SPECIFICATOINS FOR MID-IR PPLN LASER SYSTEM

1. INTRODUCTION

The Naval Research Labor requires a continuous wave tunable laser system as stated in the technical requirements, Section 3, of this specification.

2. SCOPE

The procurement is for a single periodically poled lithium niobate (PPLN) optical parametric oscillator (OPO) laser operating in the mid-IR covering the 3.5 to 4.0 μm range with output power > 4W.

3. TECHNICAL REQUIREMENTS

The contractor shall provide a fully integrated PPLN laser system that meets or exceeds the desired specifications below

1. The laser mode of operation should be continuous wave (CW)
2. The laser should have a tuning range of 3.5 to 4.0 μm, expandable to cover the 3.0 to 4.0 μm range with other modules
3. The laser mid-IR (idler) output power should be > 4W at peak near 3.8 μm
4. The beam quality of the idler ouput should be $M^2 < 1.1$ at all wavelengths
5. The laser power stability should be less than 5% rms
6. The laser should have a linewidth of less than 300 GHz
7. The laser output should be linearly polarized
8. The laser should be air cooled
9. The laser should be supplied by 100-240 V AC 50-60 Hz

4. DOCUMENTATION

At the time of delivery, the system must be supplied with:

1. Standard full as built laser test data (power, tuning curve, beam quality, etc.)
2. Full instruction manual covering operation and maintenance
3. Standard Commercial Warranty