![emergent vision technologies logo]
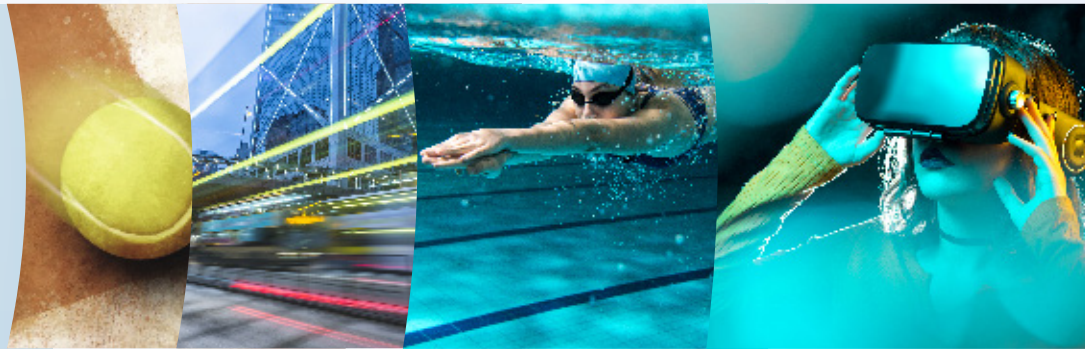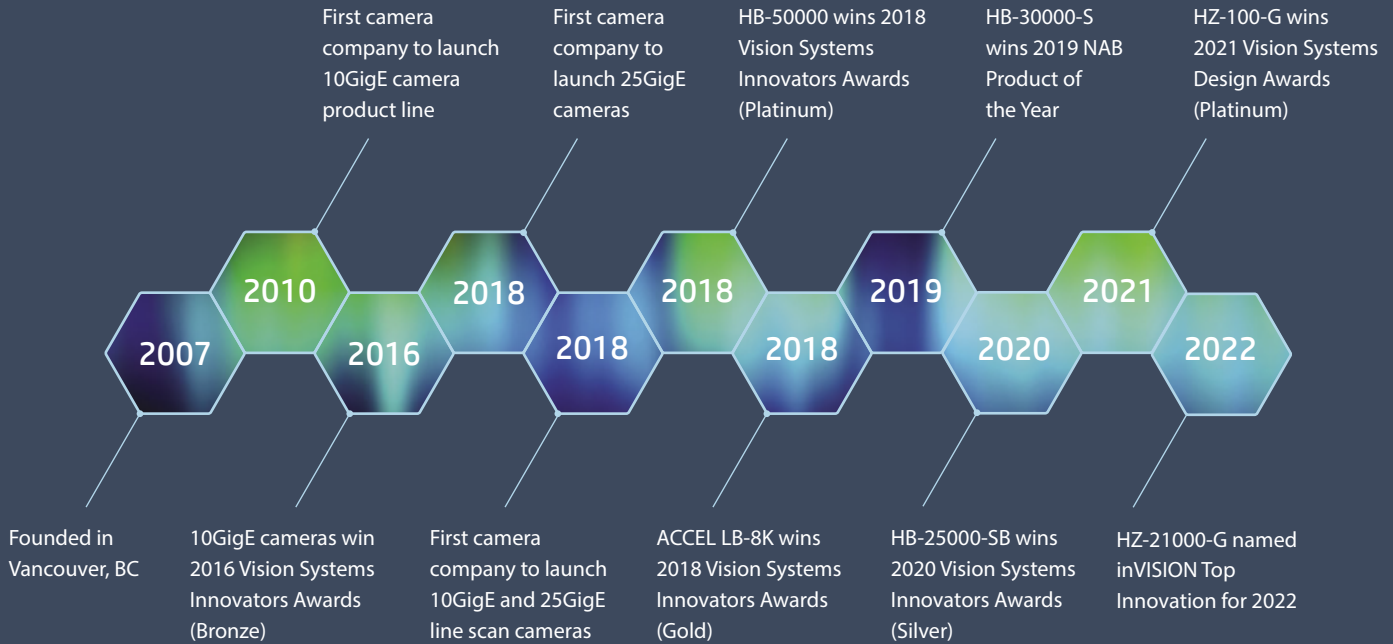
# Ultra High-Speed Ethernet Cameras

Any Speed | Any Resolution | Any Cable Length

# We are the world's first provider of 10, 25, 50, and 100 Gigabit Ethernet cameras

First camera company to launch 10GigE camera product line

First camera company to launch 25GigE cameras

HB-50000 wins 2018 Vision Systems Innovators Awards (Platinum)

HB-30000-S wins 2019 NAB Product of the Year

HZ-100-G wins 2021 Vision Systems Design Awards (Platinum)

**2007** | **2010** | **2016** | **2018** | **2018** | **2018** | **2018** | **2019** | **2020** | **2021** | **2022**

Founded in Vancouver, BC

10GigE cameras win 2016 Vision Systems Innovators Awards (Bronze)

First camera company to launch 10GigE and 25GigE line scan cameras

ACCEL LB-8K wins 2018 Vision Systems Innovators Awards (Gold)

HB-25000-SB wins 2020 Vision Systems Innovators Awards (Silver)

HZ-21000-G named inVISION Top Innovation for 2022

# What makes us different

## <1% CPU utilization

We take responsibility for the complete solution by developing technologies to keep the server-side CPU utilization and latency to incredibly low levels. For this, we leverage technologies such as Mellanox's VMA and Rivermax and Cspi's MVA to offload all packet processing to the Network Interface Cards (NICs). This results in less than 1% CPU utilization and approximately only 100µs added latency.

## Multi-camera accurate synchronization

Many of our customers in the virtual reality or broadcasting fields use multiple cameras per system. This means two or more cameras will be capturing images at the same time requiring precise synchronization to ensure optimal results to analyze high-speed events. All our cameras support IEEE1588 PTP synchronization. The PTP feature is supported through our Emergent eSDK software, which includes functional code examples to get you started.

