TEST REPORT

Pelican Products
23215 Early Ave.
Torrance, CA 90505

Job No. 10443
Contract n/a
Purchase Order No. 450017289
Date 6/3/16

This report contains true and correct data obtained in the performance of the test program set forth in your purchase order. Test methods, results, and equipment used are recorded on these data sheets. Where applicable, instrumentation used in obtaining this data has been calibrated using standards which are traceable to the National Institute of Standards and Technology.

SUMMARY:

Cases, Part No. 1485 19.18 x 12.81 x 6.95", 1525 21.96 x 13.97 x 7.55", 1535 21.96 x 13.97 x 9.04", 1555 24.76 x 15.46 x 8.30", 1605 28.87 x 16.77 x 9.18" and 1615 32.58 x 18.40 x 11.08", were subjected to Environmental testing in accordance with Customers specification. Upon completion of the test, no visible evidence of damage to the test specimens was observed. Complete test details, including photos and equipment lists, are contained in this report.

Test Dates: 4/29/16 -5/20/16

Prepared by: _______________________
Sheila James, Test Operations Office Manager

Approved by: _______________________
Tom Valfre, Test Operations Manager

Approved by: _______________________
Jason Lee, Quality Assurance Manager
DATA SHEET

Customer: Pelican Products Inc.  
Job No: 10443  
Date: 4/27/2016  
Specimen: Case's

RECEIVING INSPECTION

| No. of Specimens Received:  | Six (6) |
| Record identification information exactly as it appears on the tag or specimen: |
| Manufacturer:  | Pelican Products, Inc. |

<table>
<thead>
<tr>
<th>P/N's</th>
<th>S/N's</th>
</tr>
</thead>
<tbody>
<tr>
<td>1485</td>
<td>N/A</td>
</tr>
<tr>
<td>1525</td>
<td>N/A</td>
</tr>
<tr>
<td>1535</td>
<td>N/A</td>
</tr>
<tr>
<td>1555</td>
<td>N/A</td>
</tr>
<tr>
<td>1605</td>
<td>N/A</td>
</tr>
<tr>
<td>1615</td>
<td>N/A</td>
</tr>
</tbody>
</table>

How does identification information appear: (name plate, tag, painted, imprinted, etc.)  
Label on Case and Box.

Examination: Visual, for evidence of damage, poor workmanship, or other defects, and completeness of identification.

Inspection Results: There was no visible evidence of damage to the specimen(s) unless otherwise noted below.

Inspected By:  
Sheet No: 1 of 1  
Approved:  
Date: 4/27/16
# DATA SHEET

<table>
<thead>
<tr>
<th><strong>Test Title</strong></th>
<th>Vibration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer</strong></td>
<td>Pelican Products, Inc.</td>
</tr>
<tr>
<td><strong>Job No.</strong></td>
<td>10443</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Case Model 1485, 1525, 1535, 1555, 1605, 1615</td>
</tr>
<tr>
<td><strong>Date Started</strong></td>
<td>4/29/2016</td>
</tr>
<tr>
<td><strong>Date Comp.</strong></td>
<td>5/3/2016</td>
</tr>
<tr>
<td><strong>Part No.</strong></td>
<td>See Recv. Insp.</td>
</tr>
<tr>
<td><strong>Serial No.</strong></td>
<td>See Recv. Insp.</td>
</tr>
<tr>
<td><strong>Spec.</strong></td>
<td>DEF STAN 81-41 Part3/4</td>
</tr>
<tr>
<td><strong>Par.</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>Photo</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Amb. Temp.</strong></td>
<td>75° ±15F</td>
</tr>
</tbody>
</table>

## Test Requirements:

- **Pre-Conditioning:**
  - Temperature: 25 ± 10°C
  - Humidity: 60 ± 15%
  - Duration: 16 hours or until specimen has reached temperature stabilization (whichever is the shortest period)

- **No. of Specimens:** Six (6)
- **Test Freq.:** 5 to 350 Hz
- **Test Level:** Noted Below
- **Vibration Type:** Sinusoidal
- **Orientations:** 3 (Front/Back, Side/Side, Top/Bottom)

## Test Method:

Install the test specimen to the vibration test setup in the first orientation. Photograph the test setup.

