

## McGill Commercial House

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### Detailed Technical Information for **RAYNOX DCR-250 Super Macro Lens**

(This Update: 15 Aug 2013)

The DCR-250 macro converter lens can be used with any DSLR lens in the range of 50mm to 300mm focal length. Lenses of filter diameters exceeding 67mm require step-down rings. Depending on lens specifications, this lens may yield ratios from 1:2 in the macro range to 11:4 in the micro range, including the very popular macro ratio of 1:1 (ie. life size on 35mm film format). There will be no degradation to optical performance of the main lens nor is there a need to vary the f-stop. Hence this macro lens is deemed as a BETTER alternative to extension tubes which affects f-stops, resulting in darker images due to loss of ambient light.

First-time users may set the DSLR lens to manual focus mode to discover the optimal focusing distance. Simply place your camera at about 5cm from the object, then shift it slowly, away from the object while looking through the viewfinder or use our Right Angle Viewfinder to see if the image is focused sharply. For most lenses, you should be able to get a very sharp image at about **12cm** from the object. **(You may consider a conventional but more expensive DSLR macro lens which allows you to focus at 30cm [from the CCD Sensor!] if you are not comfortable with shooting around 12cm from object with respect to the front of the camera lens!)** After that, you may proceed with either manual or auto focusing at that optimal distance. The original capabilities of your camera will not be affected in any way.

Although the DCR-250 is versatile with many DSLR lenses, vignetting (edge darkening) might occur if lenses have:

1. shorter focal lengths of less than 50mm
2. very small apertures
3. very close focusing lenses
4. certain lens design specifications which are not compatible, such as the 18-200mm Nikkor f/3.5-5.6G ED DX VR.

Popular DSLR lenses which are compatible with the DCR-250 -

#### **Nikon:**

16-85mm (slight vignetting at 85mm), 35mm f/1.8G, AFD 50mm, 60mm, 85mm prime lens, 18-55mm (no vignetting after 27mm), 18-70mm (vignetting throughout zoom, obvious vignetting at the sides at 70mm), 18-105mm VR (vignetting throughout zoom, slight vignetting at 105mm), AF-S 18-135mm (slight vignetting at maximum zoom), 55-200mm VR, 55-300mm f/4.5-5.6 (no vignetting after 150mm), 70-200mm VR (no vignetting after 160mm), 105mm f/2.8, DC 105mm f/2 (requires step-down ring), 200mm & other macro lenses, 70-300mm, 75-300mm, AF-S Nikkor 24-70mm f/2.8G ED (no vignetting after 60mm but

requires a step-down ring), AF 70-210mm. Some lenses with filter size of 72mm or 77mm are not compatible, such as the 18-200mm VR.

#### **Canon:**

18-55mm, 18-135mm (minor vignetting), 18-200mm (no vignetting after 100mm, requires a step-down ring), 17-85mm (~15% vignetting at 85mm), EF 24-105mm f/4 (requires a step-down ring), EF 28-70mm f/3.5-4.5 II, 28-105mm, 55-250mm, 50mm, 85mm f/1.8, 100mm, 180mm (requires a step-down ring), 70-200mm f/4, 70-300mm f/4-5.6, 135mm f/2 (super sharp, requires a step-down ring);

#### **Olympus (Four Thirds Lenses):**

Zuiko 70-300mm 1:4-5.6 ED, Zuiko 50mm Macro, Zuiko 18-180mm 1:3.5-6.3 (no vignetting after 60mm), Zuiko 14-42mm (vignetting throughout, not suitable for macro beginners); Zuiko 35mm 1:3.5 Macro, Zuiko 40-150mm Kit Lens (vignetting throughout), Zuiko 55-200mm (vignetting throughout);

#### **Panasonic:**

Lumix G 14-42mm, Lumix G1 14-45mm (no vignetting after 22mm), 45-200mm, GH1 14-140mm (no vignetting after 110mm), 14-150mm f/3.5-5.6 (requires a step-down ring), 100-300mm f/4.0-5.6 G;

#### **Pentax:**

DA 18-55mm; DA 18-250mm f/3.5-6.3, FA 35mm f/2, DA 35mm f/2.8, DA 35mm f/2.4 AL, DA 40mm f/2.8, FA 50mm f/1.4, FA 50mm f/1.7, FA 77mm f/1.8 (7 preceding lenses require a step-up ring), DA\* 50-135mm, DA 50-200mm f/4-5.6, DA 55-300mm f/4-5.8, SMC 135mm f/2.5;

