



**DEFENSE  
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**Sound and Light Output Testing**  
**Tactical Diversionary Device 8909NRSC**  
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**Prepared by:**  
**Henry Lorenzen**  
**Mechanical Engineer II**  
**Defense Technology, LLC**  
**(307) 235-2166**  
[Henry.Lorenzen@defense-technology.com](mailto:Henry.Lorenzen@defense-technology.com)

**Approved by:**  
**John Kapeles**  
**Category and Engineering Director**  
**Defense Technology, LLC**  
**(307) 235-2136**  
[John.Kapeles@defense-technology.com](mailto:John.Kapeles@defense-technology.com)

## 1. Test Objective

This test was performed to establish the output performance of the 8909NRSC Tactical Diversionary Device (TDD) using a maximum nominal charge of 6.5 grams of flash powder. Concurrent measurements were taken to capture both average decibel (dB) and average candela output.

## 2. Testing Configuration and Procedure

The test configuration, see **Figure 1**, consists of sensors that measure decibel (dB) and candela of a securely fastened distraction device on a stand. The device is initiated by the operator behind a protective barrier using a pull cord attached to the safety pin. Data acquisition is captured from device initiation through event, via recording equipment, and displayed on the operator's computer where the data is logged. Decibel output measurements are made both parallel and perpendicular to the device body at a distance of five (5) feet (1.5m). The Candela measurement is recorded at a distance of ten (10) feet (3m). Both recording distances are in accordance with industry standards.



**Figure 1**

### 3. Test Data

#### 3.1 Industry Standard Testing

10 separate devices were tested, see **Table 1**, and their outputs were recorded. The Average, High and Low values of this testing is displayed in **Table 2**. Decibel(dB) output averaged approximately **162 dB** at five (5) feet (1.5m) and candela output averaged approximately **7,159,541** at ten (10) feet (3m).

Test Product	Test #	Lux	Bottom PSI	Side PSI	Bottom dB	Side dB	Candela
8909	1	1,056,607	0.3182	0.3652	160.81	162.00	9,816,196
	2	388,162	0.4602	0.2413	164.01	158.40	3,606,141
	3	788,197	0.2675	0.2104	159.30	157.21	7,322,587
	4	795,423	0.4163	0.2000	163.14	156.77	7,389,718
	5	853,235	0.4839	0.2585	164.45	159.00	7,926,809
	6	1,015,313	0.4568	0.2172	163.95	157.49	9,432,562
	7	496,559	0.4230	0.2172	163.28	157.49	4,613,182
	8	669,993	0.3925	0.2241	162.63	157.76	6,224,436
	9	838,266	0.3858	0.1966	162.48	156.62	7,787,743
	10	804,714	0.3385	0.1828	161.34	155.99	7,476,034

**Table 1**

	Bottom dB	Side dB	Candela
<b>Average</b>	162.54	157.87	7,159,541
<b>High</b>	164.45	162.00	9,816,196
<b>Low</b>	159.30	155.99	3,606,141

**Table 2**

#### 3.2 Converted Decibel (dB) Output at Two (2) Meters

Using a distance attenuation calculator, decibel output at two (2) meters (6.6 feet) for the 8909. At this distance, the average dB drops to approximately **160 dB**, see **Table 3**.

	Bottom dB	Side dB	Bottom dB (2m)	Side dB (2m)
<b>Average</b>	162.54	157.87	160.04	155.37
<b>High</b>	164.45	162.00	161.95	159.50
<b>Low</b>	159.30	155.99	156.80	153.50

**Table 3**