The cases shall be vibrated for 2 hours in each of three mutually perpendicular axes at a vibration amplitude of (± 6 mm peak from 5 to 9 Hz) and (± 2 g peak from 9 to 350 Hz) and at a continuous logarithmic rate of 0.76 ±0.25 octave per minute. Perform a visual examination and document all results.

## Test Results:

All testing was performed per the Test Method and Requirements stated above. There was no visible evidence of damage or deformation to the test specimens upon completion of the Vibration Test.

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KST-303-A Rev 1 – May 1, 2015

Tested By: [Signature]

Engineer: [Signature]
Photograph 1

Vibration - Pre Conditioning
Photograph 3
Vibration - Front to Back - Cases 1485, 1525, 1615
Photograph 7
Vibration - Top to Bottom - Cases 1535, 1555, 1605
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Axis</th>
<th>Temp. (°F)</th>
<th>Freq. (Hz)</th>
<th>Disp. (&quot;DA&quot;)</th>
<th>Accel (±G)</th>
<th>Test Time (Min.)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Noted</td>
<td>Noted</td>
<td>Amb.</td>
<td>5-350</td>
<td>5-9</td>
<td>.236</td>
<td>120</td>
<td>Test Requirements: Sine Vibration</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9-350</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>4/29</td>
<td>0736</td>
<td>S-S</td>
<td>Amb.</td>
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<td>&quot;</td>
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<tr>
<td>4/29</td>
<td>0954</td>
<td>F-B</td>
<td>Amb.</td>
<td>5-350</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
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<tr>
<td>4/29</td>
<td>1247</td>
<td>F-B</td>
<td>Amb.</td>
<td>5-350</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
<td>Perform Vibration. SN's: 1535, 1555, 1605.</td>
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<tr>
<td>5/2</td>
<td>0727</td>
<td>S-S</td>
<td>Amb.</td>
<td>5-350</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
<td>Perform Vibration. SN's: 1535, 1555, 1605.</td>
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<tr>
<td>5/3</td>
<td>0813</td>
<td>T-B</td>
<td>Amb.</td>
<td>5-350</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
<td>Perform Vibration. SN's: 1485, 1525, 1615.</td>
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<tr>
<td>5/3</td>
<td>1056</td>
<td>T-B</td>
<td>Amb.</td>
<td>5-350</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
<td>Perform Vibration. SN's: 1535, 1555, 1605.</td>
</tr>
</tbody>
</table>

Signed: 5-7-16
Sine Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direc.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01

Date: 04-29-16
Time: 07:43:55

Side to Side Axis Sine Sweep

C:\WinNT\Data\Pelican Products Inc JN 10443\Sweep_018.rsn
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 7
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:56:01
remaining: 001:04:00

Date: 04-29-16
Time: 08:31:57

Side to Side Axis Sine Sweep

C:\VcpNT\Daten\Pelican Products Inc JN 10443\Sweep_018.rsn
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 15
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 002:00:02
remaining: 000:00:00
Date: 04-29-16
Time: 09:36:00

Side to Side Axis Sine Sweep
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01

Date: 04-29-16
Time: 10:02:01

Front to Back Axis Sine Sweep
Sine Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 15
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 002:00:02
remaining: 000:00:00

Date: 04-29-16
Time: 11:54:05

Front to Back Axis Sine Sweep

C:\VcpNT\Daten\Pelican Products Inc JN 10443\Sweep_022.rsn
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1535, 1555, 1605

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01

Date: 04-29-16
Time: 12:55:29

Front to Back Axis Sine Sweep

C:\\VcpNT\Daten\Pelican Products Inc JN 10443\Sweep_024.rsn
Pelican Products, Inc. JN: 10443

Case Model 1535, 1555, 1605

Sine

Control channel

Sweep type: logarithmic
Sweeps done: 7
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:56:00
remaining: 001:04:00

