

Summary of Sensitivity Estimate for O3 in Various Interferometer Configurations

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Disclaimer

- Assuming x8 O1 excess noise
- Assuming 10 W at PRM
(1W at BS in case PRM is tilted)
- Inhomogeneity and birefringence not fully included
- BNS range is simply multiplied by $\sqrt{0.3}$ when SRM is tilted

“Ultimate” BNS Range

- Actual sensitivity will likely be worse
- Based on [JGW-T1808172](#)

SRM	30 %	0 %	30 %	0 %
PRM	10 %	10 %	removed	removed
DRFPMI	30 Mpc 100 W at BS	-	-	-
PRFPMI	(10 Mpc) 100 W at BS	19 Mpc 100 W at BS	-	-
SRFPMI	10 Mpc 1 W at BS	-	17 Mpc 10 W at BS	-
FPMI	(4 Mpc) 1 W at BS	7 Mpc 1 W at BS	(7 Mpc) 10 W at BS	12 Mpc 10 W at BS

Concerns

- DRFPMI
 - Might require polarizers in PRC and SRC for stable lock
- PRFPMI
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 - LSC and ASC might be tougher than DRFPMI due to less f_1 at AS port
- SRFPMI
 - Might require polarizers in SRC for stable lock
 - Frequency/Intensity noise coupling will be x10 higher
- FPMI
 - Frequency/intensity noise coupling will be x10 higher