

# TECHNICAL GUIDELINES



## VARIABLE NEUTRAL DENSITY FILTER ND2-400



An example of the «Maltese cross» shape.

The variable neutral density filters are made of two polarizing elements mounted one above the other. The rotation of the mount changes the angle made by the two polarization planes, and the resulting density of the filter by doing so. When this angle is equal to 90°, the light transmitted by the filter reaches a minimum. The maximal density is then reached but the filter shows a typical optical phenomenon in the shape of a «Maltese cross».

**This optical phenomenon does not mean a defective filter.**

The bigger the angle of view is, the faster the phenomenon appears, even if the ND400 maximal density is not reached yet.

**Conclusion: the shorter the focal length, the earlier this phenomenon occurs.**



Consequently, the effective **MAX** position without the «cross» effect varies according to the focal length used by the photographer.

### FOCAL LENGTHS

**24mm** (full frame 24x36)

**16mm** (APS-C / super 35)

**12mm** (Micro 4/3)

**35mm** (full frame 24x36)

**23.5mm** (APS-C / super 35)

**17.5mm** (Micro 4/3)

**45mm** (full frame 24x36)

**30mm** (APS-C / super 35)

**22.5mm** (Micro 4/3)

### EFFECTIVE DENSITY RANGE (MIN/MAX)

MIN

MAX

ND2 → ND40  
5 1/3 f.stops

ND2 → ND80  
6 1/3 f.stops

ND2 → ND400  
8 2/3 f.stops

The use of focal lengths shorter than 24mm (24x36) is **not recommended**.