



DENEb Series

Thermal Imaging Camera for Temperature Monitoring and Surveillance

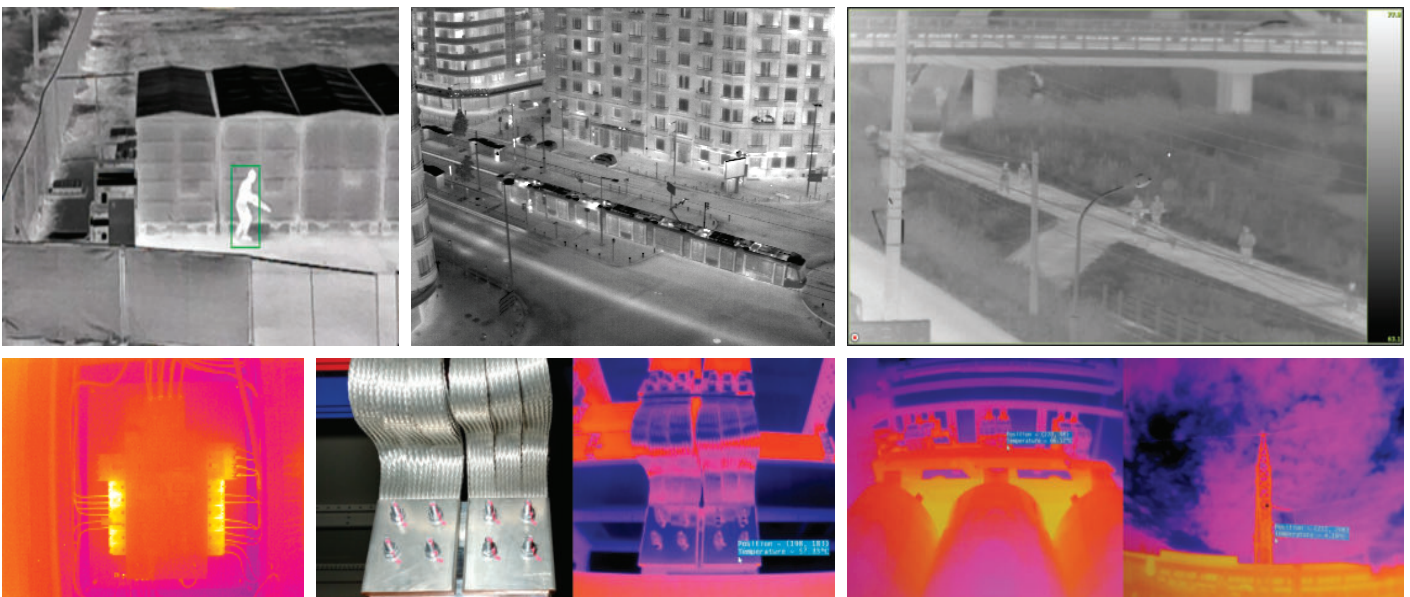
The DENEb series, a thermal imaging camera developed by OZRAY of Korea, is designed based on a far-infrared (LWIR) uncooled microbolometer detector.

It can be used in various fields such as industrial sites, drones, machine vision, night intruder monitoring, fire monitoring temperature monitoring, national important facilities, solar power, and panel inspection.

Features

- 384 x 288 / 640 x 480 pixels full format
- 8~14um uncooled microbolometer
- 17um square pixels
- Customized radiometric calibration for all pixels (-15~120°C / 0~500°C)

Regulatory Compliance



UDP Family

Features	DE384F30IPE	DE384F60IPE	DE640F30IPE	DE640F60IPE	DE640F120IPE	DEs640F30IPE*	DEs640F60IPE*
Mechanical Interface							
Size (W x H x D)	56 x 56 x 55mm				45 x 45 x 59.5mm		
Weight	233g (w/o lens)		243g (w/o lens)		193g (w/o lens)		
Power connector	6-pin threaded Hirose Mating connector part# HR10A-7R-6PB(73)						
Electrical Interface							
Input Voltage	DC12V or PoE						
Power Consumption	< 5W		< 6W		< 4.5W		
Interfaces							
Ethernet Protocol	Giga Ethernet(10/100/1000Mbps)						
Frame rate	30fps	60fps	30fps	60fps	120fps	30fps	60fps
Radiometric							
Type	Fully radiometric for all pixels						
Measurement mode	Low Temperature : -15 ~ +120°C High Temperature : 0 ~ 500°C						
Temperature Accuracy	±1°C or 1% at 25°C of ambient temperature ±2°C or 2% at 15~30°C of ambient temperature						
Environmental Conditions							
Operating Temperature (Ambient)	-10°C ~ +40°C						
Operating Relative Humidity	maximum 80% non-condensing						
Storage Temperature	-40°C ~ +85°C						
Storage Relative Humidity	maximum 80% non-condensing						
Sensor Information							
Technology	Amorphous Silicon (α-Si) microbolometer				Vox microbolometer		
Spectral Response	8 ~ 14um (LWIR)						
Pixel Pitch	17um				12um		
Focal Plane Array	384x288		640x480				

