

Thermopile Module With Mirror Optics

Type HTIA Dx Tx



General information about HTIA models are described in "Application Note Thermopile Module Analog".

Features and Benefits

- PCB mounted with connector
- 5V supply voltage
- 2 analog voltage outputs (thermopile sensor and temperature reference)
- Low response time of 5ms
- Lens optics of focal length 4.4mm resulting in 4:1 D:S ratio
- Absorber size 0.61mm x 0.61mm
- Factory calibrated to default object temperature range upto 300°C
- IR transmission >70% % within wavelength range 7.5µm to 13µm
- Optional with internal temperature compensation (type HTIA DC)

Ordering Information

HTIA -> Heimann thermopile sensor and integrated circuit on pcb

Dx -> cap TO39 for integrated mirror optics , infrared filter

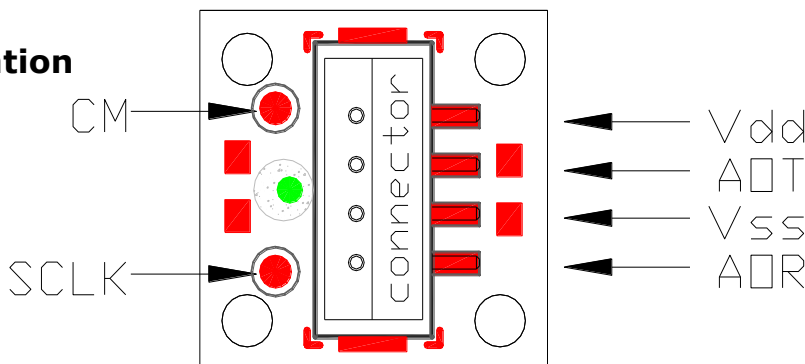
x->„U“ sensor signal not compensated ;

x->„C“ sensor signal internal compensated

Tx -> object temperature upper limit

Sample: HTIA DU T100 , without internal compensation , object temperature range up to 100°C within output voltage range

Pin Configuration



Symbol	Description
VDD	Positive supply voltage
VSS	Negative supply voltage / Ground (0V)
AOT	Analogue output voltage Thermopile sensor
AOR	Analogue output voltage Temperature reference
SCLK CM	Programming pads for factory setting

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Electrical and Operating Conditions

<i>Parameter</i>	<i>Typical Value</i>	<i>Unit</i>	<i>Condition</i>
Supply voltage VDD	4.5 .. 5 .. 5.5	V	+Vs
Supply voltage VSS	0	V	-Vs , ground
Supply current	1 .. 1.7 .. 2.2	mA	without load
Output voltage range	0.3 .. VDD-0.3	V	
Start up time after POR	Max. 0.5	sec	electrical start up
Output resistance	< 10	Ohm	f < 100Hz
Output load	> 20	kOhm	for optimal operation
Sensor absorbing area	0.61 x 0.61	mm ²	sensor type TP1
Object temperature range	-30 .. +300	°C	factory default setting
Sensor amplification	150 .. 5500		output AOT, factory default
Response time sensor	5	msec	t/T = 63%
Temperature reference voltage at 25°C	1.225	V	output AOR, factory default
Sensitivity temperature reference	15 (10 .. 16)	mV/°C	output AOR ; factory default type "U" (type "C")
Operating temperature	-20.. 120	°C	

