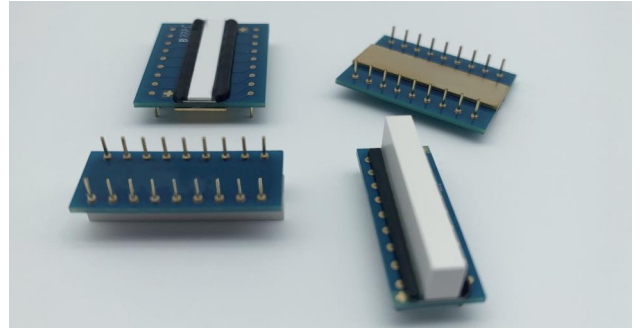


## 1. Overview

EHEC/LEG-1.6P is a front side illuminated type 16 element photodiode array coupled with different high-performance scintillators, such as CsI(Tl) scintillator and GOS ceramic. The silicon photodetector has ultra low dark current, low terminal capacitance and high sensitivity uniformity covered a broad spectrum, and it



is designed directly for single or dual energy imaging, that two of the photodiode array, each with a GOS ceramic and CsI(Tl) scintillator, are combined in an upper and lower two-layer format, which are for the detection of high energy  $\gamma$ -rays and low energy  $\gamma$ -rays simultaneously, and suitable for various kind of application especially in X-ray security inspection.

## 2. Feature

- Spectral response range: 350-1100 nm
- Single element size: 1.4 mm(W)x2.5(H) mm
- Element pitch: 1.575 mm(x 16 pixels)
- Mounted on the board sizes:
  - 1, 25.4 mm x 20.0 mm(GOS ceramic for low energy)
  - 2, 25.4 mm x 10.2 mm(CsI scintillator for high energy)
- Support dual energy imaging(when used in an upper and lower two-layer combination)
- Detectable energy range: 30 keV - 200 keV
- Arranging with two or more module in a row for a long size line detector

## 3. Application

- ◆ Security inspection
- ◆ Mon-destructive testing
- ◆ Food inspection
- ◆ Thickness measurement
- ◆ Industrial process control
- ◆ Mineral sorting
- ◆ Waste sorting

## 4. Technical Parameter

Scintillators parameters	CsI(Tl)	GOS(Pr)	GOS(Tb)
Peak emission wavelength(nm)	510	550	510
Refractive index	1.79	2.2	2.2
Decay time(us)	1	3	600
Afterglow(@20ms)	<1%	<0.01%	<0.1%
Density(g/cm <sup>3</sup> )	4.51	7.34	7.34
Color	Transparent	Light yellow-green	Light yellow-green
Sensitivity non-uniformity(%)	+/-15	+/-15	+/-15
Thickness(mm)	5	0.5	0.5
Length x width(mm)	25.4x3.5	25.4x3.5	25.4x3.5
Element pitch(mm)	1.575	GOS film	GOS film
Mechanical dimension of photodiode			
Element pitch(mm)		1.575	
Element effective size(WXH mm)		1.4x2.5	
Number of Element		16	
Electrical and optical characters			
Spectrum response range( nm)		λ:350-1100	
Peack sensitivity wavelength(nm)		λ:940	
Photo sensitivity(A/W)		S: @550nm, Typ 0.4, Min 0.36	
Dark current(pA)		ID:@-10mV, Typ 5, Max20	
Terminal capacitance(pF)		Ct @OV, f=10kHz Typ 41, Max 50	
Reverse voltage(V)		10	
Operating temperature(degree C)		-10-60	
Storage temperature(degree C)		-20 -70	
Operating humidity(%RH)		30-90	
Storage(%RH)		40-95	

## 5. Drawings(unit: mm)

