Smart Vision Lights have linear Polarizers available. Polarizing filters can reduce reflections on specular surfaces. A polarizer can be added in the field. Filter for light series – L300, ODL300, S75, ODS75, S30, R80 & R130.

- Transmittance: single: 38%
- Color: neutral gray
- Polarizing efficiency: 99.98%
- Wavelength: 400~700nm
- Thickness: .030” (.762mm)
- Direction: Linear

**LINEAR POLARIZER LIFETIME**

**Use of Linear Polarizer and High Power LEDs**

High Power LED’s are increasing in output thru continued product development by LED manufacturers. High Power LED’s in white are now available in 100+ lumens in output intensity. Smart Vision Lights continues product improvement by using the highest power LED’s available. The new High Power LED’s can damage a linear polarizer. A Linear Polarizer has a typical transmission of 38% while blocking 62% of the light not in the polarization plane. The 62% of light blocked is energy that is turned into heat. This heat must be dissipated or a breakdown of the material will occur over time. Linear Polarizers currently available cannot dissipate the heat when the latest 100+ lumen high power LED’s are used in lights.

**Strobing Linear Polarizers on Lights**

The Linear Polarizer material will fail when the LED light is used in a constant operation. Smart Vision Lights mandates a limited exposure time for linear polarizers. Using the Light in strobe application will limit the exposure time and heat energy needed to be dissipated by the linear polarizer. A 10% duty cycle or less is recommended when a linear polarizer is used on a light.

Duty Cycle \((D)\) is defined as the ratio between Strobe Time and Rest Time

Recommend Duty Cycle for Linear Polarizer is 10%

Calculating Rest Time - \(R_t\)

\[
R_t = \frac{S_t}{D}
\]

- \(S_t\) is the Strobe Time
- \(R_t\) is the Rest Time
- \(D\) is Duty Cycle

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