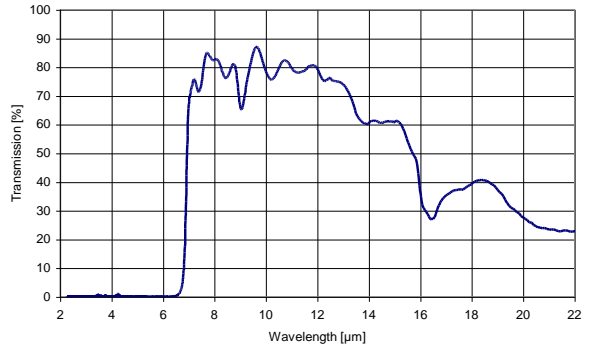
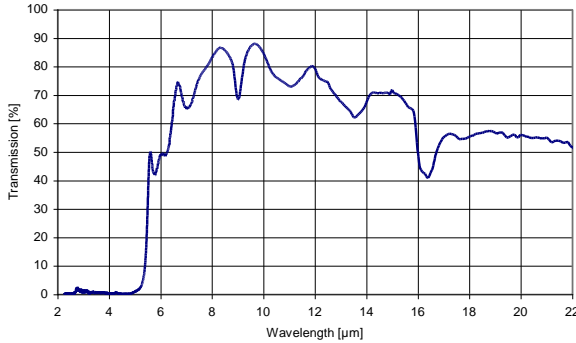
Infrared Transmission

<i>parameter</i>	<i>minimum</i>	<i>typical</i>	<i>maximum</i>
Cut on wavelength	5.2µm 6.2µm	5.5µm 6.6µm	5.8µm 7.0µm
Average transmission from 7.5µm to 13.5µm	70%		
Average transmission from visual to 5µm			0.5%

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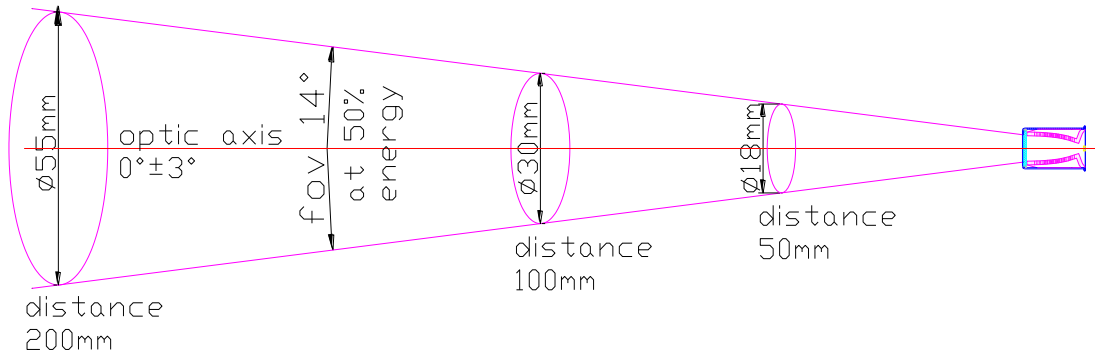


Sample Curve Transmission

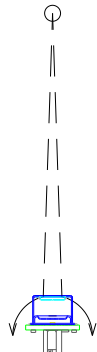


Field of View

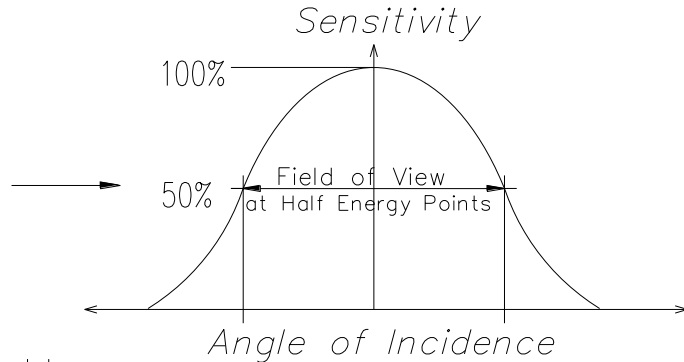
parameter	limits			unit	conditions
	Min	Typ	Max		
field of view	12	14	16	degree	50% energy points



