



MEAS EMITTER ASSEMBLY ELM-4000 SERIES

SpO₂ optical sensor component

- ◆ Dual Drive
- ◆ Lead Frame Construction
- ◆ Pulse Oximetry Component
- ◆ Clear Epoxy

Low oxygen level can put a strain on cell functioning including the heart and brain. This is critical in acute medical situations like post-op recovery. TE Connectivity (TE) 's SpO₂ optical components provide leading accuracy in oxygen level detection.

With more than 27 years of proven reliability and expertise, TE has designed SpO₂ sensors with best-in-class flexibility to accommodate multiple wavelength options.

Our ability to provide both components and complete sensor packages makes us a leading choice for pulse oximetry applications that require high degrees of precision, durability and performance.

The ELM-4000 series emitter assemblies are specially designed for medical applications where selection of peak wavelength is a key requirement. Emission source material is GaAIAs in conjunction with GaAlP complete with clear epoxy lens.

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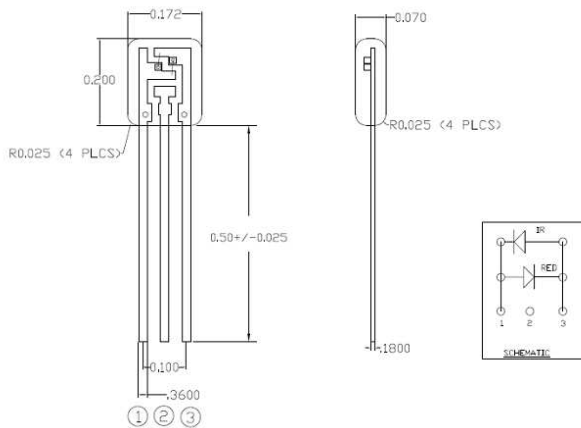
Features

- ◆ 660 nm ±3 nm Peak Wavelength Red LED
- ◆ Three IR Wavelength Choices
- ◆ Dual Drive

Applications

- ◆ Pulse Oximetry
- ◆ SpO₂ Finger/Ear Reusable Probes
- ◆ SpO₂ Disposable Strip or Butterfly Probes

Dimensions (ELM-4001)



RED 660nm

Parameter @ 25°C	Symbol	Conditions	Min.	Typ.	Max.	Absolute	Unit
Forward Voltage	V_f	$I_f=20\text{mA}$		1.85	2.30		V
Reverse Voltage	V_{B_r}	$I_{B_r}=10\mu\text{A}$	3.0				V
Reverse Current	I_r	$V_r=3\text{V}$			100		μA
Radiated Power	P_o	$I_f=20\text{mA}$		1			mW
Peak Wavelength	λ_p	$I_f=20\text{mA}$	657	660	663		nm

INFRARED 880nm (ELM-4001)

Parameter @ 25°C	Symbol	Conditions	Min.	Typ.	Max.	Absolute	Unit
Forward Voltage	V_f	$I_f=20\text{mA}$			1.50		V
Reverse Voltage	V_{B_r}	$I_{B_r}=10\mu\text{A}$	3.0				V
Peak Wavelength	λ_p	$I_f=20\text{mA}$	870	880	890		nm
Spectral Bandwidth	$\lambda\Delta$	$I_f=20\text{mA}$		60	80		nm
Radiated Power	P_o	$I_f=20\text{mA}$	≥ 0.6	1			mW

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SpO₂ Optical Sensor Component

INFRARED 940nm (ELM-4002)

Parameter @ 25°C	Symbol	Conditions	Min.	Typ.	Max.	Absolute	Unit
Forward Voltage	V _f	I _f =20mA		1.20	1.40		V
Reverse Voltage	V _{B_r}	I _{br} =10μA	5.0				V
Peak Wavelength	λ _p	I _f =20mA	930	940	950		nm
Spectral Bandwidth	λΔ	I _f =20mA		45			nm
Radiated Power	P _o	I _f =20mA	>=0.6	1			mW

INFRARED 905nm (ELM-4003)

Parameter @ 25°C	Symbol	Conditions	Min.	Typ.	Max.	Absolute	Unit
Forward Voltage	V _f	I _f =20mA		1.20	1.40		V
Reverse Voltage	V _{B_r}	I _{br} =10μA	5.0				V
Peak Wavelength	λ _p	I _f =20mA	900	905	910		nm
Spectral Bandwidth	λΔ	I _f =20mA		70			nm
Radiated Power	P _o	I _f =20mA	>=0.6	1			mW

Ordering Information

Description	Model	Part Number
Emitter Assembly; Lead Frame; 660nm/880nm	ELM-4001	20-0599
Emitter Assembly; Lead Frame; 660nm/940nm	ELM-4002	11032254-00
Emitter Assembly; Lead Frame; 660nm/905nm	ELM-4003	20-0584

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