## Cable options up to 10 kilometers

Our cameras feature connector options such as RJ45 and SFP+ (10GigE), SFP28 (25GigE), and QSFP28 (50 and 100GigE). They offer multiple options to cover the cable length requirements of all applications. Options include direct attach copper and single and multi-mode modules transceivers for cable lengths ranging from 1 meter and up to 10 kilometers.

# Table of Contents

# 10GigE Area Scan
# HR-Series Cameras

HR-Series cameras are equipped with a high-speed 10GigE SFP+ interface. They feature the latest CMOS sensors with global shutter technology from Sony and AMS.

Models range from 0.5 to 50MP with frame rates up to 1586 fps at full resolution. SFP+ provides three options to cover cable length requirements from one meter and up to 10 kilometers without the need for fiber converters or repeaters.

Other benefits include multi-camera synchronization at <1μs, low CPU overhead, and excellent price-performance ratio. Polarized and near-infrared options are available on selected models.

## Now featuring Sony Pregius S sensor technology

Our HR-Series now offer selected camera models with Sony Pregius S sensors. Sony Pregius S is a new sensor technology that features back-illuminated pixel structure that delivers distortion-free, high imaging performance and miniaturization.

## Applications

- Production Lines
- Microscopy Imaging
- Immersive 3D Content
- Goal Line Technology
- Finish Line Vision
- Referee Assist
- Sports, Broadcast, Entertainment
- Pharmaceutical Inspection

## Options

- Visible, near-infrared and polarized options available.
- IP67 housing

## Highlights

High-speed 10GigE SFP+ interface

Resolution: 0.5 to 50MP

Frame rates up to 1586fps

Latest CMOS sensors from Sony and AMS

GigE Vision® & GenICam™ compliant

# HR SERIES — HR-Series Area-Scan Cameras – 10GigE SFP+ interface

| Model | Sensor | Resolution | Megapixels | Sensor Type | Max Frame Rate | Cell Size | Standard Mount | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|
| HR-500-S | IMX426 | 812 x 620 | 0.5MP | 1/1.7" CMOS | 1586fps | 9x9µm | C Mount | 97 x 66 x 52 |
| HR-1800-S | IMX425 | 1604 x 1100 | 1.76MP | 1.1" CMOS | 660fps | 9x9µm | C Mount | 97 x 66 x 52 |
| HR-2000 | CMV2000 | 2048 x 1088 | 2MP | 2/3" CMOS | 338fps | 5.5x5.5µm | C Mount | 97 x 66 x 52 |
| HR-2000-S | IMX422 | 1624 x 1240 | 2MP | 1/1.7" CMOS | 485fps | 4.5x4.5µm | C Mount | 97 x 66 x 52 |
| HR-2800-S | IMX421 | 1936 x 1464 | 2.8MP | 2/3" CMOS | 410fps | 4.5x4.5µm | C Mount | 97 x 66 x 52 |
| HR-3000-S | IMX252 | 2048 x 1536 | 3.2MP | 1/1.8" CMOS | 216fps | 3.45x3.45µm | C Mount | 97 x 66 x 52 |
| HR-4000 | CMV4000 | 2048 x 2048 | 4MP | 1" CMOS | 179fps | 5.5x5.5µm | C Mount | 97 x 66 x 52 |
| HR-5000-S | IMX250 | 2448 x 2048 | 5MP | 2/3" CMOS | 163fps | 3.45x3.45µm | C Mount | 97 x 66 x 52 |
| HR-5000-SB | IMX537 | 2448 x 2048 | 5.1MP | 1/1.8" CMOS | 240fps | 2.74 x2.74µm | C Mount | 97 x 66 x 52 |
| HR-5000-SBL | IMX547 | 2448 x 2048 | 5.1MP | 1/1.8" CMOS | 99fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-7000-S | IMX420 | 3208 x 2200 | 7.06MP | 1.1" CMOS | 170 fps | 4.5x4.5µm | C Mount | 97 x 66 x 52 |
| HR-8000-S | IMX255 | 4096 x 2160 | 8.9MP | 1" CMOS | 110fps | 3.45x3.45µm | C Mount | 97 x 66 x 52 |
| HR-8000-SB | IMX536 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 145fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-8000-SB-U | IMX487 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 145fps | 2.74×2.74µm | C Mount | 97 x 66 x 52 |
| HR-8000-SBL | IMX546 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 73fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-12000 | CMV12000 | 4096 x 3072 | 12MP | 28mm CMOS | 84fps | 5.5x5.5µm | M42 | 97 x 66 x 73 |
| HR-12000-S | IMX253 | 4096 x 3000 | 12MP | 1.1" CMOS | 80fps | 3.45x3.45µm | C Mount | 97 x 66 x 52 |
| HR-12000-SB | IMX535 | 4096 x 3000 | 12.4MP | 1/1.1" CMOS | 100fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-12000-SBL | IMX545 | 4096 x 3000 | 12.4MP | 1/1.1" CMOS | 68fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-16000-SB | IMX532 | 5320 x 3032 | 16.1 MP | 1/1.1" CMOS | 77fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-16000-SBL | IMX542 | 5320 x 3032 | 16.13MP | 1/1.1" CMOS | 52fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HB-17000-S | IMX387 | 5456 x 3076 | 16.8MP | Four Thirds CMOS | 61fps | 3.45x3.45µm | M52 | 97 x 66 x 73 |
| HR-20000 | CMV20000 | 5120 x 3840 | 20MP | 35mm CMOS | 32fps | 6.4x6.4µm | M52 | 97 x 66 x 73 |
| HR-20000-S | IMX367 | 4416 x 4428 | 19.5MP | Four Thirds CMOS | 43fps | 3.45x3.45µm | M52 | 97 x 66 x 73 |
| HR-20000-SB | IMX531 | 4504 x 4504 | 20.28MP | 1/1.1" CMOS | 61fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-20000-SBL | IMX541 | 4504 x 4504 | 20.28MP | 1/1.1" CMOS | 43fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-25000-SB | IMX530 | 5320 x 4600 | 24.47MP | 1.2" CMOS | 51fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-25000-SBL | IMX540 | 5320 x 4600 | 24.47MP | 1.2" CMOS | 35fps | 2.74x2.74µm | C Mount | 97 x 66 x 52 |
| HR-30000-S | IMX342 | 6464 x 4852 | 31.36MP | APS-C (4:3) CMOS | 35fps | 3.45x3.45µm | M52 | 97 x 66 x 73 |
| HR-50000 | CMV50000 | 7920 x 6004 | 50MP | 35mm CMOS | 23fps | 4.6x4.6µm | M52 | 97 x 66 x 73 |

