



**JABIL**  
OPTICS



# OPTICS EXPERTISE AT ITS BEST

EPIC Online Technology Meeting on  
**3D Sensing**

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Business Development  
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## Key Components

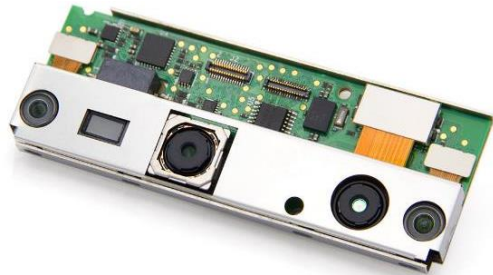
(Stereo)Cameras  
NIR

Cameras  
RGB

Dot / Light  
Projection  
Modules

Advanced  
Electronics

Precision  
Mechanics



Small form factor  
world-looking /  
face-looking 3D  
Sensing Modules



### Camera Technology

- ➔ Wide FoV high resolution
- ➔ Small(est) form factor
- ➔ 0.4 ... 20MP res / up to 4k video
- ➔ Unrivalled image quality

### Active Alignment

- ➔ Camera & Laser Projection Assembly
- ➔ 240 – 480 UPH, Multi-Head optional
- ➔ Lens-2-Sensor / Sensor-2-Lens alignment
- ➔ Dispense & Curing

### System Design

- ➔ Flood / Dot / Depth / 3D
- ➔ EEL vs. VCSEL
- ➔ Advanced Optical Design (e.g. DOE)
- ➔ Dot quality
- ➔ Miniaturization

### Capabilities

- ➔ Benchmark SMT
- ➔ Miniaturization, densification with small form factor packaging
- ➔ Bare Die Process Development

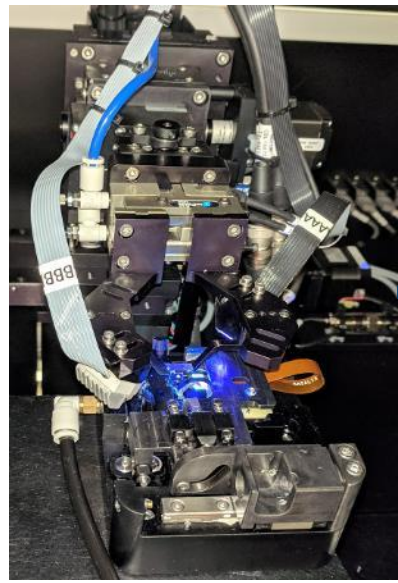
### T2M advantages

- ➔ In-house testing and prototyping
- ➔ In-house custom tooling shop
- ➔ Enabling new, miniature footprints

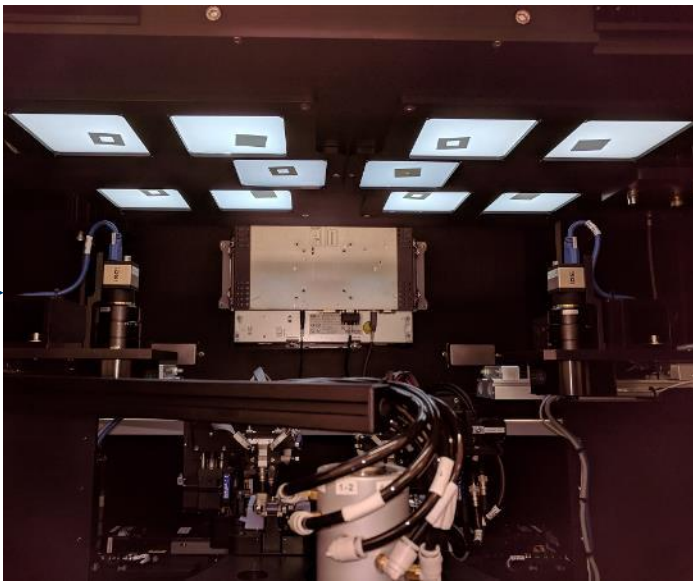
JABIL Capabilities – Complete Module Assembly for volume applications

