



Cascade Engineering Services, Inc.

6640 185th Ave NE, Redmond, WA 98052  
T.425.895.8617, F.425.702.9358

FILED

JUL 18 2024

KIRKLAND MUNICIPAL COURT



CERTIFICATE #: 262130-2

# CERTIFICATE OF CALIBRATION

## STANDARD CALIBRATION

### MEDINA POLICE DEPARTMENT

501 EVERGREEN POINT ROAD MEDINA, WA 98039

This certifies that the instrument listed herein was calibrated by Cascade Engineering Services' Calibration Laboratory, which is fully accredited in accordance with the recognized International Standards ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories. Cascade Engineering Services' Calibration Laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. Standards used to perform this calibration are certified by or traceable to NIST, natural physical constants, consensus standards or derived by the ratio type of calibrations. All calibrations are performed to manufacturer's specifications unless otherwise noted. Standard Calibration, while still traceable, does not meet all requirements for an Accredited Calibration per ISO/IEC 17025:2017, that is "As Found" data for equipment in tolerance and Measurement Uncertainties are not recorded. This certificate shall not be reproduced, except in full, without prior written approval of the laboratory.

#### DESCRIPTION:

#### SMD

|               |                       |                 |                             |
|---------------|-----------------------|-----------------|-----------------------------|
| ASSET #:      | LA004737              | SERIAL NUMBER:  | LA004737                    |
| MANUFACTURER: | APPLIED CONCEPTS INC. | MODEL NUMBER:   | STALKER LIDAR RLR           |
| DEPARTMENT:   | N/A                   | LOCATION:       | PATROL OFFICE               |
| ENVIRONMENT:  | 67.2 °F/42.7 %RH      | BASIC ACCURACY: | REFERENCE MFG SPECIFICATION |
| CAL INTERVAL: | 12 MONTHS             | DUE DATE:       | June 05, 2025               |

#### EQUIPMENT CONDITION AS RECEIVED

Initial testing found this equipment to be "IN TOLERANCE", as defined by the basic accuracy stated above.

#### EQUIPMENT CONDITION AS DELIVERED

At the completion of the calibration, measured values were "IN TOLERANCE", as defined by the basic accuracy stated above.

#### LASER SYSTEM OUTPUTS

PULSE REFERENCE FREQUENCY 176.2065 Hz OPTICAL POWER OUTPUT: 365 µW

#### STANDARD(S) USED FOR CERTIFICATION

| I.D.    | MODEL        | MANUFACTURER         | DESCRIPTION                       | DUE DATE   |
|---------|--------------|----------------------|-----------------------------------|------------|
| MET1259 | NOVA-DISPLAY | OPHIR                | LASER POWER METER                 | 04/22/2025 |
| MET1260 | PD300-SH     | OPHIR                | LASER POWER HEAD                  | 05/10/2025 |
| MET1335 | 7024707      | LASER TECHNOLOGY INC | LASER SPEED MEASUREMENT SIMULATOR | 03/29/2025 |
| MET1336 | 7005320      | LASER TECHNOLOGY INC | OPTICAL INTERFACE UNIT            |            |

#### PROCEDURE(S) USED FOR CERTIFICATION

| DOCUMENT ID | DESCRIPTION                           | REV | REV DATE   |
|-------------|---------------------------------------|-----|------------|
| CP-SMD-001  | RADAR AND LIDAR CALIBRATION PROCEDURE | NEW | 11/14/2019 |

#### CERTIFICATION NOTES

I certify (or declare) under penalty of perjury under the laws of the State of Washington that the above information is true and correct

PERFORMED BY   
SENIOR METROLOGIST: JOHN GRAY

LOCATION: Redmond, WA  
CALIBRATION DATE: Wednesday, June 05, 2024

THIS LABORATORY IS A2LA ACCREDITED TO ISO/IEC 17025:2017 (GENERAL REQUIREMENTS FOR THE COMPETENCE OF TESTING AND CALIBRATION LABORATORIES), CERTIFICATE #: 2560 01  
F540-1.3/REVISION M MARCH 2020 Page 1 of 1

THIS DOCUMENT IS MAINTAINED  
AS A PUBLIC RECORD IN  
ACCORDANCE WITH RCW 5.44



## METROLOGY LAB SHIPPER

**SHIPPING REMARKS:**

**SHIP TO:**

**COMPANY:** MEDINA POLICE DEPARTMENT  
**CONTACT:** SERGEANT ERIC ANDERSON  
**ADDRESS:** 501 EVERGREEN POINT ROAD  
 MEDINA, WA 98039  
**PHONE:** 425-233-6420

