

PHOTOSENSOR MODULE

TYPE : H10770B-40

CUSTOMER: UNIV OF CALIF SAN DIEGO

QUANTITY: 4 pcs.

Serial Number	(1) Cathode Radiant Sens.	(2) Anode Radiant Sens.	(3) Anode Dark Current				
	mA/W	A/W $\times 10^3$	nA				
AA4495	204.0	253	0.14				
AA4803	228.0	258	0.57				
AA4948	233.0	613	0.51				
AA5097	246.0	2130	1.79				
5							
10							
15							
20							
25							

NOTES

- (1) (2) The light source is a tungsten lamp and the incident light on the photocathode has a wavelength of 550 nm which is obtained through band pass filter.
- (2) (3) Overall control voltage: 0.8 V
- (3) Temp setting 25 °C

Date: MARCH 15, 2012

Approved by :



# PRELIMINARY

## H10770B-40/-50 Specifications

### W/O PROTECTION CIRCUIT

#### □ Maximum Ratings

Parameter	-40/-50	Unit
Main unit input voltage	+18	V dc
Operating temperature	+5 to +35	Cel
Storage temperature	-20 to +50	Cel
Output Current	2	μA
Control Voltage (Vcontrol)	+0.9(Input impedance for Vcont. is 100 kΩ)	V

#### □ Specifications General

(Ta = 25 Cel)

Parameter	-40	-50	Unit
Spectral response	300 to 720	380 to 890	nm
High voltage power supply and Voltage Regulator Supply voltage range	+11.5 to +15.5		V dc
High voltage power supply and Voltage Regulator Supply Current Requirement (Maximum)	62		mA
Supply Adjustable Range (Relative Sensitivity)	1:50		-
Setting Time(Sensitivity Control) <sup>*1</sup>	0.2		s
Effective Area (dia.)	5		mm
Weight (Approx.)	110		g

\*1) Stabilized time in the control voltage adjustment from +1.0 V to +0.5 V.

#### □ Series Characteristics

(Ta = 25 Cel)

Parameter		-40	-50	Unit
H10770	Radiant Sensitivity	at 420 nm	54	Typical × 10 <sup>-6</sup> A/nW
		at 550 nm	88	
		at 800 nm	-	
Dark Current <sup>(A)(B)</sup>	Typical	3.3	4.1	nA
	Maximum	9.3	11.6	
H10770P	Radiant Sensitivity	at 420 nm	108	Typical × 10 <sup>-6</sup> A/nW
		at 550 nm	176	
		at 800 nm	-	
Dark Count <sup>(B)(C)</sup>	Typical	6000	7500	1/s
	Maximum	18000	22500	
Induced Ripple in Signal <sup>(D)</sup>		0.6		Maximum mV p-p
Anode Pulse Rise Time <sup>(A)</sup>		1.00		ns
Recommended Control Voltage Range Vcontrol		+0.50 to +0.80		V

(A) Control Voltage : +0.8 V ; Temperature control at 25 Cel.

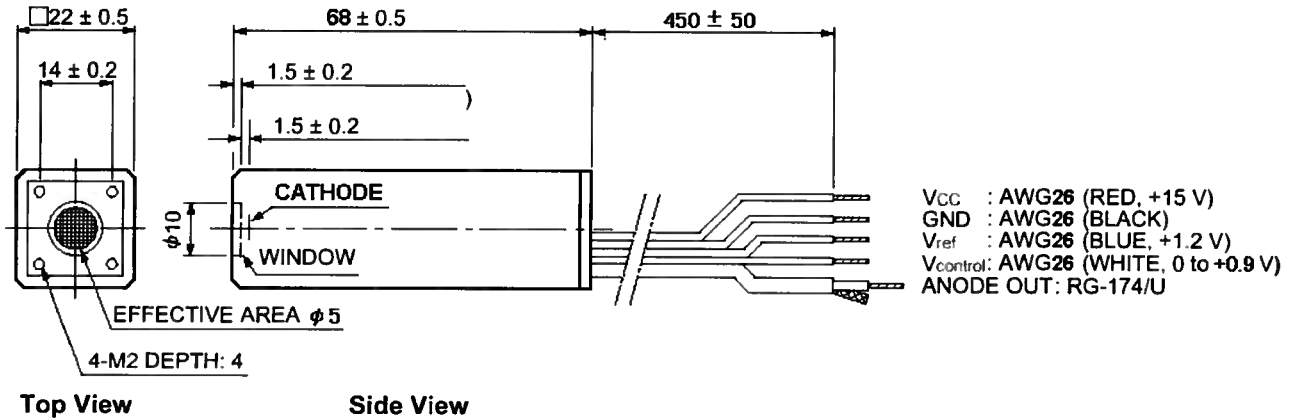
(B) After 30 min storage in darkness.

