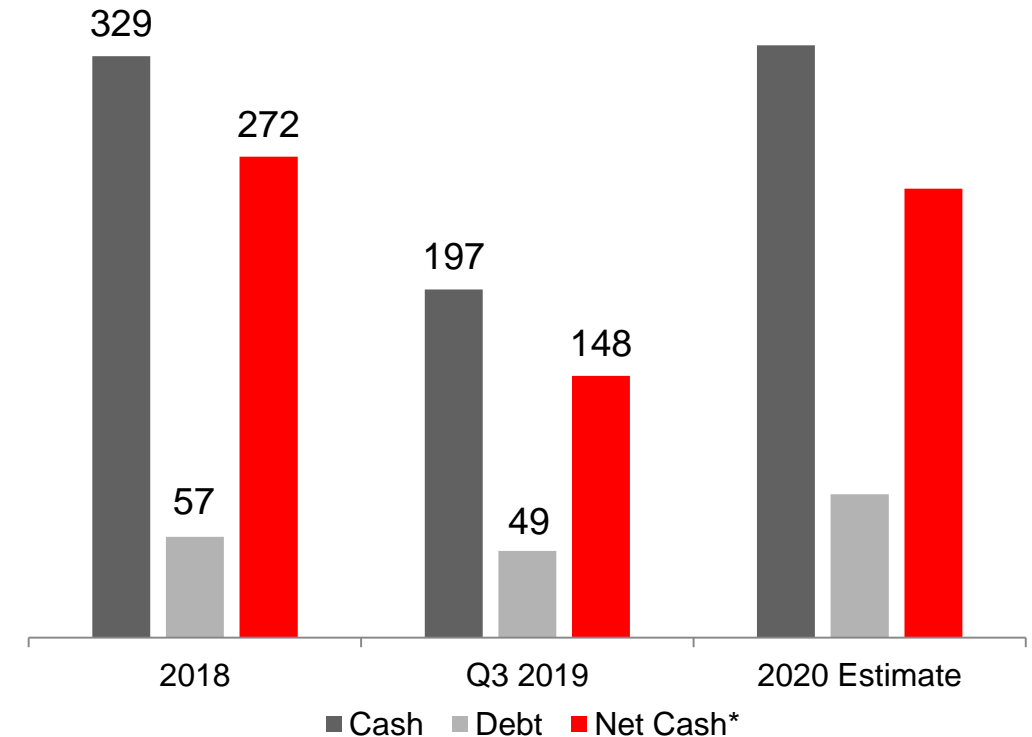
## ► Debt repayment

- Repaid converts (\$57.5M) in April 2019; removed 5.5M potentially dilutive shares
- Local interest-subsidized China borrowing; \$49M outstanding end of Q319

## ► Share repurchase

- Repurchased \$33.8M (3.7M shares) since July 2018
- Announced new \$100M program August 2019

Cash & Debt (\$M)



# Financial Summary

- ▶ **Clear path to accelerate profitable growth**
- ▶ **Prudent stewardship of balance sheet**
- ▶ **Financial model to grow income faster than revenue**
- ▶ **On track to achieve financial targets**
  - Revenue \$630M & EPS \$0.80 by 2020
  - Operating margin > 15%
  - Minimum \$100M net cash
  - Improve ROIC – no projects accepted below hurdle rate

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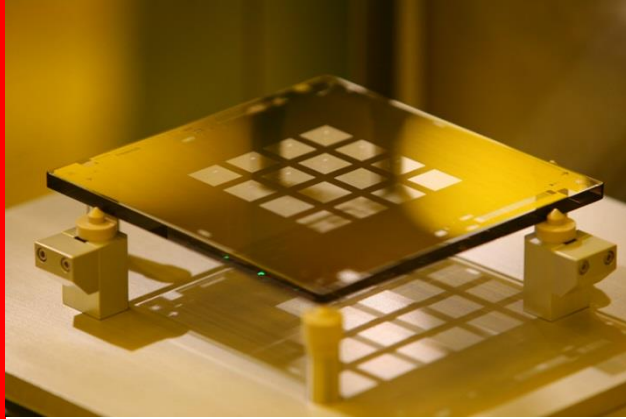
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# Thank you for your interest!

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