# REPORT

**3933 US ROUTE 11, CORTLAND, NEW YORK, 13045**

FOR THE SCOPE OF ACCREDITATION UNDER NVLAP LAB CODE 100402-0.

Order No. 103420925 Date: February 23, 2018

**REPORT NO. 103420925CRT-001**

**SOUND ABSORPTION TEST ON 2 FOOT BY 2 FOOT BY 1 ½ INCH THICK PIXEL SERIES LED PANELS**

**RENDERED TO**

**APOGEE TRANSLITE**
**593 ACORN ST**
**DEER PARK, NY 11729-3617**

## INTRODUCTION

This report gives the results of a Sound Absorption test and the determination of the Noise Reduction Coefficient on Pixel Series LED Panels. The test specimen was selected and supplied by the client and received at the laboratories on February 16, 2018. The sample appeared to be in a new, unused condition.

**AUTHORIZATION -** Signed Intertek Quotation No. Qu-00850693.

## TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM C423-2017, "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method".

## GENERAL

This test method describes the measurement of sound absorption by analyzing the decay rate of sound in a reverberation room. The difference of the decay with and without the specimen in the room is utilized to determine the sound absorption of the specimen under test. Intertek Testing Services Acoustical Facilities utilizes a 16,640 cu. ft. (470 cubic meter) reverberation room.

**GENERAL** - Cont'd

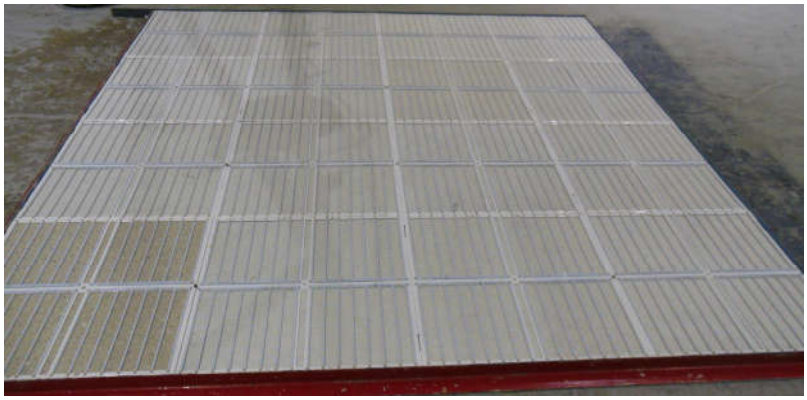
The sound absorption coefficient is ideally defined as the fraction of the randomly incident sound power absorbed by the material. The greater the coefficient, the greater the sound absorption.

The Noise Reduction Coefficient (NRC) is a single number rating obtained by taking the arithmetic average of the absorption coefficients at 250, 500, 1000, and 2000 Hz rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) is a single number rating obtained by taking the arithmetic average of the one-third octave bands from 200 through 2500 Hz rounded to the nearest 0.01.

## DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of 2 foot by 2 foot by 1 ½ inch thick Pixel Series LED panels. The nominal 96 inch by 96 inch sample consisted of 16 individual panels. The sample was installed on the floor of our 16,400 cubic foot reverberation chamber. The panels weighed 1.43 lb./ft$^2$. The panels were tested without any additional trim work or diffusing membrane.



## RESULTS OF TEST

**PIXEL SERIES LED PANELS**

| One Third Octave Band Center Frequency, Hz | Absorption Coefficients Sabins/ft$^2$ | Repeatability, r | Reproducibility, R |
|---|---|---|---|
| 80 | 0.00 | 0.14 | 0.14 |
| 100 | 0.09 | 0.15 | 0.27 |
| 125 | **0.42** | 0.11 | 0.22 |
| 160 | 0.38 | 0.11 | 0.23 |
| 200 | 0.72 | 0.09 | 0.17 |
| 250 | **0.54** | 0.07 | 0.15 |
| 315 | 0.90 | 0.09 | 0.22 |
| 400 | 0.86 | 0.14 | 0.16 |
| 500 | **1.29** | 0.09 | 0.14 |
| 630 | 1.03 | 0.06 | 0.14 |
| 800 | 0.92 | 0.07 | 0.14 |
| 1000 | **0.99** | 0.06 | 0.12 |
| 1250 | 1.02 | 0.05 | 0.13 |
| 1600 | 0.97 | 0.05 | 0.14 |
| 2000 | **0.93** | 0.05 | 0.13 |
| 2500 | 0.91 | 0.06 | 0.14 |
| 3150 | 0.89 | 0.08 | 0.15 |
| 4000 | **0.90** | 0.11 | 0.16 |
| 5000 | 0.86 | 0.15 | 0.21 |
| Sound Absorption Average (SAA) | **0.92** | 0.03 | 0.08 |

| | Absorption Coefficients – Sabins/ft.$^2$ One-Third Octave Band Center Frequency, Hz | | | | | | |
|---|---|---|---|---|---|---|---|
| **IDENTIFICATION** | 125 | 250 | 500 | 1000 | 2000 | 4000 | NRC |
| LED Panels | 0.42 | 0.54 | 1.29 | 0.99 | 0.93 | 0.94 | 0.95 |

**MOUNTING**: Type “A” per ASTM Designation E795-16, “Standard Practices for Mounting Test Specimens During Sound Absorption Tests”.

## REMARKS

1. Aging Period: None
2. Ambient Temperature: 70°F
3. Relative Humidity: 41%

## CONCLUSION

The test method employed for this test has no pass-fail criteria; therefore, the evaluation of the test results is left to the discretion of the client.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test: February 21, 2018

Report Approved by:

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Attachments: None