#### **Samsung:**

18-55mm f/3.5-5.6 OIS, 45mm f/1.8, 45mm f/1.8 [T6] 2D/3D, 50-200mm f/4.0-5.6 ED OIS II, 60mm f/2.8 Macro ED OIS SSA;

#### **Sigma:**

18-200mm f/3.5-6.3 (slight vignetting throughout), 50mm f/1.4, 70-300mm f/4-5.6 APO DG MACRO, 150mm f/2.8 EX DG HSM Macro Lens;

#### **Sony:**

18-55mm 1:3.5-5.6 SAM (no vignetting after 24mm), 16-80mm 1:3.5-4.5 (slight vignetting at 80mm), 18-70mm 1:3.5-5.6 (no vignetting after 28mm), 18-250mm 1:3.5-6.3 (slight vignetting at 250mm), 30mm f/2.8 DT, 50mm f/1.8 DT SAM (both 30mm & 50mm lenses require a step-up ring), 55-200mm SAM, E-mount 18-55mm 1:3.5-5.6 (requires a step-up ring, no vignetting after 40mm);

#### **Tamron:**

SP60mm f/2, SP90mm, 18-200mm, 18-250mm (no vignetting above 200mm if focus is set to infinity), 28-75mm (slight vignetting at 75mm), 28-300mm, 70-300mm. Not suitable: 17-50mm f/2.8 & 18-270mm (serious vignetting).

#### **Tokina:**

100mm f/2.8.

#### **Voigtlander:**

Ultron 40mm f/2.

(NOTE: Users of DSLR lenses with more than 67mm diameter threads, such as the Nikon VR18-200mm, should consider the DCR-5320PRO 3-in-1 Macro Lens Set due to possible excessive vignetting. However this combination needs to be tripod-mounted due to excessive weight!)

Range of lenses suitable for use with the DCR-250 (also known as MacroExplorer 2.5x Lens) can be determined by using the chart found on the next page. Remember to extrapolate the lens focal length by multiplying with the relevant crop factor if your DSLR camera is not using a full-frame sensor!

The DCR-250 has also been extremely popular with users of normal digital cameras. It also works well with super zoom prosumer models with more than 20x optical zoom! Some common digital cameras which can be attached directly to the DCR-250 using the supplied 52-67mm universal snap mount:

Canon PowerShot Superzoom Series  
Panasonic Lumix FZ Series  
Fujifilm S Series  
Sony DSC Series

