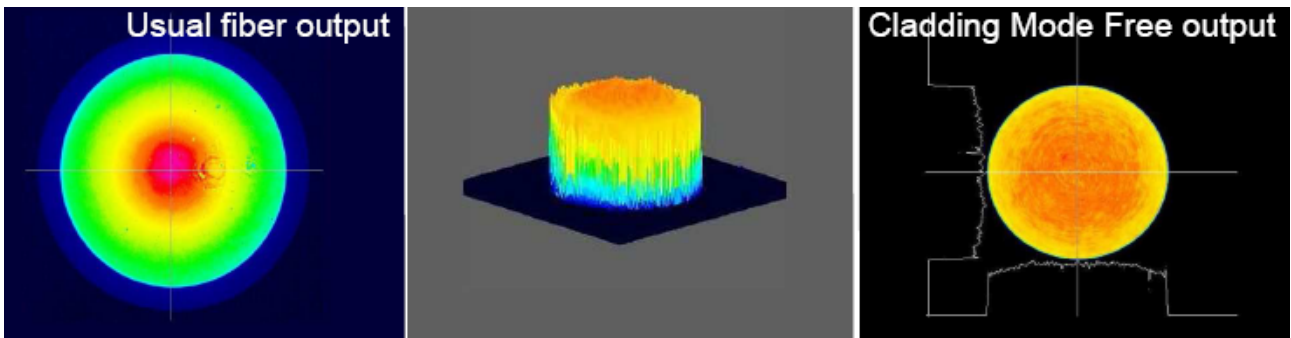


Cladding Mode Free (CMF)

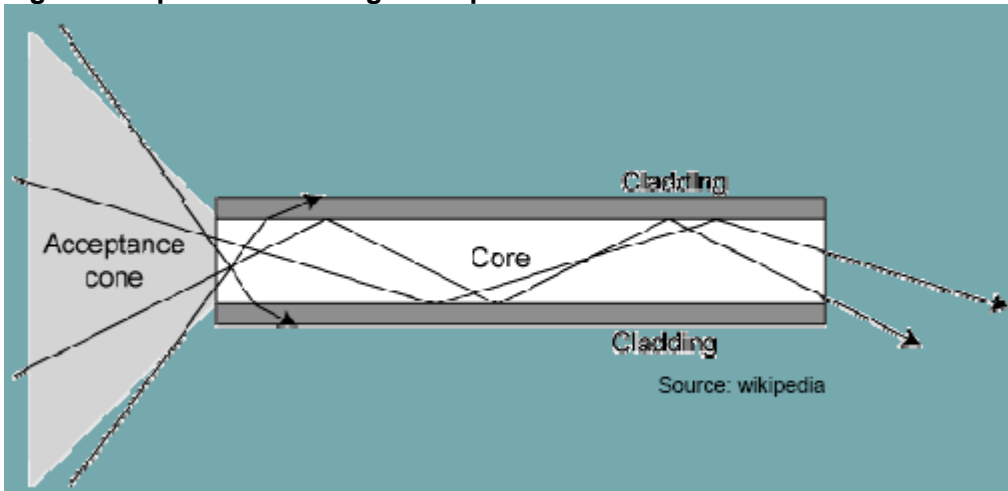


What is Cladding Mode Free (CMF)?

- Fiber coupled laser modules with less than 1% power content inside the cladding of the fiber!
- In case of CMF the laser module has to be purchased in combination with a CMF fiber