# MODULE ASSEMBLY AND INTEGRATION FOR 3D SENSING

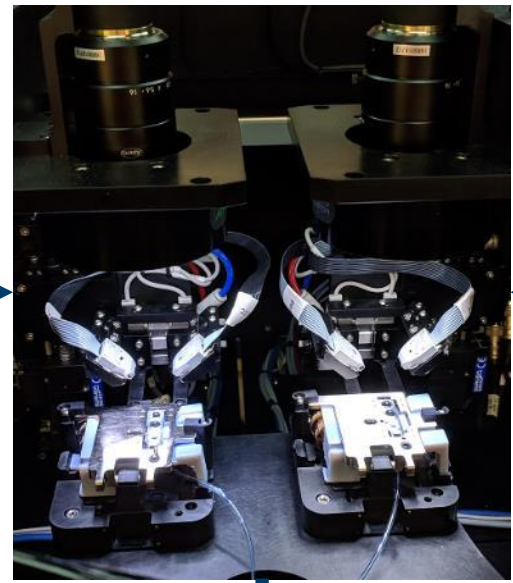
NIR/RGB CCM AA  
(focus and pointing)



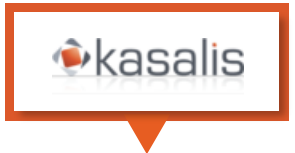
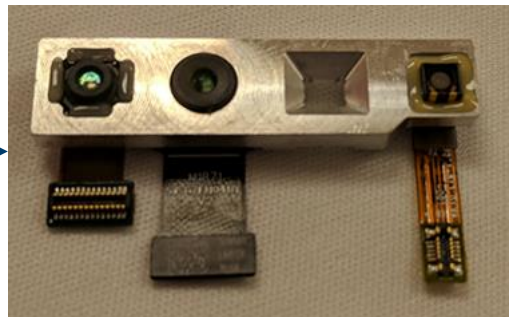
NIR CCM to RGB CCM Alignment  
(pointing and baseline distance)



LPM to NIR AA  
(pointing and baseline)



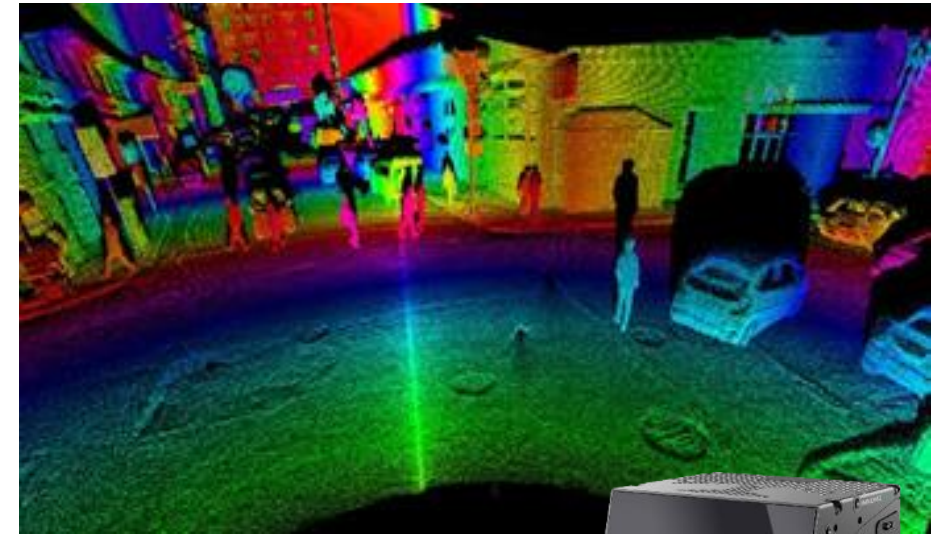
Integrated 3D Sensing Module  
(NIR CCM, RGB CCM, LPM)