**FROM:**

**VENDOR:** CES Calibration Services  
**CONTACT:** Cascade Engineering Services, Inc.  
**ADDRESS:** 6640 185TH AVE NE  
 Redmond, WA 98052  
**PHONE:** 425.895.8617 ext. 707

**PO Number:**

**EQUIPMENT INCLUDED:**

|   | MANUFACTURER                   |                   | DESCRIPTION        | DEPARTMENT |
|---|--------------------------------|-------------------|--------------------|------------|
| 1 | 7125070265 OHAUS               | SP601             | SCALE, 600 X 0.1 G |            |
| 2 | LA004733 APPLIED CONCEPTS INC. | STALKER LIDAR RLR | SMD                | N/A        |
| 3 | LA004737 APPLIED CONCEPTS INC. | STALKER LIDAR RLR | SMD                | N/A        |

**CUSTOMER SIGNATURE:** \_\_\_\_\_ **DATE RECEIVED** \_\_\_\_\_

**SHIPPED BY:** \_\_\_\_\_ **WILLIAM ANG** **SHIPPING DATE:** June 5, 2024



**Cascade Engineering Services, Inc.**

6543 785th Ave. NE, Redmond, WA 98072  
425.875.5567 / 425.875.7558



**CERTIFICATION CONCERNING DESIGN AND CONSTRUCTION OF  
ELECTRONIC SPEED MEASURING DEVICES**

**IRLJ RULE 6.6 EFFECTIVE 1/3/2006**

I, John R. Gray, do certify under penalty of perjury, under the laws of the state of Washington as follows:

I am employed with Cascade Engineering Services, Inc. (CES) Metrology and Electronics Repair Services, as a Senior Metrology Technician. I have been employed in such a capacity since 2008. Part of my duties include calibration, maintenance and repair of all electronic doppler radar and laser speed measuring devices (SMD's) used by MEDINA POLICE DEPARTMENT.

All SMD's currently used by MEDINA POLICE DEPARTMENT are listed in Exhibit "A".

I maintain the following qualifications with respect to SMD(s): More than 14 years of commercial experience in electronic test and measurement calibration and repair. I have successfully completed training courses in Doppler Radar & Lidar theory. I have over two years of experience in the repair and calibration of Doppler and Lidar SMD's. I am experienced and competent in the principles and fundamental requirements of test equipment calibration.

The CES laboratory maintains manuals for all of the SMD's listed in Exhibit "A". I am personally familiar with those manuals and how each of the SMD's are designed and operated. On the date indicated in Exhibit "A" testing of the SMD's was performed using CES procedures under the direction of an authorized SMD expert. The results were evaluated and certified to meet or exceed existing performance standards and entered into the CES certification management database. CES laboratory maintains a testing and certification program that requires each SMD to be tested and certified for accuracy at least once every two years.

The CES laboratory tests all Doppler SMD's used by MEDINA POLICE DEPARTMENT, as recommended by the manufacturer, as follows: The Vocar HR, handheld Radar certification system is used to simulate speeds at 5 mph increments from 20 mph to 140 mph to verify accuracy in stationary and moving mode. Measurements are taken of the SMD transmit frequency, antenna/receiver sensitivity and any accompanying tuning forks are also tested for accuracy. All other operational functions of the SMD system are then tested for proper performance.

The Laser SMD's transmit a series of highly focused light wave pulses each time the trigger is pulled and utilizes two laws of physics; time and distance. Since the speed of light is a known fixed value, the range of the target is determined by calculating how long it takes for the light pulses to travel to the target and back. This series of measurements allows the SMD to calculate the speed of the target using an algorithm which processes the range calculations into speed measurements. The displayed speed is accurate to within plus (+) or minus (-) one (1) mile per hour.

The CES laboratory tests all Laser / Lidar SMD(s) used by MEDINA POLICE DEPARTMENT, as recommended by the manufacturer, as follows: The Laser Speed Measurement Simulator (LSMS) is utilized to simulate a moving target. This is accomplished by detecting the optical output pulses of the laser device and generating artificial return pulses. Different speed values and ranges are simulated by varying the time delays between the input pulses and the return pulses. The LSMS consists of a Digital Delay Generator (DDG), and an optical interface unit. The DDG produces precise time delays. The optical interface unit converts the optical energy of the laser instrument into electrical signals which are supplied to the DDG. The optical interface unit also converts the electrical signals received from the DDG into optical energy which is then transmitted to the Lidar. The Lidar's output power is tested using an Ophir Nova Display, with a PD300-SH power head.