(C) Control Voltage : Plateau ; Temperature control at 25 Cel.

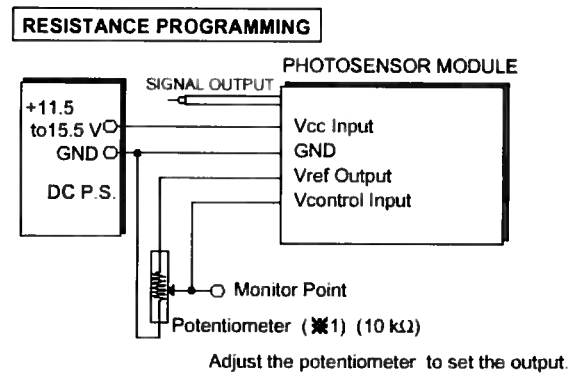
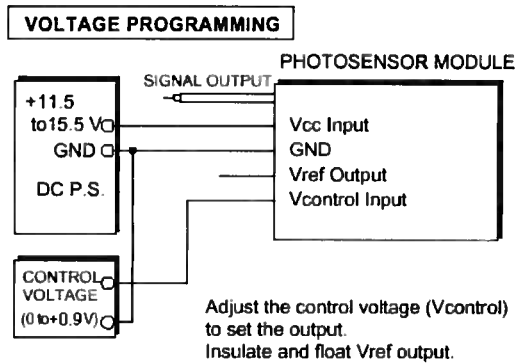
(D) Measured across 1 MOhm / 22 pF load