*현재 : Prototype&프로모션가능
**양산 : 23년Q1

GEV Family

Features	DE384F30GE	DE384F60GE	DE640F30GE	DE640F60GE	DE640F120GE
Mechanical Interface					
Size (W x H x D)	56 x 56 x 55mm				
Weight	233g (w/o lens)		243g (w/o lens)		
Power connector	6-pin threaded Hirose Mating connector part# HR10A-7R-6PB(73)				
Electrical Interface					
Input Voltage	DC12V or PoE				
Power Consumption	< 5W		< 6W		
Interfaces					
Ethernet Protocol	Giga Ethernet(10/100/1000Mbps)				
Frame rate	30fps	60fps	30fps	60fps	120fps
Radiometric					
Type	Fully radiometric for all pixels				
Measurement mode	Low Temperature : -15 ~ +120°C High Temperature : 0 ~ 500°C				
Temperature Accuracy	±1°C or 1% at 25°C of ambient temperature ±2°C or 2% at 15~30°C of ambient temperature				
Environmental Conditions					
Operating Temperature (Ambient)	-10°C ~ +40°C				
Operating Relative Humidity	maximum 80% non-condensing				
Storage Temperature	-40°C ~ +85°C				
Storage Relative Humidity	maximum 80% non-condensing				
Sensor Information					
Technology	Amorphous Silicon (α-Si) microbolometer				
Spectral Response	8 ~ 14um (LWIR)				
Pixel Pitch	17um				
Focal Plane Array	384x288		640x480		

GMSL Family**

Features	DEs640F30GM	DEs640F60GM
Mechanical Interface		
Size (W x H x D)	T.B.D	
Weight	T.B.D	
Power connector	6-pin threaded Hirose Mating connector part# HR10A-7R-6PB(73)	
Electrical Interface		
Input Voltage	DC12V or PoC	
Power Consumption	T.B.D	
Interfaces		
Application	ADAS	
Protocol	GMSL1 (1.7Gbps)	
Frame rate	30fps	60fps
Radiometric		
Type	Fully radiometric for all pixels	
Measurement mode	Low Temperature : -15 ~ +120°C High Temperature : 0 ~ 500°C	
Temperature Accuracy	±1°C or 1% at 25°C of ambient temperature ±2°C or 2% at 15~30°C of ambient temperature	
Environmental Conditions		
Operating Temperature (Ambient)	-10°C ~ +40°C	
Operating Relative Humidity	maximum 80% non-condensing	
Storage Temperature	-40°C ~ +85°C	
Storage Relative Humidity	maximum 80% non-condensing	
Sensor Information		
Technology	Vox microbolometer	
Spectral Response	8 ~ 14um (LWIR)	
Pixel Pitch	12um	
Focal Plane Array	640x480	

**현재 : Prototype 개발중
**양산 : 23년Q2

LENS

1. MODEL : DE384F30IPE / DE384F60IPE & DE384F30GE / DE384F60GE

F.L (mm)	F# (1/f)	Focus range (M)	HFOV (degree)	VFOV (degree)	Lens Weight	Maker
4	1.2	0.2 ~	90.0	68.7	28g	ViewNyx
4	1.4	0.2 ~	90.0	65.2	2.3g	ViewNyx
6.2	1.0	0.8 ~	62.5	46.0	30g	ViewNyx
8	1.0	0.2 ~	37.4	27.4	30g	ShalomEO
8.1	1.1	0.8 ~	49.0	36.0	25g	ViewNyx
10	1.0	0.2 ~	31.0	24.1	30g	ShalomEO
12.3	1.0	0.2 ~	28.5	21.4	30g	ShalomEO
15	1.0	0.2 ~	24.1	18.1	30g	ShalomEO
15	1.0	3.3 ~	24.5	18.5	30g	ViewNyx
19	1.0	5.3 ~	19.4	14.6	35g	ViewNyx
19	1.0	0.5 ~	19.5	14.7	30g	ShalomEO
25	1.0	0.8 ~	14.9	11.2	48g	ShalomEO
35	1.0	2 ~	10.7	8.0	TBD	ShalomEO
50	1.2	3 ~	7.4	5.6	115g	ShalomEO
75	1.2	5 ~	4.9	7.3	TBD	ShalomEO
100	1.2	10	3.7	2.8	500g	ShalomEO

2. MODEL : DE640F30IPE / DE640F60IPE / DE640F120IPE & DE640F30GE / DE640F60GE / DE640F120GE

F.L (mm)	F# (1/f)	Focus range (M)	HFOV (degree)	VFOV (degree)	Lens Weight	Maker
7.1	1.0	0.2 ~	90.0	66.0	TBD	ShalomEO
8	1.0	0.2 ~	68.2	48.0	30g	ShalomEO
10	1.0	0.2 ~	56.4	41.0	30g	ShalomEO
12.3	1.0	0.2 ~	48.3	35.8	30g	ShalomEO
15	1.0	0.2 ~	40.1	30.0	30g	ShalomEO
19	1.0	5.3 ~	32.2	24.2	35g	ViewNyx
19	1.0	0.5 ~	32.0	24.2	30g	ShalomEO
25	1.0	0.8 ~	24.6	18.5	48g	ShalomEO
35	1.0	2 ~	17.7	13.3	TBD	ShalomEO
50	1.2	3 ~	12.4	9.3	115g	ShalomEO
75	1.2	5 ~	8.3	6.2	TBD	ShalomEO
100	1.2	10	6.2	4.6	500g	ShalomEO