HR-2000


HR-2000 (back)


HR-50000


HT-50000 (back)

# 10GigE Area Scan
# HT-Series Cameras
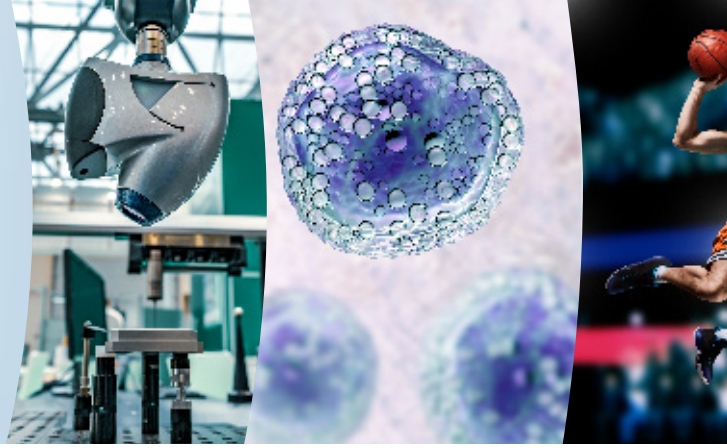
HT-Series cameras are equipped with a 10GBaseT-RJ45 connection. With their sleek smaller case and CAT6A connection, these cameras have the familiarity of GigE but with 10 times the speed.

Using CAT6A cabling, you can get cable lengths up to 100 meters. They feature the latest CMOS sensors with global shutter technology from Sony and AMS. Models range from 0.5 to 50 Megapixels.

Other benefits include multi-camera synchronization at <1μs, low CPU overhead, excellent price-performance ratio. Polarized and near-Infrared options are available on selected models.

## Now featuring Sony Pregius S sensor technology

Our HT-Series now offer selected camera models with Sony Pregius S sensors. Sony Pregius S is a new sensor technology that features back-illuminated pixel structure that delivers distortion-free, high imaging performance and miniaturization.

## Applications
- Virtual Reality
- Production Lines
- Microscopy Imaging
- Metrology
- Aerial Surveillance
- Pharmaceutical Pill Sorting
- PCB Solder Inspection Machines
- Amusement Attraction
- Photography

## Options
- Visible, near-infrared and polarized options available

## Highlights

High-speed 10GBaseT-RJ45 Interface

Resolution: 0.5 to 50MP

Frame rates up to 1586fps

Latest CMOS sensors from Sony and AMS

GigE Vision® & GenICam™ compliant

# HT SERIES  HT-Series Area-Scan Cameras – 10GBaseT - RJ45 interface

| Model | Sensor | Resolution | Megapixels | Sensor Type | Max Frame Rate | Cell Size | Standard Mount | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|
| HT-500-S | IMX426 | 812 x 620 | 0.50MP | 1/1.7" CMOS | 1,586fps | 9x9µm | C Mount | 88 x 58 x 39 |
| HT-1800-S | IMX425 | 1604 x 1100 | 1.76MP | 1.1" CMOS | 660fps | 9x9µm | C Mount | 88 x 58 x 39 |
| HT-2000 | CMV2000 | 2048 x 1088 | 2MP | 2/3" CMOS | 338fps | 5.5x5.5µm | C Mount | 88 x 58 x 39 |
| HT-2000-S | IMX422 | 1624 x 1240 | 2MP | 1/1.7" CMOS | 485fps | 4.5x4.5µm | C Mount | 88 x 58 x 39 |
| HT-2800-S | IMX421 | 1936 x 1464 | 2.8MP | 2/3" CMOS | 410fps | 4.5x4.5µm | C Mount | 88 x 58 x 39 |
| HT-3000-S | IMX252 | 2048 x 1536 | 3.2MP | 1/1.8" CMOS | 216fps | 3.45x3.45µm | C Mount | 88 x 58 x 39 |
| HT-4000 | CMV4000 | 2048 x 2048 | 4MP | 1" CMOS | 179fps | 5.5x5.5µm | C Mount | 88 x 58 x 39 |
| HT-5000-S | IMX250 | 2448 x 2048 | 5MP | 2/3" CMOS | 163fps | 3.45x3.45µm | C Mount | 88 x 58 x 39 |
| HT-5000-SB | IMX537 | 2448 x 2048 | 5.1MP | 1/1.8" CMOS | 240fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-5000-SBL | IMX547 | 2448 x 2048 | 5.1MP | 1/1.8" CMOS | 99fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-7000-S | IMX420 | 3208 x 2200 | 7.06MP | 1.1" CMOS | 170 fps | 4.5x4.5µm | C Mount | 88 x 58 x 39 |
| HT-8000-S | IMX255 | 4096 x 2160 | 8.9MP | 1" CMOS | 110fps | 3.45x3.45µm | C Mount | 88 x 58 x 39 |
| HT-8000-SB | IMX536 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 145fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-8000-SBL | IMX546 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 73fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-12000 | CMV12000 | 4096 x 3072 | 12MP | 28mm CMOS | 84fps | 5.5x5.5µm | M42 | 88 x 58 x 60 |
| HT-12000-S | IMX253 | 4096 x 3000 | 12MP | 1.1" CMOS | 80fps | 3.45x3.45µm | C Mount | 88 x 58 x 39 |
| HT-12000-SB | IMX535 | 4096 x 3000 | 12.4MP | 1/1.1" CMOS | 100fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-12000-SBL | IMX545 | 4096 x 3000 | 12.4MP | 1/1.1" CMOS | 68fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-16000-SB | IMX532 | 5320 x 3032 | 16.13MP | 1/1.1" CMOS | 77fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-16000-SBL | IMX542 | 5320 x 3032 | 16.13MP | 1/1.1" CMOS | 52fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-17000-S | IMX387 | 5456 x 3076 | 16.8MP | Four Thirds CMOS | 61fps | 3.45x3.45µme | M52 | 88 x 58 x 60 |
| HT-20000 | CMV20000 | 5120 x 3840 | 20MP | 35mm CMOS | 32fps | 6.4x6.4µm | M52 | 88 x 58 x 60 |
| HT-20000-S | IMX367 | 4416 x 4428 | 19.5MP | Four Thirds CMOS | 43fps | 3.45x3.45µm | M52 | 88 x 58 x 60 |
| HT-20000-SB | IMX531 | 4504 x 4504 | 20.28MP | 1/1.1" CMOS | 61fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-20000-SBL | IMX541 | 4504 x 4504 | 20.28MP | 1/1.1" CMOS | 43fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-25000-SB | IMX530 | 5320 x 4600 | 24.47MP | 1.2" CMOS | 51fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-25000-SBL | IMX540 | 5320 x 4600 | 24.47MP | 1.2" CMOS | 35fps | 2.74x2.74µm | C Mount | 88 x 58 x 39 |
| HT-30000-S | IMX342 | 6464 x 4852 | 31.36MP | APS-C (4:3) CMOS | 35fps | 3.45x3.45µm | M52 | 88 x 58 x 60 |
| HT-50000 | CMV50000 | 7920 x 6004 | 50MP | 35mm CMOS | 23fps | 4.6x4.6µm | M52 | 88 x 58 x 60 |