## □ Dimensions

Unit : mm

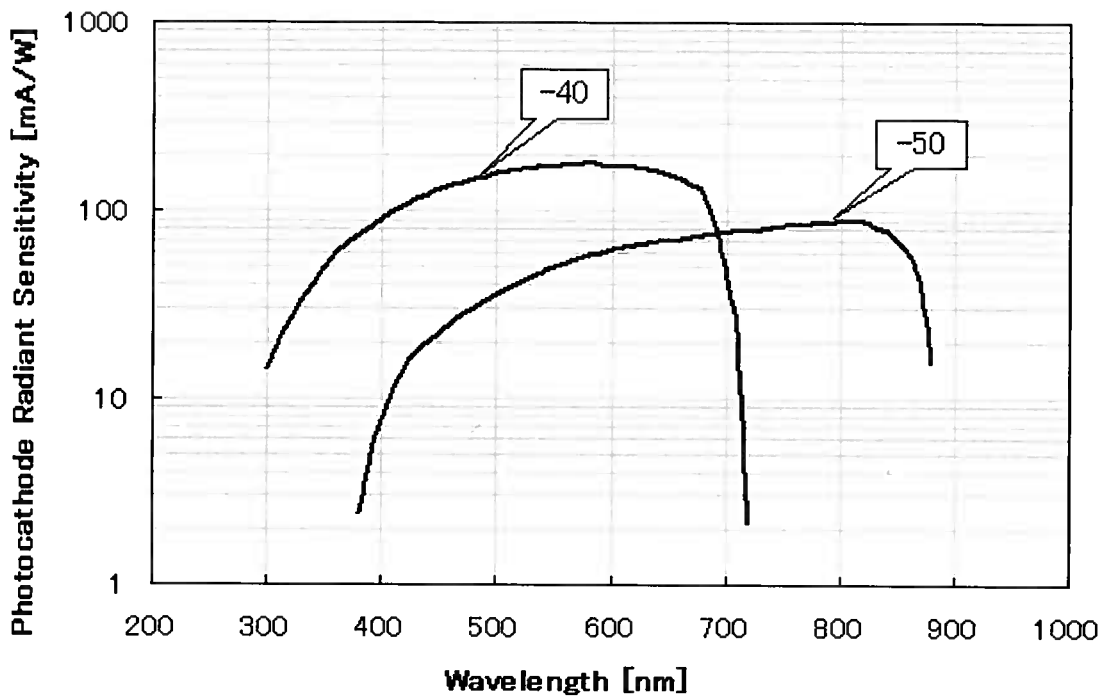


## □ Wiring Examples For Sensitivity Adjustment

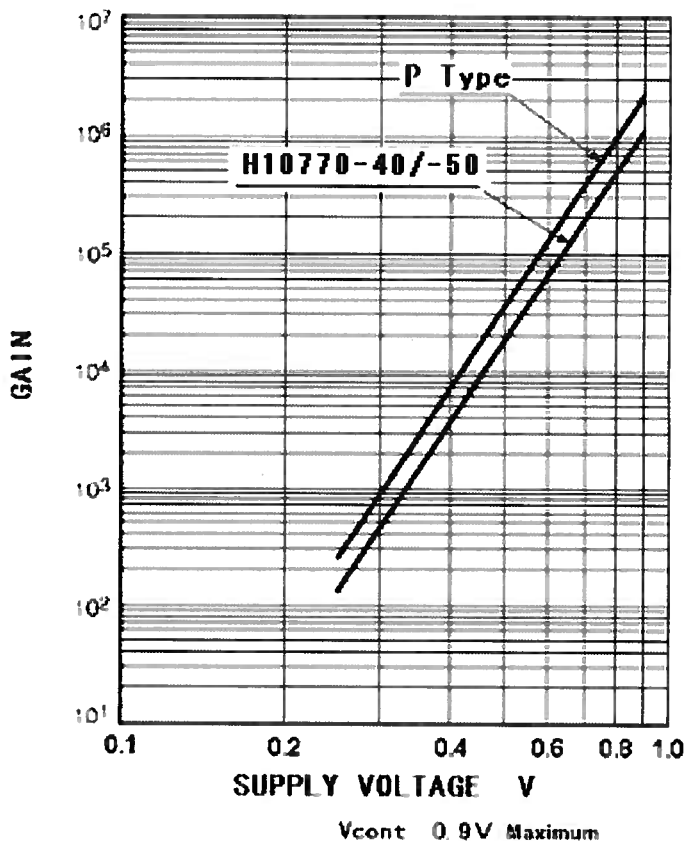


※1 It is recommended to monitor the control voltage with a multimeter and adjust the voltage within maximum +0.9 V.

□ Typical Spectral Photocathode Radiant Sensitivity  
(H10770(P)-40/-50)

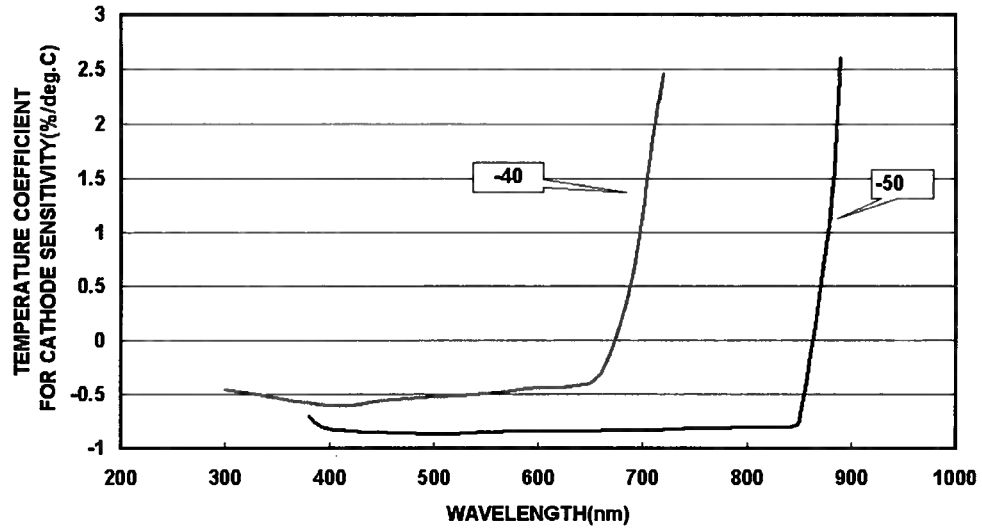


□ Typical Gain Characteristics  
(H10770(P)-40/-50)



Temperature control at 10 Cel

## □ Temperature Coefficient



For further information, contact our sales office in your country.