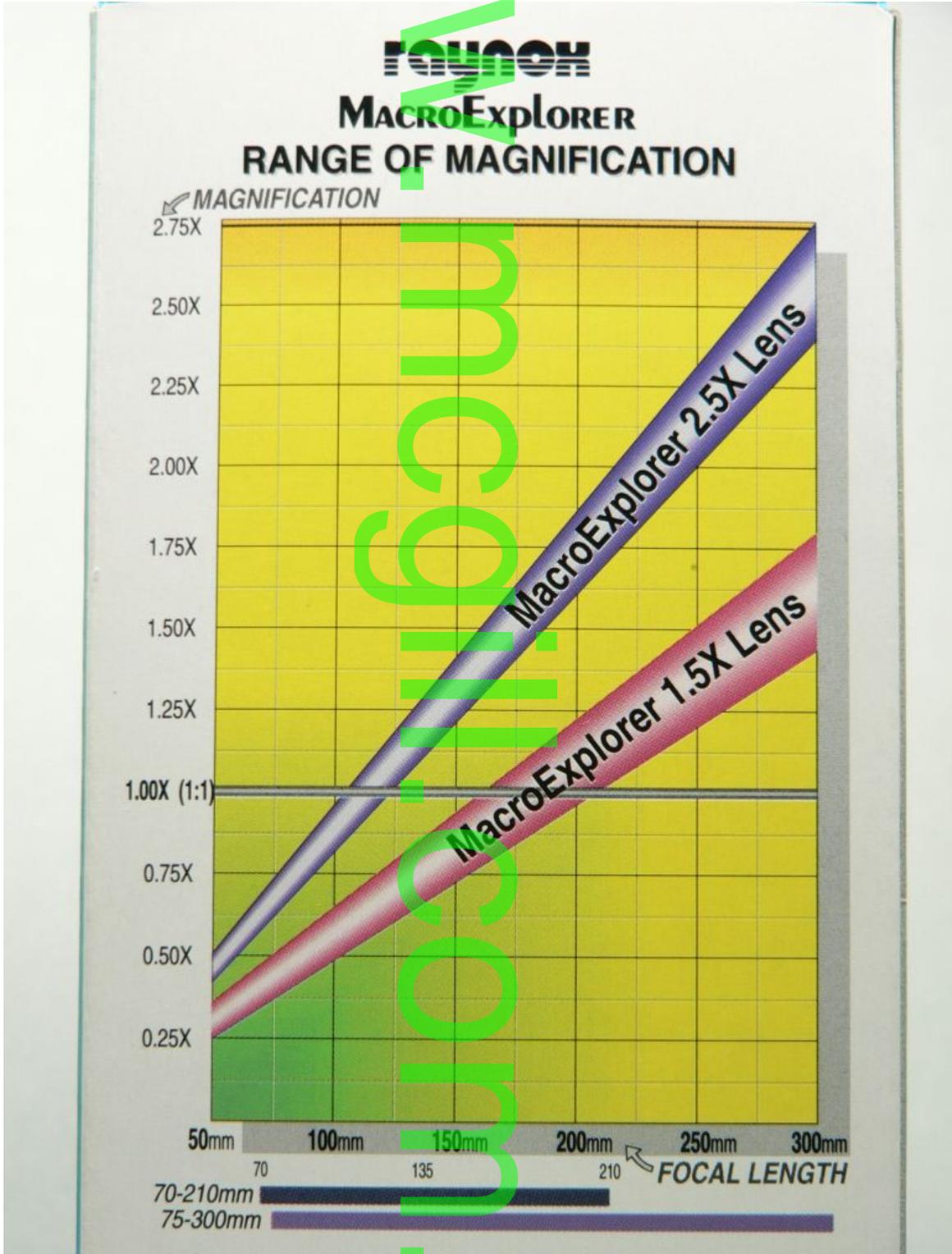
Email us your camera model to see if there is a need to get an optional lens adapter to connect to it.

Written by:  
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**Addendum:**

What are the differences of the models below:

1. Raynox DCR-250 Super Macro Lens
2. Raynox MSN-202 Super Macro Lens
3. McGill-Raynox CM-2000A MacroExplorer 3-in-1 Set

DCR-250 appeals most to a client who wants to take superb macro pictures with minimal investment, as it is the most affordable of the 3 lenses mentioned. With a diopter value of +8.0, this macro converter lens easily magnifies any object to a magnification level beyond the original capability of his compact digital camera or DSLR camera lens. It is best used with digital cameras of more than 10x optical zoom and with DSLR lenses having more than 50mm in focal length. There should be no need to use a tripod if the hands are relatively steady when using this lens.

The McGill-Raynox CM-2000A is a custom-made MacroExplorer set containing both the DCR-150 (+4.8 diopter) and DCR-250 (+8.0 diopter) lenses. The lenses can be used on its own or combined. When used together with the supplied adapter ring, DCR-150 and DCR-250 can be combined or "stacked" so as to achieve an even higher level of magnification. The combined diopter value is +12.8. This set certainly appeals to clients who desire to shoot a wide variety of objects, ranging from small bugs to palm-sized flowers. In fact, the CM-2000A is the most popular model preferred by DSLR camera users, since most of them have 2 or more lenses, thus making it possible to employ different combinations of magnification to suit their needs. It is truly a great and versatile investment which can last for ages with proper care.

The DCR Series were originally designed for 35mm SLR camera lenses a few decades ago, in an attempt to replace extension tubes, which were and are still cumbersome to use and seriously impair good ambient lighting. These lenses have front threads to connect to other accessories supplied by McGill, such as lighting systems. Please check the McGill website for more information.

The MSN-202 is a super macro converter lens which has a diopter value of +25. Thus it is 3x more powerful than the DCR-250! As with all aspects of macro photography, the depth of view is extremely shallow even when used with a 50mm DSLR lens due to such a high magnification. This lens is most suitable for use with digital cameras with less than 5x optical zoom, such as the highly popular Panasonic Lumix LX series camera or Canon Powershot A Series. In some cases, the main camera may have to be tripod-mounted so as to produce pictures of high clarity. This lens does not come with any front thread and hence, does not allow attachment of other accessories. The lens size is also smaller than the DCR series.