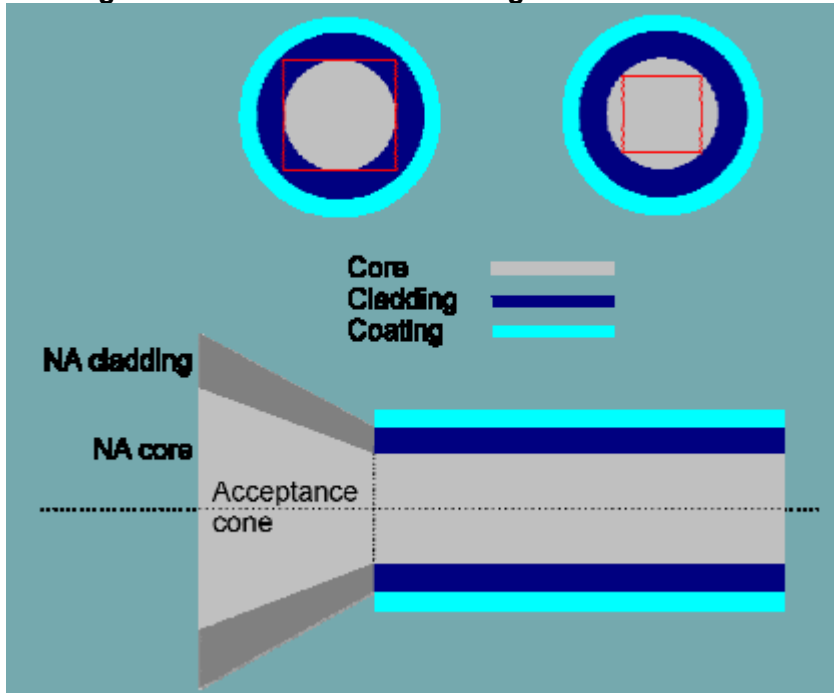


Light Transportation Through an Optical Fiber



Light transportation by total internal reflection

How Light Can Come into the Cladding

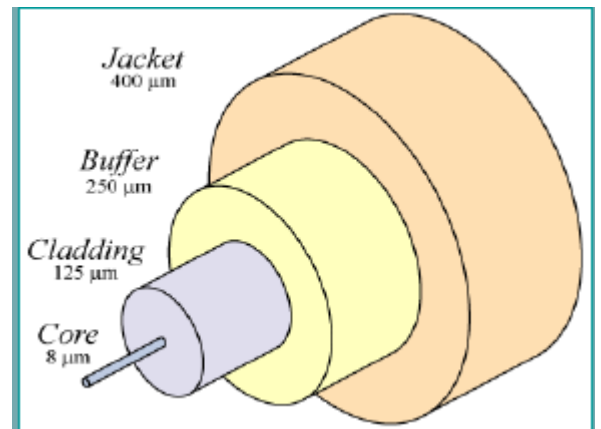


How light can come into the cladding:

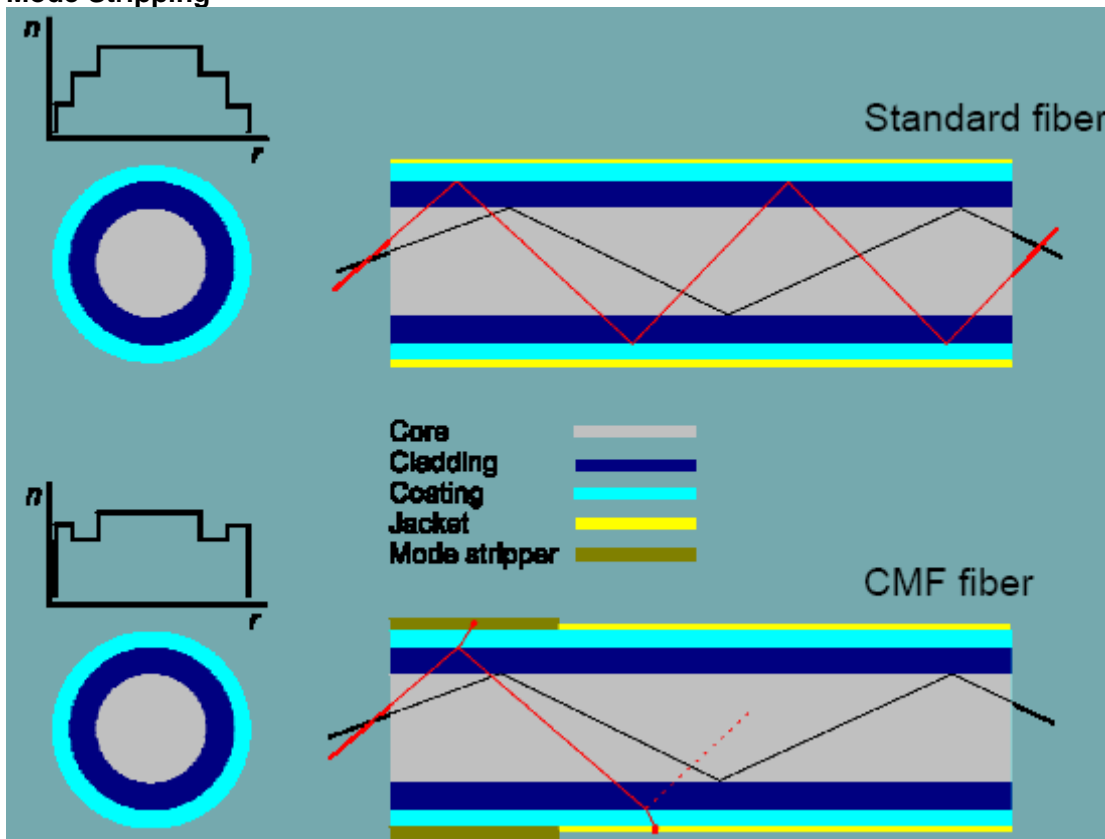
- Laser beam size > fiber core size
- NA laser > NA of the fiber core

