



Comparison of Step Index and Graded Index Optical fibres

Parameter

Data rate

Step Index

Vizle

Graded Index



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Comparison of Step Index and Graded Index Optical Fibers

Parameter

Data rate

Coupling Efficiency

Path Length

Index Variation

NA [Numerical Aperture]

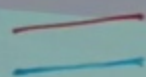
Step Index

→ Slow

→ Higher

Cladding

Core



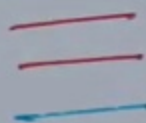
Graded Index

→ Higher.

→ Low

Cladding.

Core



Vizle

Parameter

Step Index

Graded Index

Data rate

→ Slow

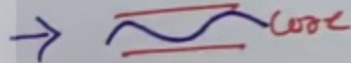
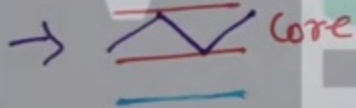
→ Higher.

Coupling Efficiency

→ Higher

→ Low

Path Length



Index Variation

$$\rightarrow \Delta = \frac{n_1 - n_2}{n_1}$$

$$\rightarrow \Delta = \frac{n_1^2 - n_2^2}{2n_1^2}$$

NA [Numerical Aperture]

→ NA remains constant

→ NA will change.

Material

→



NA [Numerical Aperture]

→ NA remains constant

→ NA will change.

Material

→ Glass or plastic

→ Glass only.

Bandwidth Efficiency

→ 10-20 MHz/km

→ 1 GHz/km

Pulse Spreading

→ more

→ Less.

Light source

→ LED

→ LED, LASER

Applications

→ For local

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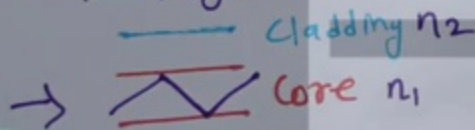
Index Variation

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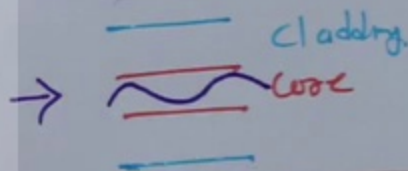
→ NA remains constant

→ glass or plastic

Graded Index

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