HT-2000

HT-2000 (back)

HT-50000

HT-50000 (back)

# 10GigE Line Scan
## PACE-Series Cameras

**8K line-scan camera – Choose between a 10GigE SFP+ or 10GBaseT– RJ45 interface.**

PACE series cameras feature the latest Gpixel CMOS sensors. All models come with a horizontal image resolution of 8192 effective pixels and a line rate of up to: Single line - 172KHz 4K, Trilinear 57KHz - 4K. This enables high-speed and low-noise image capture, ensuring all your inspection, sorting and production control requirements are met.

## Applications

- Industrial Inspection
- Printing Inspection
- Label Inspection
- Film Inspection
- PCB Inspection
- Automotive Inspection
- Food Sorting and Grading
- Pharmaceutical Inspection

## Highlights

- 10GigE SFP+ or 10GigE RJ45 interface

- Latest CMOS sensors from Gpixel

- Single line - up to 172KHz 4K, Trilinear up to 57KHz - 4K

- GigE Vision® & GenICam™ compliant

## PACE Line-Scan Cameras - 10GigE SFP+ and 10GigE RJ45 interface

| Model | Interface | Sensor | Resolution | Line Scan Mode | Sensor Scanning Width | Cell Size | Standard Mount | Dimensions (mm) |
|-------|-----------|--------|------------|----------------|----------------------|-----------|----------------|-----------------|
| **LR-4KG35** | 10GigE SFP+ | GL3504 | 4Kx2 | Single line - 172KHz - 4K, Trilinear - 57KHz - 4K | 14.336mm | 3.5x3.5µm | C Mount | 97 x 58 x 60 |
| **LR-8KG7** | 10GigE SFP+ | GL7008 | 8Kx4 | Single line - 150KHz - 8K, Trilinear - 50KHz - 8K | 57.344mm | 7x7µm | M72 | 97 x 58 x 60 |
| **LR-8KG** | 10GigE SFP+ | GL0816 | 8Kx16 | Single line - 137KHz - 8K, Trilinear - 45KHz - 8K | 40.96mm | 5x5µm | M52 | 97 x 58 x 60 |
| **LT-8KG** | 10GigE RJ45 | GL0816 | 8Kx16 | Single line - 137KHz - 8K, Trilinear - 45KHz - 8K | 40.96mm | 5x5µm | M52 | 88 x 58 x 60 |
| **LR-16KG35** | 10GigE SFP+ | GL3516 | 16Kx2 | Single line - 70KHz - 16K, Trilinear - 23KHz - 16K | 57.344mm | 3.5x3.5µm | M72 | 97 x 58 x 60 |
| **LR-16KG5** | 10GigE SFP+ | GL5016 | 16Kx16 | Single line - 74KHz - 16K, Trilinear - 25KHz - 16K | 81.92mm | 5x5µm | M86 | 115 x 115 x 53 |
| **TLR-9KG5** | 10GigE SFP+ | GLT5009BSI | 9K 256 TDI | Single line - 121KHz - 9K | 45.36mm | 5x5µm | M52 | 97 x 58 x 60 |



LR-8KG

LR-8KG (back)

LR-4KG35

LR-4KG35 (back)

# 25GigE Area Scan
## HB-Series (BOLT)

**BOLT-Series' ultra high-speed 25GigE SFP28 interface offers excellent performance with resolutions from 0.5 to 127.7 Megapixels and frame rates up to 1594.7 fps.**

BOLT camera models feature the latest CMOS sensors with global shutter technology from Sony, AMS and Gpixel. The 25GigE SFP28 interface offers many benefits including low-cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE1588. In addition, SFP28 offers three supported cabling options for cable lengths from 1M to 10KM.

### Featuring Sony Pregius S sensor technology

The HB-5000-SB, HB-8000-SB, HB-12000-SB, HB-16000-SB, HB-20000-SB and HB-250000-SB camera models use Sony Pregius S sensors. Sony Pregius S is a new sensor technology that features back-illuminated pixel structure that delivers distortion-free, high imaging performance and miniaturization.

