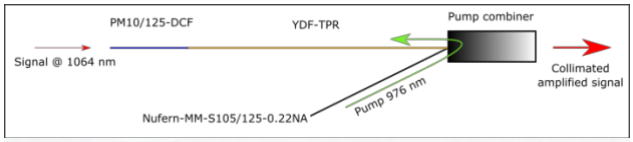
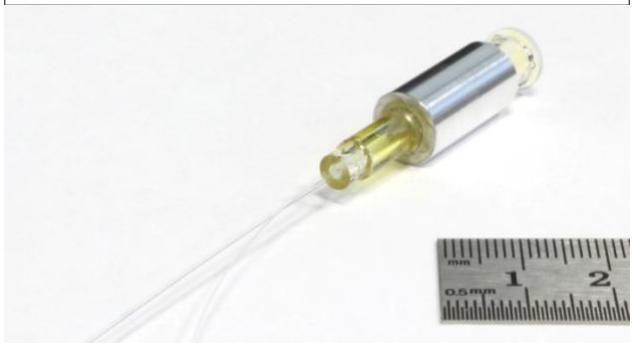
TAPERED FIBER PUMP COMBINER (prototype)

LARGE MODE AREA
Yb-DOPED DOUBLE CLAD
POLARIZATION-MAINTAINING
TAPERED FIBER
PUMP COMBINER

ARTICLE YDF-DC-40/400-PM-TPR-PC

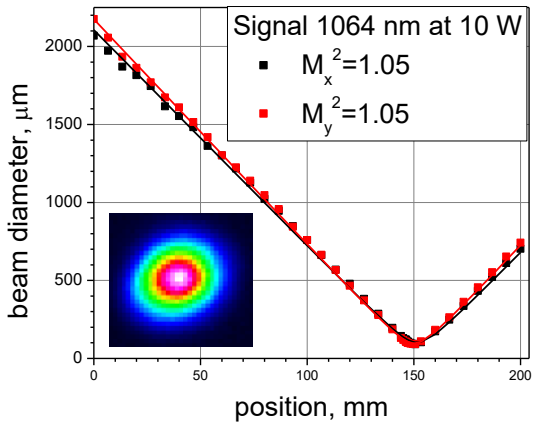




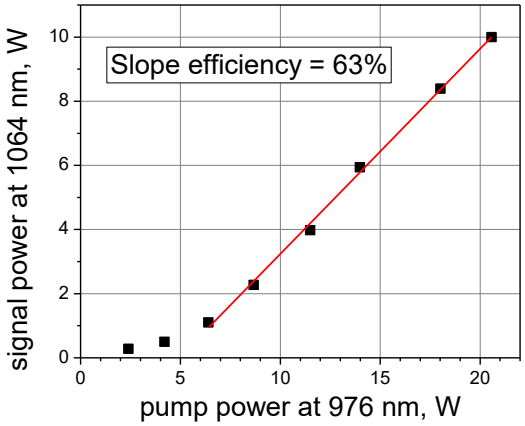
LMA Ytterbium doped tapered fiber pump combiner DF-DC-40/400-PM-TPR-PC is easy-to-use intergrated unit which consist of YDF-DC-40/400-PM-TPR tapered fiber and monolithic system for injecting pump in the tapered fiber and couple amplified signal out. This unit allows amplification with a very high gain (in excess of 30 dB) to ultimately high peak power (sub-MW) and high average power (tens of Watts). There are collimated free space output for amplified signal and two fiber ports for splicing pump and signal sources. The unit has low-cost maintenance-free monolithic design.

NOTE: wavelength stabilized at 976±1 nm pump diode with NA=0.15 and signal at 1064±10 nm must be used to get the best performance (see detailes in [Opt. Express 25, 26958 (2017)]). It is necessary to ensure sufficient heat sink for the Yb-doped tapered fiber.

Measurements of beam quality factor M^2



Pump-to-signal conversion efficiency



PUMP COMBINER SPECIFICATIONS	YDF-DC-40/400-PM-TPR-PC
Yb-doped DC PM tapered fiber length, m	1.5 - 3 (on customer request)
Signal input port	PM 10/125-DCF fiber
Pump input port	MM-105/125-0.22NA fiber
Pump to signal conversion efficiency (slope), %	> 60
Pump power handling, W	< 20
Input signal, mW	> 10
Polarization extinction ratio, dB	> 10 (14-18 typical)
Output beam quality M^2	< 1.2 (1.05-1.1 typical)

Other parameters (i.e. output power in excess of 50 W) are available on the request