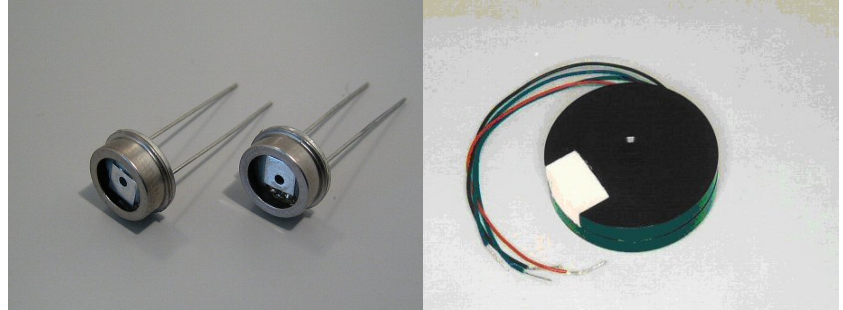


**THERMOPILE, RADIATION POWER SENSING DEVICES
LP111S, LP123, LP31B**



Features and Applications

Thin film thermopiles for such radiation power sensing as CO₂ laser and infra-red optical power. Fast response (LP-111S, LP-123), and including incident power calibration system (LP31B) are distinctive feature.

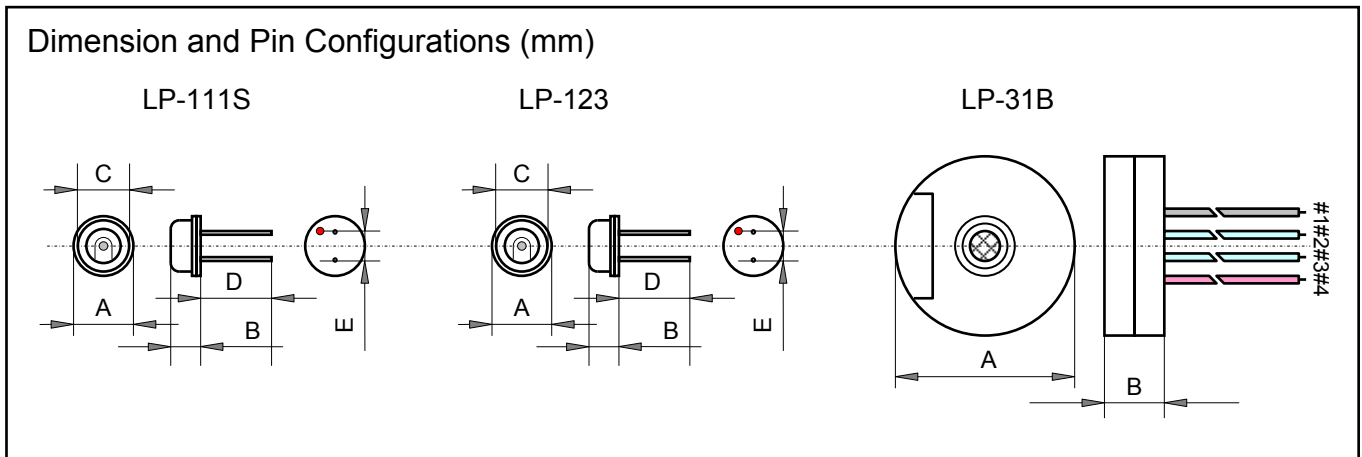
Optical chopper that is always prepared in pyro-electricity sensor is unnecessary.

Stable +/-DC output voltage is observed without influence from ambient temperature change.

Wide and flat sensitivity characteristics at 0.2 to 20 micro-meter wave length are available.

Low output impedance less than 10 K ohm gives easy amplifier circuit construction.

None-contact temperature measurement, laser power measurement, power stabilization of laser generator and radiation optical power measurements.