## Applications

- Virtual Reality
- Volumetric Capture
- Motion Capture
- Referee Assist
- Industrial Inspection
- Automation
- Intelligent Transportation Systems
- Logistics
- Metrology

## Options

- IP67 housing

## Highlights

Ultra high-speed 25GigE SFP28 interface

Resolution: 0.5 to 127.7MP

Frame rates up to 1594.7fps

Latest CMOS sensors from Sony, AMS, and Gpixel

GigE Vision® & GenICam™ compliant

## BOLT Area-Scan Cameras – 25GigE SFP28 interface

| Model | Sensor | Resolution | Megapixels | Sensor Type | Max Frame Rate | Cell Size | Standard Mount | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|
| HB-500-S | IMX426 | 812 x 620 | 0.50MP | 1/1.7" CMOS | 1594.7fps | 9x9μm | C Mount | 97 x 66 x 52 |
| HB-1800-S | IMX425 | 1604 x 1100 | 1.76MP | 1.1" CMOS | 662.1fps | 9x9μm | C Mount | 97 x 66 x 52 |
| HB-2000-S | IMX422 | 1624 x 1240 | 2.01MP | 1/1.7" CMOS | 477.6fps | 4.5x4.5μm | C Mount | 97 x 66 x 52 |
| HB-2800-S | IMX421 | 1936 x 1464 | 2.8MP | 2/3" CMOS | 409.2fps | 4.5x4.5μm | C Mount | 97 x 66 x 52 |
| HB-5000-G | GMAX2505 | 2600 x 2160 | 5.61MP | 1/2" CMOS | 290fps | 2.5x2.5μm | C Mount | 97 x 66 x 52 |
| HB-5000-SB | IMX537 | 2472 x 2064 | 5.1MP | 1/1.8" CMOS | 269fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-7000-S | IMX420 | 3208 x 2200 | 7.06MP | 1.1" CMOS | 207.1fps | 4.5x4.5μm | C Mount | 97 x 66 x 52 |
| HB-8000-SB | IMX536 | 2856 x 2848 | 8.1MP | 2/3" CMOS | 201fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-8000-SB-U | IMX487 | 2840 x 2840 | 8.1MP | 2/3" CMOS | 201fps | 2.74×2.74μm | C Mount | 97 x 66 x 52 |
| HB-9000-G | GMAX2509 | 4200 x 2160 | 9.07MP | 2/3" CMOS | 290fps | 2.5x2.5μm | C Mount | 97 x 66 x 52 |
| HB-12000 | CMV12000 | 4096 x 3072 | 12MP | 28mm CMOS | 188fps | 5.5x5.5μm | M42 | 97 x 66 x 73 |
| HB-12000-SB | IMX535 | 4128 x 3008 | 12.4MP | 1/1.1" CMOS | 192fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-16000-SB | IMX532 | 5320 x 3032 | 16.13MP | 1.1" CMOS | 145fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-17000-S | IMX387 | 5456 x 3076 | 16.8MP | Four Thirds CMOS | 61fps | 3.45x3.45μm | M52 | 97 x 66 x 73 |
| HB-20000-S | IMX367 | 4416 x 4428 | 19.5MP | Four Thirds CMOS | 43fps | 3.45x3.45μm | M52 | 97 x 66 x 73 |
| HB-20000-SB | IMX531 | 4504 x 4504 | 20.28MP | 1.1" CMOS | 100fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-25000-G | GMAX0505 | 5120 x 5120 | 26.2MP | 1.1" CMOS | 75fps | 2.5x2.5μm | C Mount | 97 x 66 x 52 |
| HB-25000-SB | IMX530 | 5320 x 4600 | 24.47MP | 1.2" CMOS | 98fps | 2.74x2.74μm | C Mount | 97 x 66 x 52 |
| HB-30000-S | IMX342 | 6464 x 4852 | 31.36MP | APS-C (4:3) CMOS | 35.4fps | 3.45x3.45μm | M52 | 97 x 66 x 73 |
| HB-50000 | CMV50000 | 7920 x 6004 | 50MP | 35mm CMOS | 30fps | 4.6x4.6μm | M52 | 97 x 66 x 73 |
| HB-65000-G | GMAX3265 | 9344 x 7000 | 65MP | 35mm CMOS | 35fps | 3.2x3.2μm | M52 | 97 x 66 x 73 |
| HB-127-S | Sony IMX661 | 13400 x 9528 | 127.7MP | 56.7mm CMOS | 17fps | 3.45×3.45μm | M82 x 0.75 | 95 x 95 x 53 |

HB-127S     HB-127S (back)     HB-12000-SB     HB-65000-G

# 25GigE Line Scan
## ACCEL-Series Cameras

## 8K, 9K, and 16K line-scan cameras with the ultra high-speed 25GigE SFP28 interface

Our 25GigE line-scan cameras feature the SFP28 interface for cable lengths from 1 meter up to 10 kilometers without the need for costly fiber converters/repeaters. This results in lossless capture and ruthless processing efficiency. Powered by the latest Gpixel sensors, the ACCEL Series of cameras provide multilinear scans at true 8K, 9K, and 16K vision.

## Applications

- Industrial Inspection
- Printing Inspection
- Label Inspection
- Film Inspection
- PCB Inspection
- Automotive Inspection
- Food Sorting and Grading
- Pharmaceutical Inspection

## Highlights

Ultra high-speed 25GigE SFP28 interface

Latest CMOS sensors from Gpixel

Single line up to 304KHz-9K, Trilinear up to 100KHz-9K and 8K

GigE Vision® & GenICam™ compliant

## ACCEL Line-Scan Cameras - 25GigE SFP28 interface

| Model | Sensor | Resolution | Line Scan Mode | Sensor Scanning Width | Cell Size | Standard Mount | Dimensions (mm) |
|-------|--------|------------|----------------|----------------------|-----------|----------------|-----------------|
| **LB-8KG7** | GL7008 | 8Kx4 | Single line - 300KHz - 8K, Trilinear - 100KHz - 8K | 57.344mm | 7x7µm | M72 | 97 x 58 x 60 |
| **LB-8KG** | GL0816 | 8Kx16 | Single line - 200KHz - 8K, Trilinear - 66KHz - 8K | 40.96mm | 5x5µm | M52 | 97 x 58 x 60 |
| **TLB-9KG5** | GTL5009BSI | 9K 256 TDI | Single line - 304KHz - 9K | 45.36mm | 5x5µm | M52 | 97 x 58 x 60 |
| **LB-16KG35** | GL3516 | 16Kx2 | Single line - 100KHz - 16K, Trilinear - 33KHz - 16K | 57.344mm | 3.5x3.5µm | M72 | 97 x 58 x 60 |
| **LB-16KG5** | GL5016 | 16Kx16 | Single line - 180KHz - 16K, Trilinear - 60KHz - 16K | 81.92mm | 5x5µm | M86 | 115 x 115 x 53 |

LB-8KG7    LB-8KG7 (back)    LB-8KG    LB-8KG (back)

# 50GigE Area Scan
## HX-Series (Xtreme)

As the successor to the successful 25GigE technology, QSFP28-50GigE offers extreme performance thanks to new advancements in sensor technology.