Cladding Mode Free Fiber

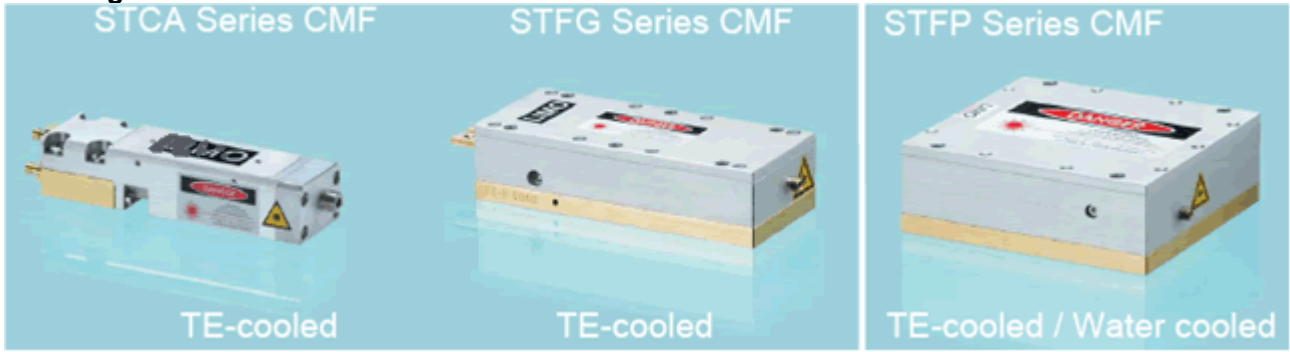
- Standard fiber: Index of refraction cladding > index of refraction buffer (coating) \Rightarrow Transportation by total internal reflection
- CMF fiber: Index of refraction cladding < index of refraction buffer (coating) \Rightarrow □ Light coupled into the buffer Mode stripped



Mode Stripping



Cladding Mode Free Laser



Fiber output power [W]	Fiber core diameter (NA 0.22)		Series
	200µm	400µm	
25 (CMF)	✓		STCA
35 (CMF)	✓		STFG
60 (CMF)	✓		STFP
70 (CMF)		✓	STFP
120 (CMF)	✓		STAV5
200 (CMF)	✓		STAV10
300 (CMF)		✓	STAV10

Cladding Mode Free Fiber

- ST-SMA905CMF-F200-1.5
- ST-SMA905CMF-F200-3
- ST-SMA905CMF-F400-1.5
- ST-SMA905CMF-F400-3
- ST-LD80HP-F400-1.5-FEX006
- ST-LD80HP-F400-3-FEX063