

LEYSOP LTD

Manufacturers and suppliers of electro-optic components

Miniature Pockels Cells for Laser Q-Switching



Longitudinal electric field

KD*P design

Dry or fluid filled

High power handling

High extinction ratio

>1000:1

Low optical loss

Compact \varnothing 25mm package

The compact Pockels cell models EM508M-EM512M have for many years satisfied the needs of our customers for smaller (compared to the EM500 range) Pockels cells for OEM applications. With size constraints becoming ever tighter, we have developed a smaller model still, the EM510C. This cell is intended predominately for Q-switching applications, although of course it could find other uses anywhere a more modestly sized longitudinal field KD*P based Pockels cell is desired.

What then are the differences between this cell and the EM500 series? Obviously the first difference is size. The EM500M cells are in a (sort of de-facto industry standard) 35mm diameter package. The miniature EM510C is in a 25mm diameter package instead. Secondly, although listed as an EM510C, the cell in fact offers a clear working aperture of 8mm from a 10mm diameter crystal; the working aperture is defined by a ceramic disc. Thirdly, although it is technically

possible to provide the cell in either fluid filled or dry construction, we do not believe that the smaller package provides room for a sufficiently sized air bubble to allow for adequate thermal expansion under the sort of operating conditions in which an OEM laser Q-switch might be found. We therefore offer this only as a dry cell with anti-reflection coated crystal and windows. This brings us to the final difference which is that we are not able to stock a wide range of windows for alternative operating wavelengths in the particular size used for this cell. It is for this reason that the EM510C is offered only as standard for the wavelength range 1030-1064nm which is the range over which the stock windows perform optimally. Other wavelengths will be available to special order, but please note that costs will be higher for this option.

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Product Specifications

| Parameter | EM510C |
|-----------------------------------|---|
| Aperture: | 8mm |
| Wavelength Range: | 1030 – 1064nm standard, others available to special order |
| Halfwave Voltage @ 1.064 μ m: | Approximately 6.2 kV static, 7.5kV dynamic |
| Maximum Voltage: | 8kV |
| Optical Rise Time: | < 1.0ns |
| Contrast Ratio @ 1.06 μ m: | >1000:1 |
| Capacitance Unterminated: | <~5 pF |
| Damage Threshold: | 600 MW/cm ² |
| Insertion loss with AR coatings: | ~2% |
| Physical Dimensions: | Ø25mm, 43mm long |