Date: 04-29-16
Time: 13:43:30

Front to Back Axis Sine Sweep

C:\VopNT\Daten\Pelican Products Inc JN 10443\Sweep_024.rsn
Sine

Pelican Products, Inc. JN: 10443
Case Model 1535, 1555, 1605

Control channel

[Image of a graph showing a sine sweep with axis labels for g and Hz]

Sweep type: logarithmic
Sweeps done: 15
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 002:00:02
remaining: 000:00:00
Date: 04-29-16
Time: 14:47:33
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1535, 1555, 1605

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01
Date: 05-02-16
Time: 07:35:34

Side to Side Axis Sine Sweep
Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01
Date: 05-03-16
Time: 08:21:18

Top to Bottom Axis Sine Sweep
Sine Control channel

Pelican Products, Inc. JN: 10443
Case Model 1485, 1525, 1615

Sweep type: logarithmic
Sweeps done: 15
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 002:00:03
remaining: 000:00:00

Date: 05-03-16
Time: 10:13:23

Top to Bottom Axis Sine Sweep
Control channel

Pelican Products, Inc. JN: 10443
Case Model 1535, 1555, 1605

Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:07:59
remaining: 001:52:01
Date: 05-03-16
Time: 11:03:56

Top to Bottom Axis Sine Sweep

C:\VcpNT\Daten\Pelican Products Inc JN 10443\Sweep_042.rsn
Sine

Control channel

Pelican Products, Inc. JN: 10443
Case Model 1535, 1555, 1605

Sweep type: logarithmic
Sweeps done: 7
Sweeps req.: 15
Sweep direct.: up
Sweep rate: 0.77 Oct/min
Contr.strat.: Average
Unit: g

-- Testing time --
elapsed: 000:56:01
remaining: 001:04:00

Date: 05-03-16
Time: 11:51:58

Top to Bottom Axis Sine Sweep
Top to Bottom Axis Sine Sweep
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerometer</td>
<td>Endevco</td>
<td>7704A-50</td>
<td>0 - 1,000 g's (x5 shock)</td>
<td>K10023</td>
<td>4/11/2016 10/11/2016</td>
<td>5%</td>
</tr>
<tr>
<td>Amplifier - Power</td>
<td>Unholtz-Dickie</td>
<td>SA180</td>
<td>180 KW 5-2KHz</td>
<td>K10137</td>
<td>* System Calibration *</td>
<td>N/A</td>
</tr>
<tr>
<td>Chamber - Environmental</td>
<td>Wyle / Bally</td>
<td>Chamber 3</td>
<td>-175°F to +240°F &amp; Rh / 8x8x7.10&quot; / CO2 LN2</td>
<td>K10146</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
</tr>
<tr>
<td>Exciter - Electro-Dynamic</td>
<td>Ling</td>
<td>A249</td>
<td>1&quot; 5-2KHz 30K F/Lbs</td>
<td>K10135</td>
<td>* System Calibration *</td>
<td>N/A</td>
</tr>
<tr>
<td>Module - Multiplexer</td>
<td>Keithley</td>
<td>7700</td>
<td>20 Chans. 10 VDC or TC's</td>
<td>K10692</td>
<td>8/12/2015 8/12/2016</td>
<td>±2% / ±2°F</td>
</tr>
<tr>
<td>Multimeter/DAS</td>
<td>Keithley</td>
<td>2700</td>
<td>10VDC &amp; Type T TC's</td>
<td>K10170</td>
<td>8/12/2015 8/12/2016</td>
<td>±2% / ±2°F</td>
</tr>
<tr>
<td>Oscilloscope</td>
<td>Tektronix</td>
<td>TDS2002</td>
<td>2 Ch., 60Mhz, 1GS/s</td>
<td>K10123</td>
<td>7/21/2015 7/21/2016</td>
<td>±3% FS</td>
</tr>
</tbody>
</table>