Xtreme camera models feature the latest CMOS sensors with global shutter technology from Gpixel. The 50GigE QSFP28 interface offers many benefits including low-cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE1588. In addition, QSFP28 offers three supported cabling options for cable lengths from 1M to 10KM.

### Featuring the latest high-speed sensor technology
The new Gsprint CMOS sensors by Gpixel are specifically designed for high-speed applications requiring higher frame rates and/or high dynamic range. Our new Xtreme camera series capitalize on this new advancement in sensor technology to further solidify our position as the market leader in ultra-high-speed Ethernet camera technology.

## Applications
- Virtual Reality
- Volumetric Capture
- Motion Capture
- Referee Assist
- Industrial Inspection
- Automation
- Intelligent Transportation Systems
- Logistics
- Metrology

## Options
- IP67 housing

## Highlights

Ultra high-speed 50GigE QSFP28 interface

Resolution: 2.5 to 152MP

Frame rates up to 1730fps

Latest CMOS sensors from Gpixel

GigE Vision® & GenICam™ compliant

## Xtreme Area-Scan Cameras – 50GigE QSFP28 interface

| Model | Sensor | Resolution | Megapixels | Sensor Type | Max Frame Rate | Cell Size | Standard Mount | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|
| **HX-2000-G** | Gsprint4502 | 2048 x 1216 | 2.5MP | 2/3" CMOS | 1730fps | 4.5x4.5µm | C Mount | 97 x 66 x 73 |
| **HX-10000-G** | Gsprint4510 | 4608 x 2176 | 10MP | 22.9mm CMOS | 500fps | 4.5x4.5µm | M60 | 97 x 66 x 73 |
| **HX-21000-G** | Gsprint4521 | 5120 x 4096 | 21MP | 29.5mm CMOS | 300fps | 4.5x4.5µm | M60 | 97 x 66 x 73 |
| **HX-65000-G** | GMAX3265 | 9344 x 7000 | 65.4MP | 35mm CMOS | 71fps | 3.2x3.2µm | M52 | 97 x 66 x 73 |
| **HX-100-G** | GMAX32103 | 11276 x 9200 | 103.7MP | 46.5mm CMOS | 30fps | 3.2x3.2µm | M60 | 97 x 66 x 73 |
| **HX-150-G** | GMAX32152 | 11276 x 9200 | 152MP | 60.6mm CMOS | 16fps | 3.2×3.2µm | M60 | 97 x 66 x 73 |

HX-100-G HX-100-G (back) HX-2000-G HX-2000-G (back)

# 100GigE Area Scan
## HZ-Series (Zenith)

**As the industry's fastest interface QSFP28-100 GigE offers unmatched performance with ultra high data and frame rates thanks to new advancements in sensor technology.**

Zenith camera models feature the latest CMOS sensors with global shutter technology from Gpixel. The 100GigE QSFP28 interface offers many benefits including low-cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE1588. In addition, QSFP28 offers three supported cabling options for cable lengths from 1M to 10KM.

### Featuring the latest high-speed sensor technology

The new GSPRINT and GMAX CMOS sensors by Gpixel are specifically designed for high-speed applications requiring higher frame rates and/or high dynamic range. Our new Zenith camera series capitalize on this new advancement in sensor technology to further solidify our position as the market leader in ultra-high-speed Ethernet camera technology.

### Applications
- Virtual Reality
- Volumetric Capture
- Motion Capture
- Referee Assist
- Industrial Inspection
- Automation
- Intelligent Transportation Systems
- Logistics
- Metrology

### Highlights

Ultra high-speed 100GigE QSFP28 interface

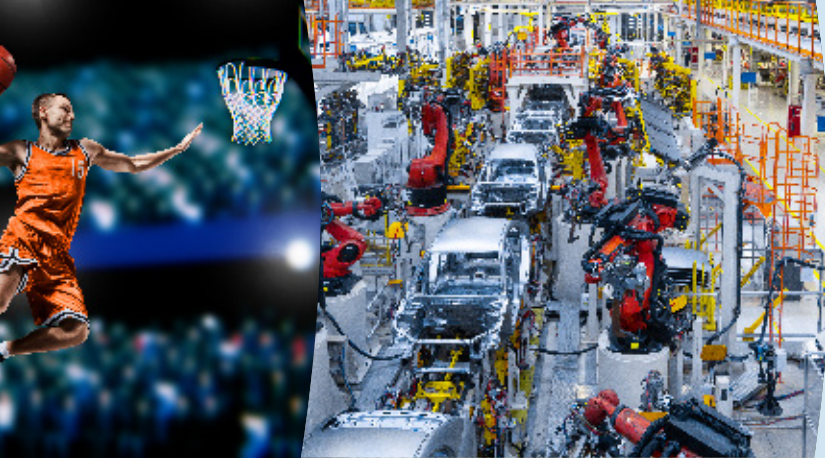Resolution: 2.5 to 152MP

Frame rates up to 3462fps

Latest CMOS sensors from Gpixel

GigE Vision® & GenICam™ compliant

100GIGE

## Zenith Area-Scan Cameras – 100GigE QSFP28 interface

| Model | Sensor | Resolution | Megapixels | Sensor Type | Max Frame Rate | Cell Size | Standard Mount | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|
| HZ-2000-G | GSPRINT4502 | 2048 x 1216 | 2.5MP | 2/3" CMOS | 3462fps | 4.5x4.5µm | C Mount | 97 x 66 x 73 |
| HZ-10000-G | GSPRINT4510 | 4608 x 2176 | 10MP | 22.9mm CMOS | 1000fps | 4.5x4.5µm | M60 | 97 x 66 x 73 |
| HZ-21000-G | GSPRINT4521 | 5120 x 4096 | 21MP | 29.5mm CMOS | 542fps | 4.5x4.5µm | M60 | 97 x 66 x 73 |
| HZ-65000-G | GMAX3265 | 9344 x 7000 | 65.4MP | 35mm CMOS | 71fps | 3.2x3.2µm | M52 | 97 x 66 x 73 |
| HZ-100-G | GMAX32103 | 11276 x 9200 | 103.7MP | 46.5mm CMOS | 24fps | 3.2x3.2µm | M60 | 97 x 66 x 73 |
| HZ-150-G | GMAX32152 | 16720 x 9256 | 152MP | 60.6mm CMOS | 16fps | 3.2x3.2µm | M60 | 97 x 66 x 73 |