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Telephone: (81)539-62-5248, Fax: (81)539-62-2205

*Characteristics and specifications are subject to change without prior notice.*

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PHOTOSENSOR MODULE

TYPE : H10770A-40

CUSTOMER: UNIV OF CALIF SAN DIEGO

QUANTITY: 2 pcs.

Serial Number	(1) Cathode Radiant Sens. mA/W	(2) Anode Radiant Sens. A/W	(3) Anode Dark Current nA	Serial Number	(1) Cathode Radiant Sens. mA/W	(2) Anode Radiant Sens. A/W	(3) Anode Dark Current nA
	AA1749 AA1885	187.7 198.4	321000 260000		0.7 0.7		

NOTES

- (1) (2) The light source is a tungsten lamp and the incident light on the photocathode has a wavelength of 550 nm which is obtained through band pass filter.
- (2) (3) Overall control voltage: 0.8 V
- (3) Temp setting 25 °C

Date: April 16, 2009

Approved by: 

# PRELIMINARY

## H10770(P)A-40/-50 Specifications

### PROTECTION CIRCUIT 50 $\mu$ A

#### Maximum Ratings

Parameter	-40/-50 <sup>*1</sup>	Unit
Main unit input voltage	+18	V dc
Operating temperature	+5 to +25	Cel
Storage temperature	-20 to +50	Cel
Output Current	2	$\mu$ A
Control Voltage (Vcontrol)	+0.9(Input impedance for Vcont. is 100 k $\Omega$ )	V

\*1 with protection circuit / limit 50  $\mu$ A

#### Specifications General

(Ta = 25 Cel)

Parameter	-40	-50	Unit
Spectral response	300 to 720	380 to 890	nm
High voltage power supply and Voltage Regulator Supply voltage range	+11.5 to +15.5		V dc
High voltage power supply and Voltage Regulator Supply Current Requirement (Maximum)	62		mA
Supply Adjustable Range (Relative Sensitivity)	1:50		-
Setting Time(Sensitivity Control) <sup>*1</sup>	0.2		s
Effective Area (dia.)	5		mm
Weight (Approx.)	110		g

\*1) Stabilized time in the control voltage adjustment from +1.0 V to +0.5 V.

#### Series Characteristics

(Ta = 25 Cel)

Parameter		-40	-50	Unit
H10770A	Radiant Sensitivity	at 420 nm	54	Typical $\times 10^{-6}$ A/nW
		at 550 nm	88	
		at 800 nm	-	
Dark Current <sup>(A) (B)</sup>	Typical	3.3	4.1	nA
	Maximum	9.3	11.6	
H10770PA	Radiant Sensitivity	at 420 nm	108	Typical $\times 10^{-8}$ A/nW
		at 550 nm	176	
		at 800 nm	-	
	Dark Count <sup>(B) (C)</sup>	Typical	6000	7500
Maximum		18000	22500	
Induced Ripple in Signal <sup>(D)</sup>		0.6		Maximum mV p-p
Anode Pulse Rise Time <sup>(A)</sup>		1.00		ns
Recommended Control Voltage Range Vcontrol		+0.50 to +0.80		V

(A) Control Voltage : +0.8 V ; Temperature control at 25 Cel.

(B) After 30 min storage in darkness.

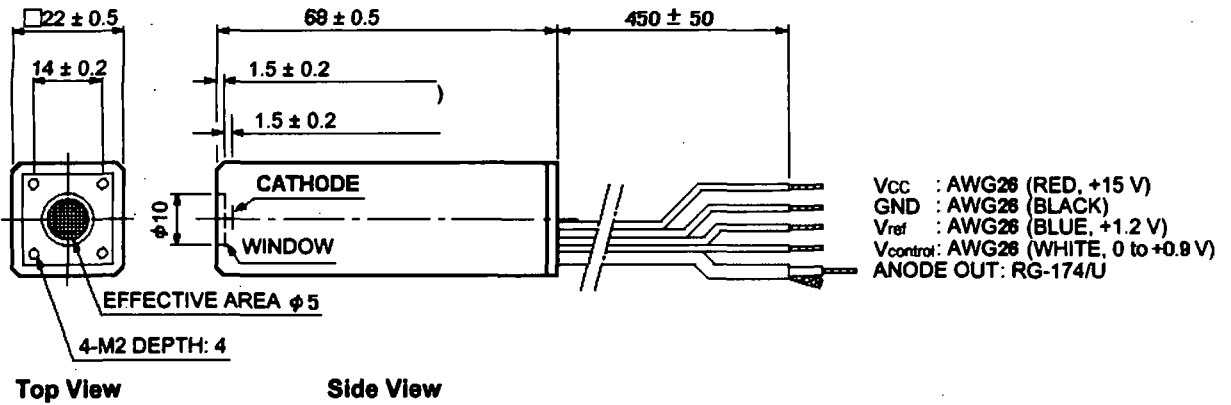
(C) Control Voltage : Plateau ; Temperature control at 25 Cel.