Where applicable, the listed test equipment has been calibrated using standards which are traceable to the National Institute of Science & Technology. Certificates and reports of all calibrations are retained in the Kelly Space & Technology, Inc. QA files and are available for inspection upon request. *Equipment identified as System Calibration are verified prior to use.
### Test Report

**TEST TITLE:** Vibration

**CUSTOMER:** Pelican Products, Inc.  
**Job No.:** 10443  
**Date:** 4/28/2016

**Specimen:** Cases (Model 1485, 1525, 1535, 1555, 1605, 1615)  
**Technician:** I. Garcia  
**Part No.:** See Recv. Insp.  
**Serial No.:** See Recv. Insp.  
**Engineer:** T. Valfre

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Conditioner</td>
<td>PCB</td>
<td>481M27</td>
<td>16 Channels</td>
<td>K10141</td>
<td>12/12/2015 12/12/2016</td>
<td>±1.0% FS</td>
</tr>
<tr>
<td>Transmitter - Humidity &amp; Temperature</td>
<td>Vaisala</td>
<td>HMT337</td>
<td>0 to 100% RH / -40 to 356°F</td>
<td>K10593</td>
<td>1/12/2016 1/12/2017</td>
<td>±2%RH±2°F</td>
</tr>
</tbody>
</table>

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## DATA SHEET

**Test Title**: Low Temperature

<table>
<thead>
<tr>
<th>Customer</th>
<th>Pelican Products, Inc.</th>
<th>Job No.</th>
<th>10443</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen</td>
<td>Case Model 1485, 1525, 1535, 1555, 1605, 1615</td>
<td>Date Started</td>
<td>5/3/2016</td>
</tr>
<tr>
<td>Spec.</td>
<td>DEF STAN 81-41 Part3/4</td>
<td>Par.</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amb. Temp.</td>
<td>75° ±15F</td>
</tr>
</tbody>
</table>

### Requirements:

- **Temperature**: -51 ± 2 °C
- **Duration**: 16 ± 0.5 hours after specimen has reached test temperature or 7 days ± 1 hour if time required for the complete package to attain the temperature cannot be assessed.

### Test Method:

Place the test specimen in a test chamber on the face on which it normally is expected to be transported or stored. Install a thermocouple on the test specimen. Decrease the chamber temperature to -51 ± 2 °C at a rate not to exceed 3 °C per minute. Maintain the chamber at -51 ± 2 °C for either:

1. 16±0.5 hours after specimen has reached test temperature or
2. 7 days ± 1 hour if time required for the complete package to attain the temperature cannot be assessed.

Return the chamber temperature to ambient conditions at a rate not to exceed 3 °C per minute.

Perform a visual examination. The package is considered to have failed if it is unserviceable or is affected in any way which would potentially cause the test specimen to become unserviceable.

### Test Results:

All testing was performed per the Test Method and Requirements stated above. Upon completion of testing the cases were inspected and no visual evidence of damage was observed.

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KST-303-A Rev 1 – May 1, 2015

Tested By
Engineer
## TEST TITLE: Low Temperature

**CUSTOMER:** Pelcian Products, Inc.  
**Job No.:** 10443  
**Date:** 5/3/2016  
**Specimen:** Cases (Model 1485, 1525, 1535, 1555, 1605, 1615)  
**Technician:** I. Garcia  
**Serial No.:** See Rev. Insp.  
**Engineer:** T. Valfre  

