

## EM - SERIES PREAMPLIFIERS

The EM-series units are stand-alone BNC IN / BNC OUT preamplifier modules providing single or dual stage amplification for all EOS photodetectors. Models are included for photodiodes and photoconductors with either AC or DC coupling. Some models contain features such as offset control, variable gain, dual outputs, and bias control. Bandwidths from DC up to 100MHz are available. EOS guarantees that the specifications of all photodetector/amplifier combinations are met at the output of the amplifier.

Unless otherwise noted all preamplifiers require +,- 9VDC to +,- 15VDC, 50mA. Low noise power supplies, such as EOS Model PS-1, are essential for proper operation. High current capacity batteries may also be used.

### Current mode preamplifiers:

Model	Gain	Bandwidth	Noise	Description	Size
<b>EM-70/eX</b>	Rf = 10eX	DC-200kHz, varies with Rf	In = $1.5 \times 10^{-15}$ A/Hz <sup>1/2</sup> Vn = 6 nV/Hz <sup>1/2</sup>	Single stage, switchable gain (-10)	1" x 1" x 2" plus connectors
<b>EM-70/3/eX</b>	Rf = 10eX	DC - 200kHz, varies with Rf	In = $1.5 \times 10^{-15}$ A/Hz <sup>1/2</sup> Vn = 6 nV/Hz <sup>1/2</sup>	Single stage, switchable gain (-10, -100)	1" x 1" x 2" plus connectors
<b>EM-72/eX</b>	Rf=10e; x10 2 <sup>nd</sup> stage	DC - 500kHz, varies with Rf	In = $1.5 \times 10^{-15}$ A/Hz <sup>1/2</sup> Vn = 6 nV/Hz <sup>1/2</sup>	2-stage, dual output 1 <sup>st</sup> = DC 2 <sup>nd</sup> = x10AC	1" x 1.5" x 2" plus connectors
<b>EM-75/eX</b>	Rf = 10eX	DC-200kHz, varies with Rf	In = $1.5 \times 10^{-15}$ A/Hz <sup>1/2</sup> Vn = 6 nV/Hz <sup>1/2</sup>	Single stage, switchable gain (-10), screw adjust offset control	1" x 1.5" x 2" plus connectors

### Voltage mode preamplifiers:

Model	Gain	Bandwidth	Noise	Description	Size
<b>EM-20</b>	x1000 / x100	5Hz - 50 /500kHz	In = 1.5 pA/Hz <sup>1/2</sup> Vn = 0.8 nV/Hz <sup>1/2</sup>	Single stage, switchable gain	1" x 1" x 2" plus connectors
<b>EM-21</b>	x1000 / x100	5Hz - 1MHz	In = 1.5 pA/Hz <sup>1/2</sup> Vn = 0.8 nV/Hz <sup>1/2</sup>	2-stage, dual outputs (x1000, x100)	1" x 1.5" x 2" plus connectors
<b>EM-25</b>	X200 / x20	5Hz - 20kHz	In = 1.5 fA/Hz <sup>1/2</sup> Vn = 6 nV/Hz <sup>1/2</sup>	High input impedance for PbS, PbSe detectors; single stage, switchable gain	1" x 1" x 2" plus connectors
<b>EM-50</b>	x300 / x30	DC - 100kHz	In = 1.5 pA/Hz <sup>1/2</sup> Vn = 0.8 nV/Hz <sup>1/2</sup>	Single stage DC coupled unit with offset control, switchable gain	1" 1.5" x 2" plus connectors
<b>EM-55</b>	x100 / x10 + x10	DC - 1MHz	In = 1.5 pA/Hz <sup>1/2</sup> Vn = 0.8 nV/Hz <sup>1/2</sup>	DC coupled unit with 2 <sup>nd</sup> stage (x10 AC); switchable gain on 1 <sup>st</sup> stage, and active feedback	1.5" x 1.5" x 2" plus connectors

### Note:

**All voltage mode preamplifiers include provision for detector biasing.**

