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# Magnifiers



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## 2. Spectacle magnifier

- It is a spectacle mounted convex lens this uses the principle of relative distance magnification.

### Types:

1. **Full field SM:** can be listed different models below
  - Spherical: used up to +8D.
  - Aspheric: range up to +48D.
  - Aplanatic: range from 2X to 20X.
2. **Half eye SM:** available with base in prism to provide binocularity.



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**Fig no 2 :Spectacle magnifier**



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**Total range of low vision optical  
devices**



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# Advantages

1. Psychologically acceptable.
2. Useful for prolonged reading.
3. Larger field for view.
4. Hands free .



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# Disadvantages

1. Short working distance
2. Decreased illumination
3. Inconvenient for spot reading
4. Can not be used in patient with eccentric fixation
5. Limited range of magnification
6. Expensive
7. May not be effective in constricted fields.



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## 3. Stand magnifier

- It is a convex lens mounted at a fixed distance from reading materials .

### Types

1. Spherical lenses
2. Aspherical lenses
3. Bi – aspheric lenses
4. Aplanatic lenses





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**Fig no 3 : Stand  
magnifier**





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# Advantages

1. Variable eye to lens distance
2. Rigid lens mounting
3. May have it own light source
4. Specific uses such as hobbies
5. Portable



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# Disadvantages

1. Reduced field of view
2. Poor posture
3. Reduced illumination
4. Requires flat surface to keep reading material .



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## 4. Hand held magnifier

- It is a convex lens that holds by means of handle at the various distances from reading plane.

### Types:

1. Spherical lenses
2. Aspheric lenses
3. Aplanatic lenses



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**Fig no 4 : Hand held  
magnifier**



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# Advantages

- Variable eye lens distance.
- Normal reading distance.
- Convenient for spot reading.
- Easily available.
- Inexpensive.
- Portable.



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# Disadvantages

- Reduced field of view
- Both hands are occupied
- Slow and uncomfortable



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# Conclusion

- Optical LVDs incorporate lenses resulting in optical magnification .
- There are 2 types of optical devices .
- One for distance and other for near tasks.
- Telescope is the only optical LVD for intermediate and distance .





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# REFERENCE

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