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION LAST</th>
<th>CALIBRATION DUE</th>
<th>ACCY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber - Environmental</td>
<td>Wyle / Bally</td>
<td>Chamber 3</td>
<td>-175°F to +240°F &amp; Rh / 8'x8'x7'10&quot; / CO2 LN2</td>
<td>K10146</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
<td></td>
</tr>
<tr>
<td>Controller - Chamber</td>
<td>Watlow</td>
<td>System #10 F4 / Ez-Zone</td>
<td>-100°F to 500°F &amp; Rh</td>
<td>K10617</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
<td></td>
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<tr>
<td>Module - Multiplexer</td>
<td>Keithley</td>
<td>7700</td>
<td>20 Chans. 10 VDC or TC's</td>
<td>K10692</td>
<td>8/12/2015</td>
<td>8/12/2016</td>
<td>±2% / ±2°F</td>
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<tr>
<td>Multimeter/DAS</td>
<td>Keithley</td>
<td>2700</td>
<td>10VDC &amp; Type T TC's</td>
<td>K10170</td>
<td>8/12/2015</td>
<td>8/12/2016</td>
<td>±2% / ±2°F</td>
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<tr>
<td>Transmitter - Humidity &amp; Temperature</td>
<td>Vaisala</td>
<td>HMT337</td>
<td>0 to 100% RH / -40 to 356°F</td>
<td>K10593</td>
<td>1/12/2016</td>
<td>1/12/2017</td>
<td>±2%RH/±2°F</td>
</tr>
</tbody>
</table>

Where applicable, the listed test equipment has been calibrated using standards which are traceable to the National Institute of Science & Technology. Certificates and reports of all calibrations are retained in the Kelly Space & Technology, Inc. QA files and are available for inspection upon request. *Equipment identified as System Calibration are verified prior to use.

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KST-407 Rev 1 - May 1, 2015
# DATA SHEET

**Test Title**: Dry Heat  
**Customer**: Pelican Products, Inc.  
**Job No.**: 10443  
**Specimen**: Case Model 1485, 1525, 1535, 1555, 1605, 1615  
**Date Started**: 5/4/2016  
**Date Comp.**: 5/7/2016  
**Part No.**: See Recv. Insp.  
**Serial No.**: See Recv. Insp.  
**Spec.**: DEF STAN 81-41 Part3/4  
**Par.**: 14 & 17  
**Photo**: Yes  
**Amb. Temp.**: 75° ±15F

## Requirements:

**Pre-Conditioning:**
- **Temperature**: 25 ± 10°C  
- **Humidity**: 60 ± 15%  
- **Duration**: 16 hours or until specimen has reached temperature stabilization (whichever is the shortest period)

**Dry Heat Test:**
- **Temperature**: 71 ± 2°C  
- **Humidity**: Not to exceed 75%  
- **Duration**: 48 ±1 hours

## Test Method:

Place the test specimen in a test chamber on the face on which it normally is expected to be transported or stored. Install a thermocouple on the test specimen. Maintain the chamber at 25 ± 10°C and 60 ± 15% relative humidity for 16 hours or until the specimen has reached temperature stabilization (test specimen temperature within tolerance of chamber temperature).  

Increase the chamber temperature to 71 ± 2°C at a rate not to exceed 3°C per minute. Humidity is not to exceed 75%. Maintain the chamber at these conditions for 48 ± 1 hours.

Return the chamber temperature to ambient conditions at a rate not to exceed 3°C per minute. Perform a visual examination and document all results.

## Test Results:

All testing was performed per the Test Method and Requirements stated above. There was no visible damage to the test specimens upon completion of testing.

---

Tested By:  
Engineer:  
KST-303-A Rev 1 – May 1, 2015
Photograph 2
Dry Heat - Post Test
Photograph 6
Dry Heat - Post Test Case 1555
Photograph 8
Dry Heat - Post Test Case 1615
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber - Environmental</td>
<td>Wyle / Bally</td>
<td>Chamber 3</td>
<td>-175°F to +240°F &amp; Rh / 8’x8’x7’10” / CO2 LN2</td>
<td>K10146</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
</tr>
<tr>
<td>Controller - Chamber</td>
<td>Watlow</td>
<td>System #10 F4 / Ez-Zone</td>
<td>-100°F to 500°F &amp; Rh</td>
<td>K10617</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
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<tr>
<td>Module - Multiplexer</td>
<td>Keithley</td>
<td>7700</td>
<td>20 Chans. 10 VDC or TC’s</td>
<td>K10692</td>
<td>8/12/2015</td>
<td>±2% / ±2°F</td>
</tr>
<tr>
<td>Multimeter/DAS</td>
<td>Keithley</td>
<td>2700</td>
<td>10VDC &amp; Type T TC’s</td>
<td>K10170</td>
<td>8/12/2015</td>
<td>±2% / ±2°F</td>
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<tr>
<td>Transmitter - Humidity &amp; Temperature</td>
<td>Vaisala</td>
<td>HMT337</td>
<td>0 to 100% RH / -40 to 356°F F</td>
<td>K10593</td>
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<td>±2%RH/±2°F</td>
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</tbody>
</table>