(mm)	A	B	C	D	E
LP-111S	9.05 dia.	3.5	8.1 dia.	17+/-2	5.0
LP-123	9.05 dia.	3.5	8.1 dia.	17+/-2	5.0
LP-31B	38.0 dia.	10.0	-	-	-

Ordering Information

Type	TCR	Resistance	Tolerance	Code	Note
LP-111S	---	---	---	000	Not RoHS
LP-123	---	---	---	000	
LP-31B	---	---	---	000	

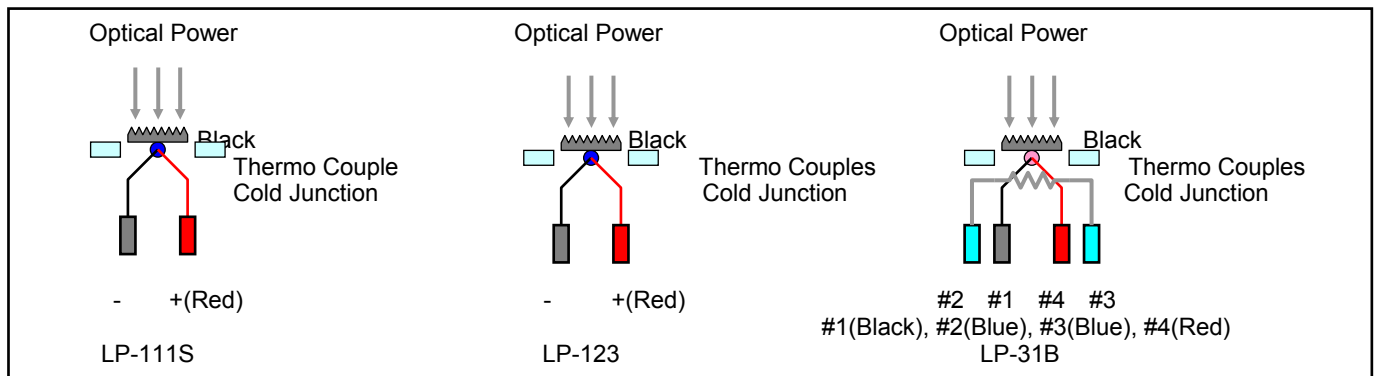
THERMOPILE, RADIATION POWER SENSING DEVICES

LP111S, LP123, LP31B

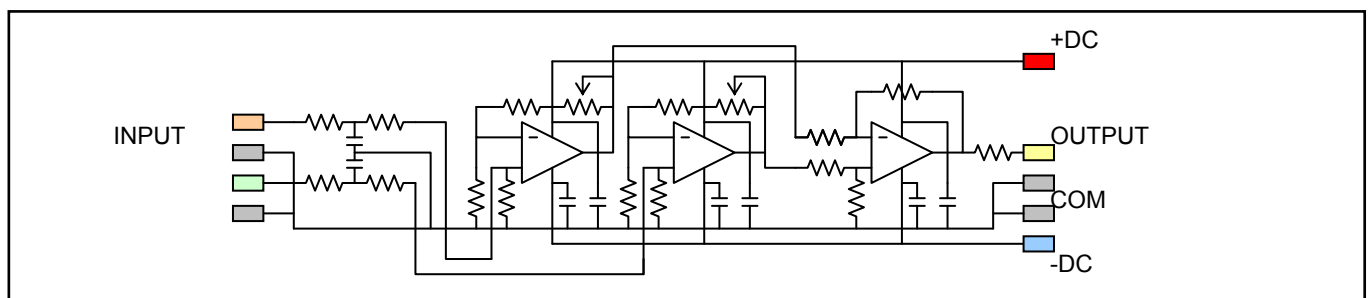
Specifications

	P/N	LP-111S	LP-123	LP-31B
INPUT	Range of Detecting Wave Length (um)	0.4-20.0	0.4-20.0	0.4-20.0
	Material of Absorption Black	Metal Black	Metal Black	Metal Black
	Continuous Max. Input Power(mW)	10	10	10
	Warning Input Power(mW)	20	20	200
	Diameter of Detecting Aperture, (mm dia.)	1.0	1.0	5.0
OUTPUT	Sensitivity (mV/mW)	10.0	5.0	0.45
	Error from Linearity	-	-	-
	Internal Resistance (kohms)	2.0+/-1.0	2.0+/-1.0	6.5+/-3.5
	63% Response Time (ms)	45	45	4,000
	Number of Thermo Couple (pairs)	22	11	36
CALIBRATION	Resistance of Calibration Resistor (ohms)	---	---	250-500
MECHANICAL	Storage Temperature (deg C)	0-40	0-40	0-40
	Operation Temperature (deg C)	0-40	0-40	0-40

Schematics and Pin Connections



Typical Sensing Amplifier



Note : Since thermopile LP-231S was discontinued, please use a fast response type LP-111S as an alternative.