<https://www.jabil.com/capabilities/optics/active-alignment.html>

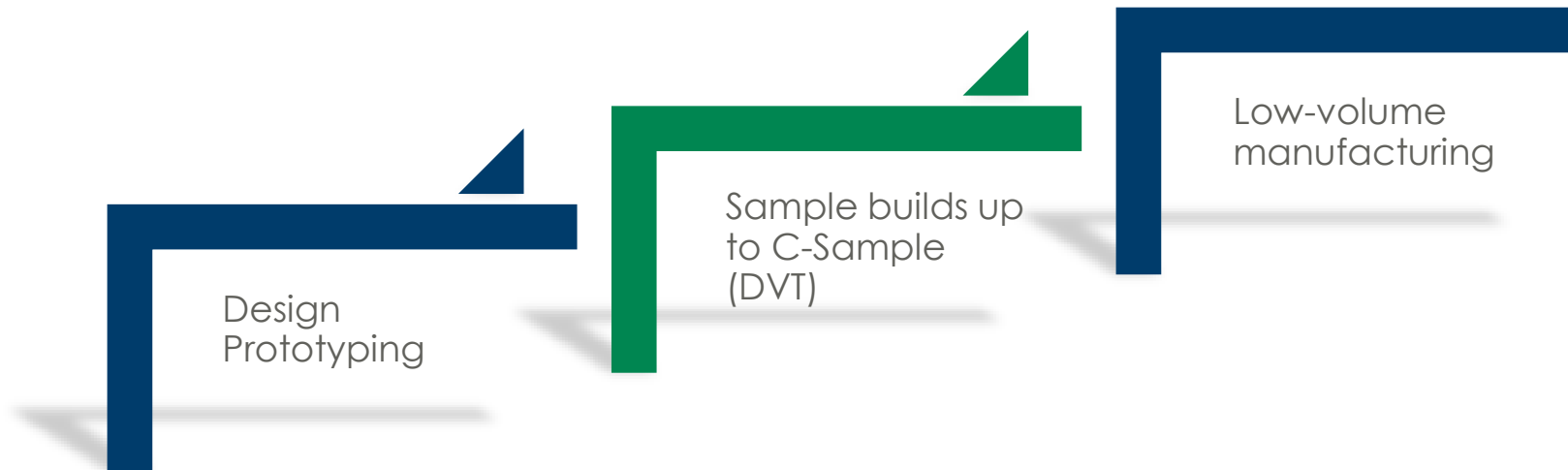
# JABIL OPTICS: PUTTING CUSTOMERS FIRST FROM LOW VOLUME TO HIGH VOLUME

- Applications (non-exhaustive)
  - Face ID
  - Gesture recognition / 3D Sensing
  - Distance sensing / automation control
  - (Industrial) LIDAR / AMRs
  - Driver monitoring
  - Object Detection / Collision avoidance
- Jabil designs for (high) volume manufacturing
  - Illumination for Driver monitoring camera
  - Light source for 360° ToF camera  
<https://www.epic-assoc.com/epic-online-technology-meeting-on-robotics-industrial-lidar-and-factory-automation/>
  - Flood light illumination for 3D sensing devices
  - ...and many more...

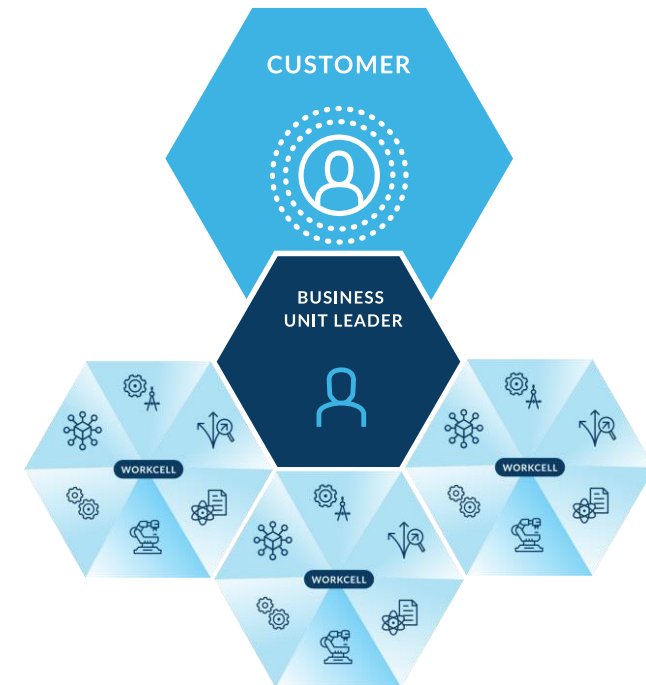


# JABIL OPTICS: PUTTING CUSTOMERS FIRST FROM LOW VOLUME TO HIGH VOLUME

- JABIL OPTICS Creation Center (JOCC) provides infrastructure for:



- Transfer of “MP-ready” products into any JABIL workcell → Mid to HV production



# JABIL – ONE OF THE WORLD'S LARGEST CONTRACT MANUFACTURER



## Markets We Serve



## Our Ability to Execute



**240K**

Employees



**100+**

Locations



**27,000**

Supply Chain Partners



**53.9M sf**

Manufacturing Space



**400+**

Brands



**27.3B**

FY20 Revenue

# THANK YOU



**JABIL**  
OPTICS

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JABIL

MADE **POSSIBLE.**  
MADE **BETTER.**