(D) Measured across 1 MOhm / 22 pF load

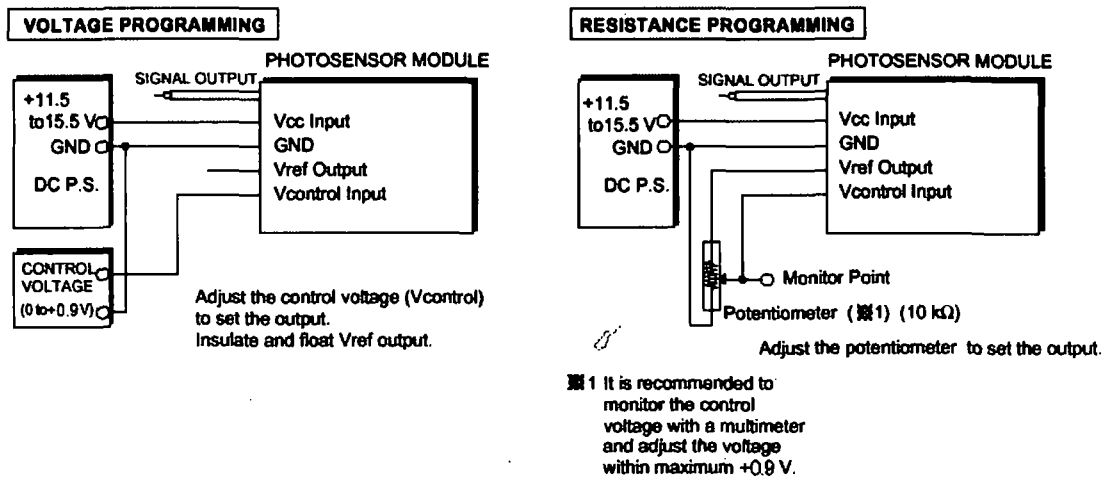
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## Dimensions