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DATA SHEET

Test Title: Dust (IP6X)

Customer: Pelican Products, Inc.
Specimen: Case Model 1485, 1525, 1535, 1555, 1605, 1615
Part No.: See Recv. Insp.
Spec. IEC 60529 (IP6X)
Par. 13.4 & 13.6
Serial No.: See Recv. Insp.

Job No.: 10443
Date Started: 5/13/2016
Date Comp.: 5/13/2016

Photo: Yes
Amb. Temp.: 75° ±15F

Requirements:

Temperature: 15°C to 35°C
Relative Humidity: 25% to 75%
Dust: Talcum powder
Dust Concentration: 2 Kg per cubic meter test chamber volume
Duration: 8 hours

Test Method:

Place the test specimens in a test chamber. Establish a dust concentration of 2 Kg per cubic meter of test chamber volume. Expose the test specimen to this dust environment for 8 hours.

Remove accumulated dust from the test specimens by brushing, wiping, or shaking, taking care to avoid introducing additional dust into the test item. Do not remove dust by either air blast or vacuum cleaning. Perform a visual examination for evidence of damage or deterioration.

Test Results:

All testing was performed per the Test Method and Requirements stated above. No visual evidence of dust penetration or damage was observed to the case.

KST-303-A Rev 1 – May 1, 2015

Tested By
Engineer
Photograph 1
Dust - Setup
Photograph 16
Dust Case 1485 Post Test
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
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<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
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<td>Dust</td>
<td>-60°F to +180°F / 11'x7'x7&quot; / LN2</td>
<td>K10153</td>
<td>* System Calibration *</td>
<td>Mfg. Spec.</td>
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<td>System #8 922 / CN9000</td>
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<td>High Volume Air Sampler</td>
<td>Staplex</td>
<td>TFIA</td>
<td>70CFM</td>
<td>K10786</td>
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<td>8/9/2016</td>
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<td>Keithley</td>
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<td>10VDC &amp; Type T TC's</td>
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<td>0 to 1200 Grams</td>
<td>K10184</td>
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<td>7/21/2016</td>
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<td>11/9/2016</td>
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</table>

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DATA SHEET

Test Title: Immersion (IPX7)

Customer: Pelican Products, Inc.
Specimen: Case Model 1485, 1525, 1535, 1555, 1605, 1615
Part No.: See Recv. Insp.
Spec.: IEC 60529 (IPX7)

Job No.: 10443
Date Started: 5/16/2016
Serial No.: See Recv. Insp.
Date Comp.: 5/17/2016
Par. 14.2.7
Photo Yes
Amb. Temp. 75° ±15F

Requirements:

Water Level: Test specimens with a height less than 850 mm (33.46 inches) has the lowest point of the test specimen 1000 mm (39.37 inches) below the surface of the water. Test specimens with a height equal to or greater than 850 mm (33.46 inches) has the highest point of the test specimen 150 mm (3.9 inches) below the surface of the water.

Water Temperature: Water temperature does not differ from that of the equipment by more than 5 K (9°F)

Soak Duration: 30 minutes

Test Method:

Visually inspect the test specimen. Place the test specimen in a submersion tank. Test specimens with a height less than 850 mm (33.46 inches) has the lowest point of the test specimen 1000 mm (39.37 inches) below the surface of the water. Test specimens with a height equal to or greater than 850 mm (33.46 inches) has the highest point of the test specimen 150 mm (3.9 inches) below the surface of the water.

Verify the water temperature does not differ from that of the test item by more than 5 K (9°F). Allow the test specimen to soak for 30 minutes.

