



TECHNICAL DATA SHEET

INFORMATION SHEET

CHA-200 HYBRID PHOTOMETRY DETECTOR

CENTRONIC CHA-200 is a hybrid photometry amplifier with a built-in GaAsP photodiode, MOSFET op-amp and log diodes, resin-coated sealed on a glass epoxy P.C. board with photometry range from 0.005 Lux to 5,000 Lux.

GaAsP photodiode in the photoelectric converter permits use without a visibility compensation filter. The low leakage current of the GaAsP photodiodes eliminates amplifier offset adjustment.

Built-in log diode logarithmically compresses the photoelectric current of the photodiodes and outputs it as a voltage.

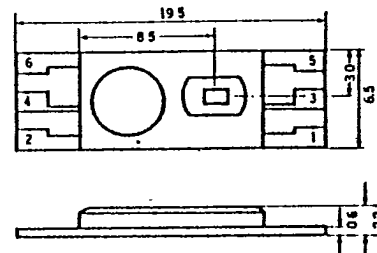
The gain of the photometry amplifier is determined by external resistor. Individual output voltage variations can be easily adjusted with an external variable resistor. In environments where the temperature changes widely, a simple external temperature compensation circuit consisting of transistors, thermistors, and resistors can be used.

Maximum Ratings

 $T_a = 25^\circ\text{C}$

Items	Symbol	CHA-200	Units
Supply Voltage	Vcc	7	V
Current Consumption	Icc	2	mA
Operating Temperature	Topr	-20 ~ +60	°C
Storage Temperature	Tstg	-30 ~ +70	°C

Dimensions



(Notes)

- (1) Pout
- (2) Vcc
- (3) P-
- (4) GND
- (5) Vs
- (6) Vr

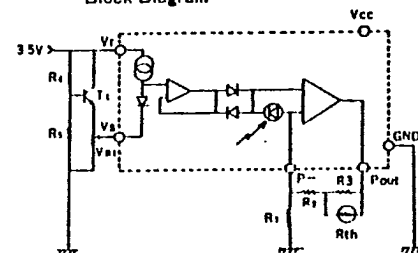
Characteristics (Vcc=4.5V, Vr=3.5V)

 $T_a = 25^\circ\text{C}$

Items	Symbol	CHA-200 Conditions	MIN. TYP. MAX.	Units
Operating Voltage	Vcc		3.5 4.5 6.5	V
Current Consumption	Icc		1.0	mA
Photometry Range	E		5×10^{-3} 5×10^3	Lux
Output Voltage	Pout	1 Lux	560 640 720	mV
Linearity	L	0.05 ~ 500 Lux	216 240 264	mV
Colortemp. error	ΔCE		15	%

$$R_1 = 1 \text{ k}\Omega, R_2 = R_3 = R_{th} = 0, V_s = 400 \text{ mV}$$

Block Diagram



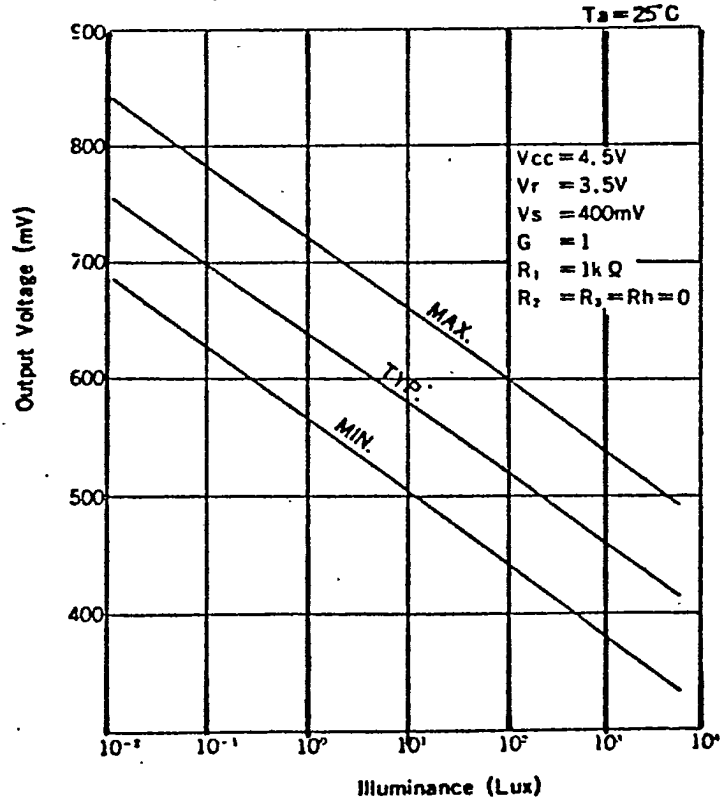
CENTRONIC INC.

E-O Division

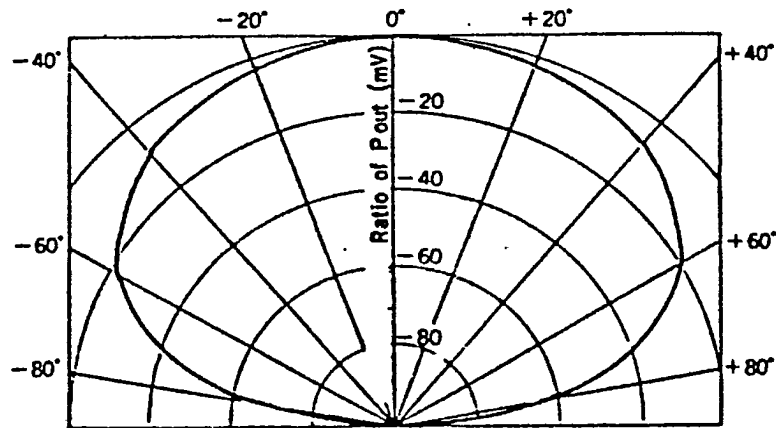
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Output Voltage vs Illuminance



Sensitivity Diagram



Angular Displacement (θ)
 $V_{cc} = 5\text{V}$, $V_r = 3.5\text{V}$, $V_s = 220\text{mV}$, $G = 1$