HZ-2000-G


HZ-2000-G (back)


HZ-150-G


HZ-150-G (back)

# 100GigE Line Scan
# PINNACLE-Series Cameras

## 9K and 16K line-scan cameras with 100GigE QSFP28 interface

Our 100GigE line-scan cameras feature the QSFP28 interface for cable lengths from 1 meter up to 10 kilometers without the need for costly fiber converters/repeaters. Powered by the latest sensors Gpixel has to offer, the Pinnacle series provides multilinear scans at true 9K and 16K vision and a line rate of: Single Line – up to 608KHz, Trilinear – up to 133KHz.

## Applications

- Industrial Inspection
- Printing Inspection
- Label Inspection
- Film Inspection
- PCB Inspection
- Automotive Inspection
- Food Sorting and Grading
- Pharmaceutical Inspection

## Highlights

The industry's fastest interface: 100GigE QSFP28

Latest CMOS sensors from Gpixel

Single Line – up to 608KHz, Trilinear – up to 133KHz

GigE Vision® & GenICam™ compliant

# PINNACLE Line-Scan Cameras - 100GigE QSFP28 interface

| Model | Sensor | Resolution | Line Scan Mode | Sensor Scanning Width | Cell Size | Standard Mount | Dimensions (mm) |
|-------|--------|-----------|----------------|----------------------|-----------|----------------|-----------------|
| **TLZ-9KG5** | GLT5009BSI | 9K 256 TDI | Single line - 608KHz - 9K | 45.36mm | 5x5µm | M52 | 97 x 58 x 60 |
| **LZ-16KG5** | GL5016 | 16Kx16 | Single line - 400KHz - 16K, Trilinear - 133KHz - 16K | 81.92mm | 5x5µm | M86 | 115 x 115 x 53 |



LZ-16KG5

LZ-16KG5 (back)

TLZ-9KG5

TLZ-9KG5 (back)
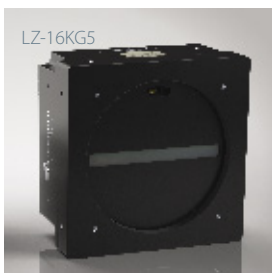
# Software

Get imaging in no time with our three software packages: eCapture Pro turnkey software, eCapture viewer software, and eSDK (Software Development Kit) for seamless integration of Emergent cameras into your system.

## eCapture Pro

Our full turnkey software eCapture Pro delivers application development capabilities in areas such as machine vision inspection and volumetric capture for customers with limited development resources or no expertise in ultra-high-speed vision technologies.

Additionally, with eCapture Pro, advanced users can take advantage of additional capabilities, such as the ability to work with raw images or use software tools for 3D model creation for use in Sketchfab, Unreal Engine, or Unity, and other metaverse applications.

### Features include:

- Turnkey application development
- Real-time preview and capture
- Full control of Emergent Vision Technologies' cameras
- IP configuration settings
- Remote firmware upgrades
- GenICam camera feature controls

## eCapture

Our free viewer software package eCapture provides control of all camera functions for preview, capture and save. Advanced functions include Area Of Interest (AOI), integration control, and standard pre-processing such as brightness, gamma, frame rate control and more.

eCapture also allows for remote firmware upgrades which maximizes your up-time while keeping you up-to-date on the latest features from Emergent. eCapture is GenICam compliant and designed to meet the needs for machine vision users.

### Features include:

- Real Time Preview and Capture
- Full control of Emergent Vision Technologies Cameras
- IP Configuration Settings
- Remote Firmware Upgrades
- GenICam Camera Feature Controls
- Custom GenICam XML Load

## eSDK

eSDK allows end-users, system integrators, or OEMs to integrate their Emergent Vision Technologies cameras into their own software and equipment. eSDK is available with concise API commands to facilitate simple integration with custom software for Windows® and Linux® Based Systems.

eSDK is GenICam compliant and includes numerous examples with source code and full documentation and support from our technical staff. The eSDK software solution also provides <1% CPU overhead for Windows and Linux when capturing a 9Gbps image stream from the cameras directly to application buffers.

### Features include:

- Full Control of Emergent Vision Technologies Cameras
- Visual Studio Express Support
- GenICam Compliant
- Custom GenICam XML Load
- Code Examples

**Free eSDK download** with the purchase of an Emergent camera system.

## Third-party Solutions

In addition to Emergent Vision Technologies eCapture and eSDK, all our cameras can be used with third-party software from four of our partners.

- NI Vision Acquisition Toolbox
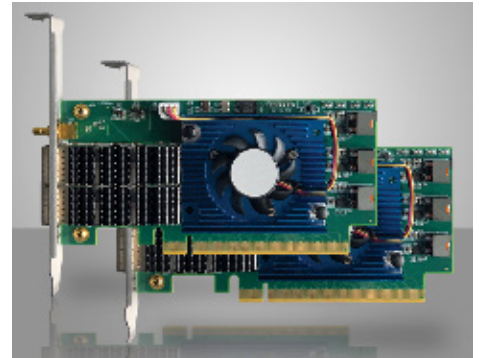- MVTec Halcon
- Cognex VisionPro

# Interface Cards

High quality, powerful network interface cards (NICs) to help you get the most out of your 10GigE, 25GigE, and 100GigE cameras.