Pulsed Point Radiation Source



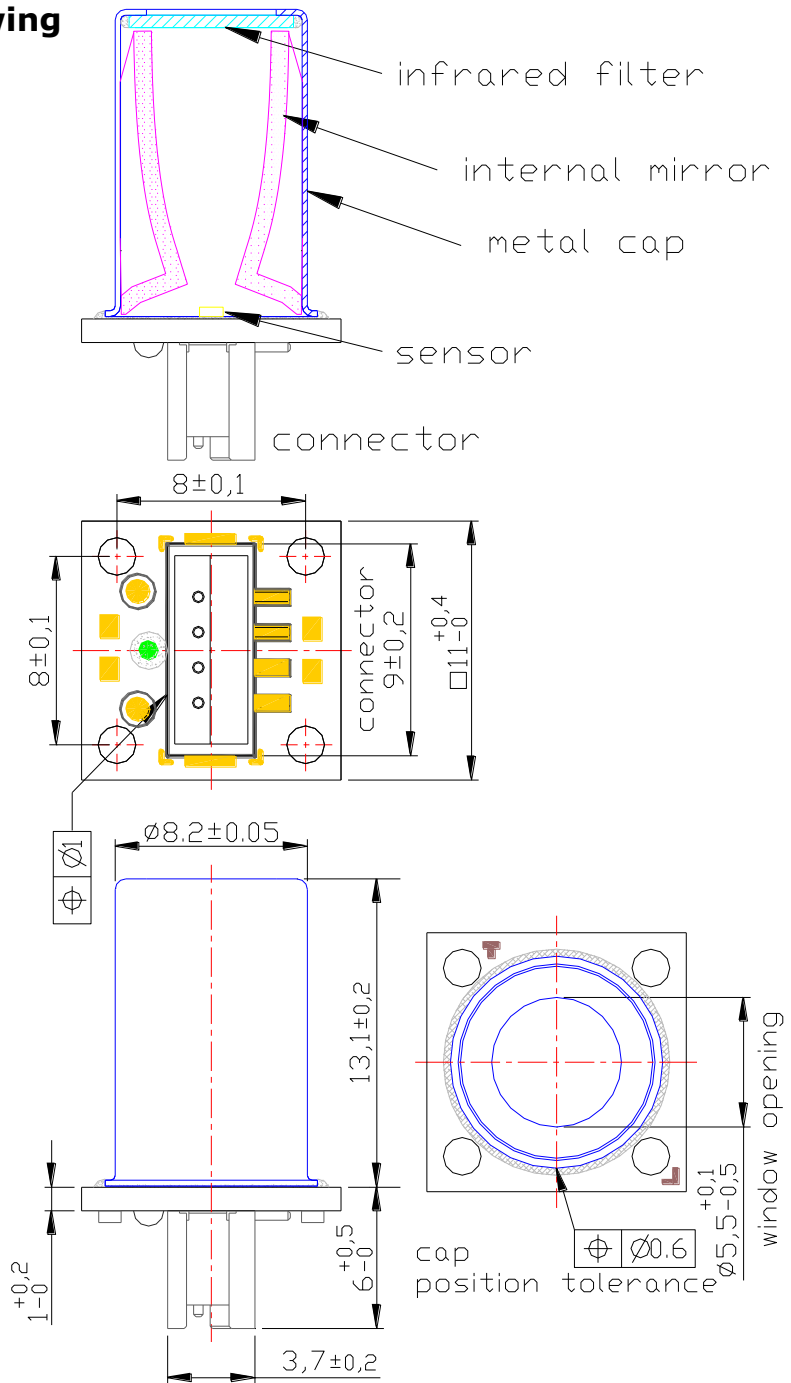
Rotated Sensor Module



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Dimensional Drawing



Liability

Changes or modifications at the product which haven't influence to the performance and/or quality of the device haven't to be announced to the customers in advance. Customers are requested to consult with Heimann Sensor representatives before the use of Heimann Sensor products in special applications where failure or abnormal operation may directly affect human lives or cause physical injury or property damage. The company or their representatives will not be responsible for damage arising from such use without prior approval.