On the date indicated in Exhibit "A", each SMD was tested by myself or a trained technician listed therein and under my direction. All Technicians listed on Exhibit "A" received training in the proper use and operation of SMD test equipment and performance testing procedures used to test Laser and Doppler SMDs. After successfully completing training the technician is certified by myself and receives authorization allowing them to enter the results from the tests into the certificate management database. Individual Performance and Certification tests are entered into the certificate management database under the penalty of perjury by entering an authorized user id and password to authenticate it.

Exhibit "A"

This agency, MEDINA POLICE DEPARTMENT currently utilizes the following Laser SMD(s):

APPLIED CONCEPTS INC. manufacturer's the following SMD(s):

| I.D./Serial Number | Model Number     | Antenna 1 S/N | Antenna 2 S/N | T.F. 1 S/N | T.F. 2 S/N | Cal. Date  | Cal. Interval | Due Date   | Technician     |
|--------------------|------------------|---------------|---------------|------------|------------|------------|---------------|------------|----------------|
| LA004733           | STALKER LIDAR RL | N/A           | N/A           | 7635       | 7632       | 06/05/2024 | 12 MONTHS     | 06/05/2025 | JOHN R GRAY IV |
| LA004737           | STALKER LIDAR RL | N/A           | N/A           | 7635       | 7632       | 06/05/2024 | 12 MONTHS     | 06/05/2025 | JOHN R GRAY IV |

This agency, MEDINA POLICE DEPARTMENT currently utilizes the following Doppler SMD(s):

KUSTOM SIGNALS, INC. manufacturer's the following SMD(s):

| I.D./Serial Number | Model Number | Antenna 1 S/N | Antenna 2 S/N | T.F. 1 S/N | T.F. 2 S/N | Cal. Date  | Cal. Interval | Due Date   | Technician     |
|--------------------|--------------|---------------|---------------|------------|------------|------------|---------------|------------|----------------|
| T1537              | TALON        | N/A           | N/A           | 7635       | 7632       | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| T1543              | TALON        | N/A           | N/A           | 7637       | 7633       | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| T1558              | TALON        | N/A           | N/A           | 32681      | 34440      | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| TA02482            | TALON        | N/A           | N/A           | 27090      | 28730      | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| TA04681            | TALON        | N/A           | N/A           | 55340      | 55568      | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |

MPH INDUSTRIES manufacturer's the following SMD(s):

| I.D./Serial Number | Model Number | Antenna 1 S/N | Antenna 2 S/N | T.F. 1 S/N | T.F. 2 S/N | Cal. Date  | Cal. Interval | Due Date   | Technician     |
|--------------------|--------------|---------------|---------------|------------|------------|------------|---------------|------------|----------------|
| BEE117301197       | BEE III      | BEN653036870  | BEN653036871  | 378476     | 378443     | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| BEE117301198       | BEE III      | BEN653036872  | BEN653036873  | 378465     | 378453     | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| BEE117301199       | BEE III      | BEN653036874  | BEN653036875  | 378473     | 378458     | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| BEE117301200       | BEE III      | BEN653036876  | BEN653036877  | 378467     | 378446     | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |
| BEE664022279       | BEE III      | BEN653050823  | BEN653050824  | 72113      | 71668      | 03/28/2024 | 12 MONTHS     | 03/28/2025 | JOHN R GRAY IV |

Based upon my education, training, and experience and my knowledge of the SMD's listed above, it is my opinion that each of these electronic pieces of equipment is so designed and constructed as to accurately employ the Doppler effect in such a manner that it will give accurate measurements of the speed of motor vehicles when properly calibrated and operated by a trained operator or, in the case of the laser SMDs, each of these pieces of equipment is so designed and constructed as to accurately employ measurement techniques based on the velocity of light in such a manner that it will give accurate measurements of the speed of motor vehicles when properly calibrated and operated by a trained operator.

Exhibit "A" derives information from the certificate management database. See Exhibit "A" for details about individual SMD certifications.

**State of Washington  
County of King**

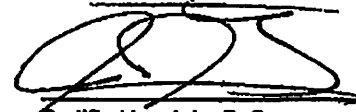
Signed or attested before me on

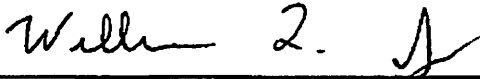
07.18.24

by John R. Gray

I have satisfactory evidence that the person described in this document:

- (a) is personally known to me; OR (b) is identified upon oath or affirmation of credible witness personally know to me; OR (c) is identified on the basis of identification documents.

  
Certified by: John R. Gray  
Place: Redmond, WA



William Quoc Ang  
Notary Public in and for the State of Washington,  
Residing in Seattle, WA  
My appointment expires January 29, 2026