Unit : mm

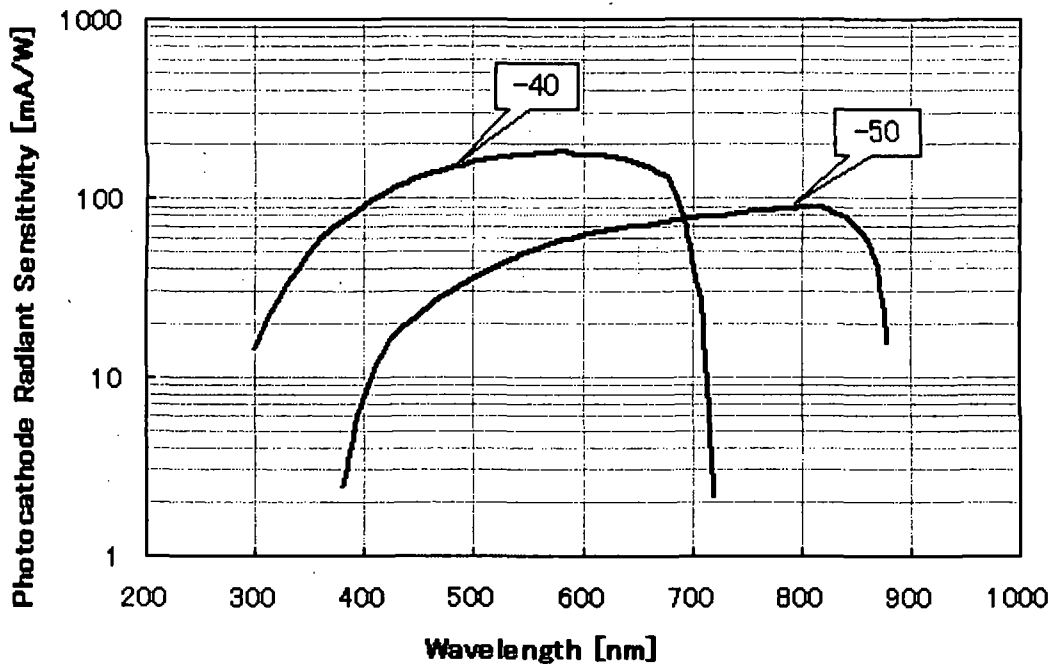


## Wiring Examples For Sensitivity Adjustment

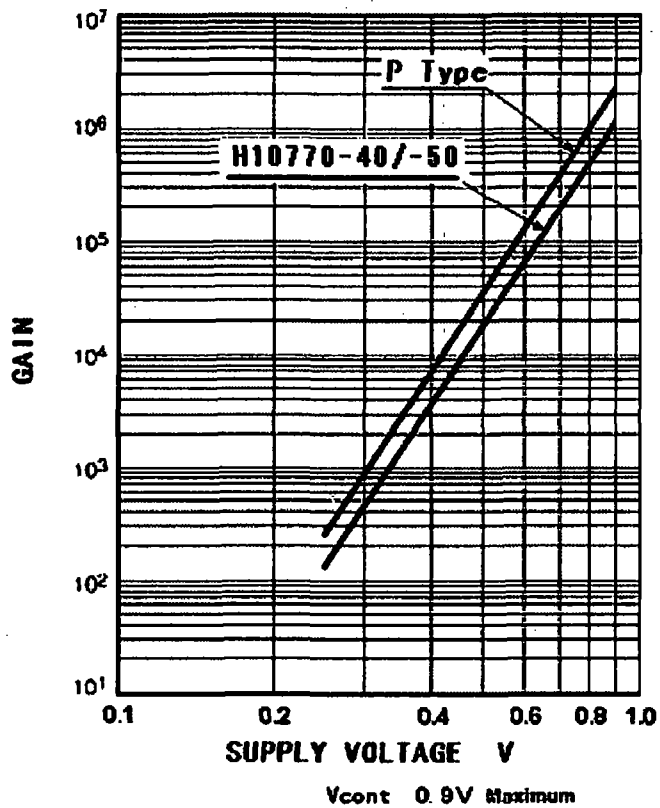




## Typical Spectral Photocathode Radiant Sensitivity (H10770(P)A-40/-50)

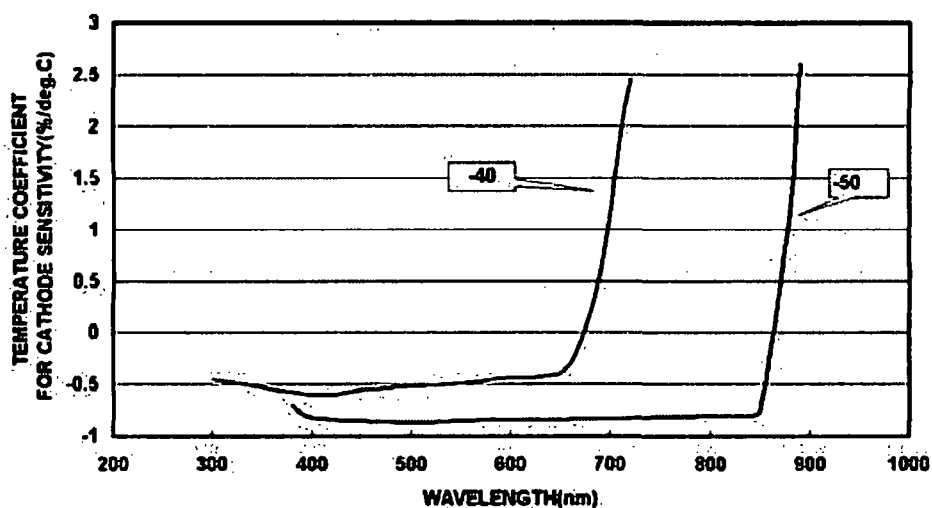


## Typical Gain Characteristics (H10770(P)A-40/-50)



V<sub>cont</sub> 0.9V Maximum  
Temperature control at 10 Cel

## Temperature Coefficient



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