

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply voltage	V <sub>DD</sub>	-	3.8	V
Digital output voltage range	V <sub>O</sub>	-0.5	3.8	V
Digital output current	I <sub>O</sub>	-1	20	mA
Storage temperature range	T <sub>stg</sub>	-40	85	°C
ESD tolerance	human body model	-	2000	V

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply Voltage	V <sub>DD</sub>	2.4	2.5	3.0	V	
Operating Temperature	T <sub>a</sub>	-30	-	85	°C	
SCL, SDA input low voltage	V <sub>IL</sub>	-0.5	-	0.58	V	
SCL, SDA input high voltage	V <sub>IH</sub>	1.13	-	3.6	V	2.4 ≤ V <sub>DD</sub> ≤ 2.6
		1.25	-	3.6	V	2.4 ≤ V <sub>DD</sub> ≤ 3.0

### Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply current	I <sub>DD</sub>	-	0.24	0.6	mA	Active
		-	3.2	15	μA	Power down
INT, SDA output low voltage	V <sub>OL</sub>	0	-	0.4	V	3 mA sink current
		0	-	0.6	V	6 mA sink current
Leakage current	I <sub>LEAK</sub>	-5	-	5	μA	

**Operating Characteristics, High Gain (16X),  $V_{DD} = 2.5\text{ V}$ ,  $T_a = 25\text{ }^\circ\text{C}$ , (unless otherwise noted) (see Notes 2, 3, 4, 5)**

Parameter	Symbol	Channel	Min	Typ	Max	Unit	Conditions
Oscillator frequency	fosc		690	735	780	kHz	
Dark ADC count value		Ch0	0		4	counts	$E_e = 0$ , $T_{int} = 402\text{ ms}$
		Ch1	0		4		
Full scale ADC count value (Note 6)		Ch0			65535	counts	$T_{int} > 178\text{ ms}$
		Ch1			65535		
		Ch0			37177		$T_{int} = 101\text{ ms}$
		Ch1			37177		
		Ch0			5047		$T_{int} = 13.7\text{ ms}$
		Ch1			5047		
ADC count value		Ch0	750	1000	1250	counts	$\lambda_p = 640\text{ nm}$ , $T_{int} = 101\text{ ms}$
		Ch1		200			$E_e = 36.3\text{ }\mu\text{W/cm}^2$
		Ch0	700	1000	1300		$\lambda_p = 940\text{ nm}$ , $T_{int} = 101\text{ ms}$
		Ch1		820			$E_e = 119\text{ }\mu\text{W/cm}^2$
ADC count value ratio: Ch1/ Ch0			0.15	0.2	0.25		$\lambda_p = 640\text{ nm}$ , $T_{int} = 101\text{ ms}$
			0.69	0.82	0.95		$\lambda_p = 940\text{ nm}$ , $T_{int} = 101\text{ ms}$
Irradiance responsivity	Re	Ch0		27.5		counts/ $(\mu\text{W/cm}^2)$	$\lambda_p = 640\text{ nm}$ , $T_{int} = 101\text{ ms}$
		Ch1		5.5			
		Ch0		8.4			$\lambda_p = 940\text{ nm}$ , $T_{int} = 101\text{ ms}$
		Ch1		6.9			
Illuminance responsivity	Rv	Ch0		36		counts/ lux	Fluorescent light source: $T_{int} = 402\text{ ms}$
		Ch1		4			
		Ch0		144			Incandescent light source: $T_{int} = 402\text{ ms}$
		Ch1		72			
ADC count value ratio: Ch1/ Ch0				0.11			Fluorescent light source: $T_{int} = 402\text{ ms}$
				0.5			Incandescent light source: $T_{int} = 402\text{ ms}$
Illuminance responsivity, low gain mode (Note 7)	Rv	Ch0		2.3		counts/ lux	Fluorescent light source: $T_{int} = 402\text{ ms}$
		Ch1		0.25			
		Ch0		9			Incandescent light source: $T_{int} = 402\text{ ms}$
		Ch1		4.5			
(Sensor Lux) / (actual Lux), high gain mode (Note 8)			0.65	1	1.35		Fluorescent light source: $T_{int} = 402\text{ ms}$
			0.60	1	1.40		Incandescent light source: $T_{int} = 402\text{ ms}$