Table 1 Transmitter Performance Goals			
	CO_2	O_2	**Notes**
Amplified wavelength λ:	1570–1600 nm (6250–6369-cm^{-1}), 2050–2070 nm 4831–4878-cm^{-1})	1262.3 to 1262.7 nm (1262.5 +/- 0.2 nm, 7920-7922 cm^{-1})	Amplifiers will be seeded with two or more different seed wavelengths simultaneously, all within the tuning band specified. One wavelength will be tuned to an absorption feature. Other wavelengths will be tuned away from the absorption feature within the specified tuning band.
Average output power:	>5 W	>5 W	Please describe the highest available output power for both air- and water-cooled options
Output power stability:	1% or better	1% or better	
Sidemode suppression:	>30 dB	>30 dB	
Tap termination:	FC/APC Patchcord,	FC/APC Patchcord,	>=5 meter fiber desired
Tap power:	>50 mW	>50 mW	(i.e. 1% at output power of 5 W)
Output termination:	>=5 meters fiber desired	>=5 meters fiber desired	Ideally, output terminated in collimator with full-angle divergence <270 microradians and collimated beam diameter <10.8 mm at $1/e^2$ point; custom collimator can be added by NASA if needed
Mode of Operation:	CW	CW	CW; must amplify intensity modulated input seed light with modulation depth of >0.95 and modulation frequencies ranging from 100-2000 kHz with average power equal to average power output of system with unmodulated seed lasers.
Polarization:	Unpolarized	Unpolarized.	Transmitter output should be randomly polarized.
Output modulation depth:	>0.95	>0.95	Scale linearly with input modulation depth
Output power tunability:	5-100%	5-100%	Output power selectable between 50 mW and maximum output
Optical input power:	1-5 mW	1-5 mW	
Output isolation:	>25 dB minimum	>25 dB minimum	
Beam quality:	M^2 <1.2	M^2 <1.2	Collimated beam diameter <10.8

			mm at $1/e^2$ point
Operating Temperature	Range: 0 to 40 degrees C	Range: 0 to 40 degrees C	

These attributes are provided as a guide; however, the final system design submitted for the Instrument Incubator Program proposal will be developed between the selected partner and LaRC.