LETSOP LTD

Manufacturers and suppliers of electro-optic components

M500 High Voltage Linear Amplifier

Electro-optic modulators are voltage driven devices and in general high voltages are required. Pockels cells also almost always present a capacitive load to the driver which can cause stability problems when used with amplifiers not designed specifically for the purpose.

One of the most common applications for this amplifier is to drive a transverse field KD*P or ADP cell for analogue modulation. The Pockels cell is typically either optically or electrically biased to the quarter wave operating condition so that the cell is operating at its most linear point in its transfer characteristic. The amplifier is then able to apply a differential voltage across the load which swings by up to >275V peak and in opposite phase on each of the terminals across which the load is connected. This then produces a field change in the device equal to that from a >500V single ended amplifier which is sufficient for full modulation with 4mm aperture transverse field ADP and KD*P modulators. Typical applications are for example, true polarization rotation (with an added waveplate) and as a modulator for multi-photon microscopy.

To best match with the BNC sockets on the matching EM200/EM400 series modulators, the amplifier output terminals are fitted with BNC type connectors which enables them to be connected by conveniently available low-cost cable assemblies >500V peak to peak differential output voltage

Suitable for larger aperture transverse field KD*P and ADP low-voltage modulators and smaller RTP Pockels cells.

Full power –3dB bandwidth of >5MHz.

Rise/fall time <70ns at 500V differential <60ns at 400V differential



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Product Specifications

Parameter	Specification
Full amplitude frequency response	>5MHz (sine input)
Small signal frequency response (20% of full amplitude)	~10MHz
Rise and fall time, full signal	<70ns
Amplifier gain (differential output swing divided by input swing)	133 (±2%)
Input voltage for full output	2.5V Peak to Peak
Input impedance	50 ohm
Cabinet form	63HP width x 3U height rack
Case dimensions (mm)	160 (height) x 360 (width)
	310 depth
Mains input voltage	90 – 264V ac
	50/60Hz

Specifications for guidance only, subject to modification without notice.



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