## Zeus

- 100GigE QSFP28 (Single or dual port)
- PCIe Gen3 or Gen4 x 16
- 5V TTL Trigger Port
- Camera Multiplexing
- GPU Direct
- GigE Vision
- Sync to 1µm



## Hermes

- 25GigE SFP28 (Dual or quad port)
- PCIe Gen3 x8
- 5V TTL Trigger Port
- Camera Multiplexing
- GPU Direct
- GigE Vision
- Sync to 1µm



## Theia

- 10GigE SFP+ (Dual or quad port)
- PCIe Gen3 x8
- 5V TTL Trigger Port
- Camera Multiplexing
- GPU Direct
- GigE Vision
- Sync to 1µm

## Third Party

- QSFP28, SFP28, SFP+
- 100GigE, 25GigE, 10GigE
- PCIe Gen 3/4 x8/x16
- Camera Multiplexing
- GPU Direct

# Accessories

A wide range of accessories are available direct from Emergent Vision Technologies to help you get the most out of our 10GigE, 25GigE, 50GigE, and 100GigE cameras.



## Interface Cables

We offer QSFP28, SFP28, and SFP+ cables for 100GigE, 25GigE, and 10GigE area scan and line scan cameras. Cables offered feature fiber (with fiber transceiver) and direct attach options to suit cable lengths from 1M to 10KM, CAT6A cable option for 10GigE, and Emergent certification and testing.



## Switches

Switches available support QSFP28, SFP28, and SFP+ cables for 100GigE, 25GigE, and 10GigE area scan and line scan cameras, as well as IEEE1588 PTP protocol, camera multiplexing, and camera multicasting. In addition, these switches deliver zero packet loss and have been Emergent certified and tested.



## Power and I/O

We provide certified power supplies and GPIO accessories for easy setup and use with our cameras. The power supplies are tested to be of the highest quality and are thus very good at blocking line power transients to better protect your camera investment.



## Lens Mounts

Lens mounts offered by Emergent Vision Technology include EF Mount (iris/focus software control), F Mount, small and large format, and custom lens options for your 10GigE, 25GigE, and 100GigE area scan and line scan cameras.

**emergent**
vision technologies
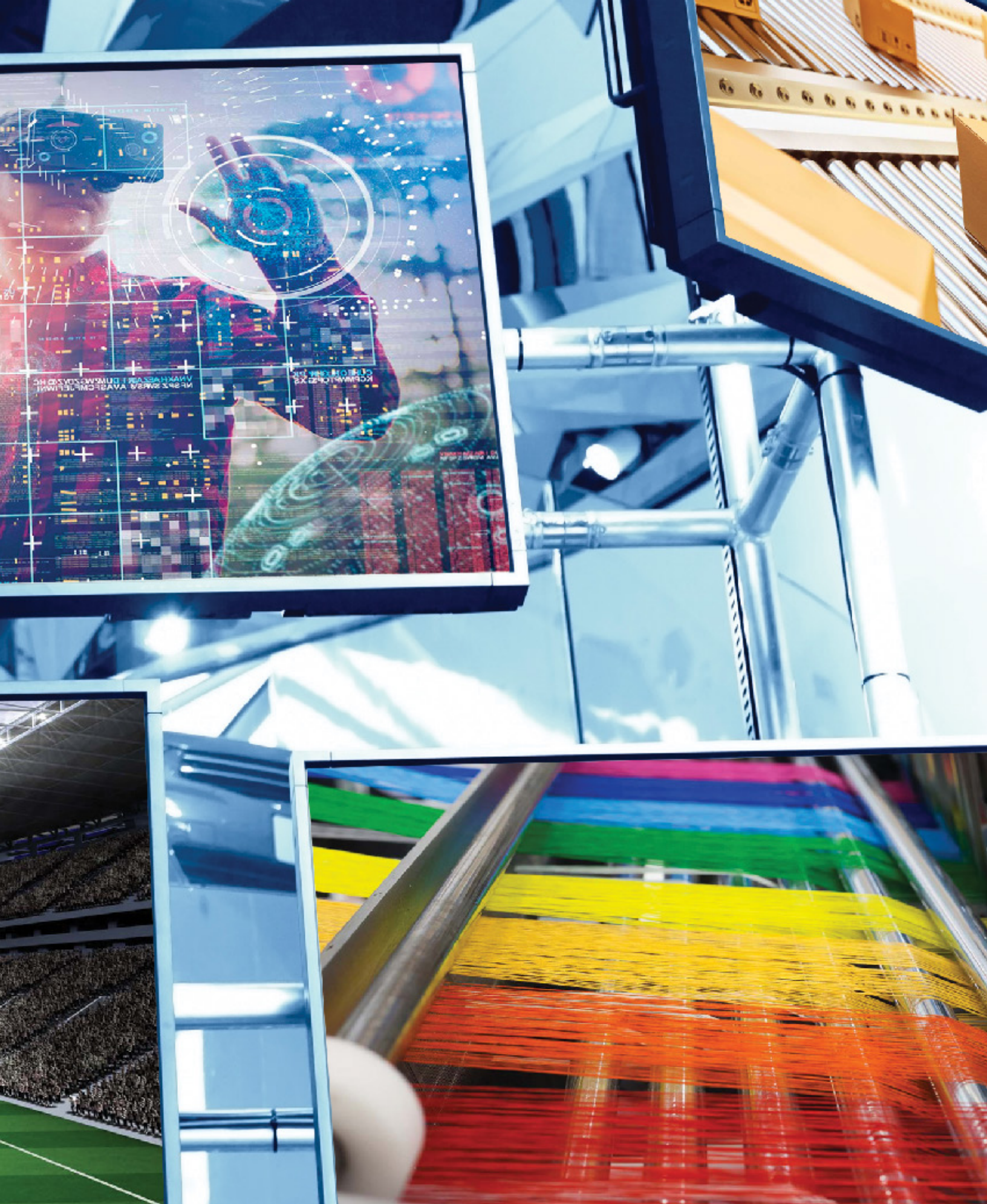
Head Office:
3135-580 Nicola Ave
Port Coquitlam, British Columbia
Canada  V3B 0P2

+1-866-780-6082
sales@emergentvisiontec.com
emergentvisiontec.com

Europe, Middle East, and Africa:
Roemmelesweg 26
71394 Kernen
Germany

+49 160 5775613
sales@emergentvisiontec.com