Remove the test specimen from the tank. Perform a visual inspection and check for the presence of water inside the test item. Document all results.

Test Results:

All testing was performed per the Test Method and Requirements stated above. The lowest point of the case was submerged 39.37" below the surface of the water. No visual evidence of water penetration or damage was observed to the case.
Photograph 1
Immersion - Case 1485 Setup
Photograph 12
Immersion - Case 1555 Post Test
Photograph 16

Immersion - Case 1615 Setup
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
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<tbody>
<tr>
<td>Chamber - Environmental</td>
<td>Wyle / Bally</td>
<td>Chamber 3</td>
<td>-175°F to +240°F &amp; Rh /</td>
<td>K10146</td>
<td>* System Calibration*</td>
<td>Mfg. Spec.</td>
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<tr>
<td></td>
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<td></td>
<td>8’x8’x7’10” / CO2 LN2</td>
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<tr>
<td>Controller - Chamber</td>
<td>Watlow</td>
<td>System #10 F4</td>
<td>-100°F to 500°F &amp; Rh</td>
<td>K10617</td>
<td>* System Calibration*</td>
<td>Mfg. Spec.</td>
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</table>
# DATA SHEET

<table>
<thead>
<tr>
<th>Test Title</th>
<th>Vertical Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Pelican Products, Inc.</td>
</tr>
<tr>
<td>Specimen</td>
<td>Case Model 1485, 1525, 1535, 1555, 1605, 1615</td>
</tr>
<tr>
<td>Part No.</td>
<td>See Recv. Insp.</td>
</tr>
<tr>
<td>Serial No.</td>
<td>See Recv. Insp.</td>
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<tr>
<td>Spec.</td>
<td>DEF STAN 81-41 Part 3/4</td>
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<tr>
<td>Par.</td>
<td>19</td>
</tr>
<tr>
<td>Photo</td>
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<tr>
<td>Amb. Temp.</td>
<td>75° ±15F</td>
</tr>
<tr>
<td>Job No.</td>
<td>10443</td>
</tr>
<tr>
<td>Date Started</td>
<td>5/17/2016</td>
</tr>
<tr>
<td>Date Comp.</td>
<td>5/19/2016</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Requirements:

Pre-Conditioning:
- Temperature: 25 ± 10°C
- Humidity: 60 ± 15%
- Duration: 16 hours or until specimen has reached temperature stabilization (whichever is the shortest period)

Vertical Impact:
- Drop Height: 39.4" ±0.79"
- Drops: One on each side
- Impact Surface: A solid mass at least 20 times that of the heaviest case and an area sufficiently large to ensure that the case fall entirely upon the surface.

## Test Method:

Lift the case and hold it at 39.4" ±0.79" between the lowest point of the case and at the time of release and the nearest point on the impact surface. Upon completion of drop perform a visual inspection and document the results. Repeat one drop for each additional case side. Reference Figure B-2-1 on the following page for surface identification.

## Test Results:

All testing was performed per the Test Method and Requirements stated above. No visual evidence of damage was observed to the cases following each impact.

KST-303-A Rev 1 – May 1, 2015

Tested By: [Signature]

Engineer: [Signature]
DATA SHEET

Test Title: Vertical Impact
Customer: Pelican Products, Inc.
Specimen: Case Model 1485, 1525, 1535, 1555, 1605, 1615
Part No.: See Recv. Insp.
Serial No.: See Recv. Insp.
Date: 5/17/2016
Job No.: 10443
Technician: S. Buckler 5-17-16
Engineer: T. Valire 5/17/16

Figure B-2-1.  Corner and Surface Identification (ref. ASTM D-5276)
Photograph 9
Vertical Impact - Case 1525 Face 4
Photograph 13
Vertical Impact - Case 1535 Face 3
NO IMAGE AVAILABLE
Photograph 22
Vertical Impact - Case 1555 Face 4
Photograph 26
Vertical Impact - Case 1005 Face 1
Photograph 30
Vertical Impact - Case 1605 Face 5
Photograph 34
Vertical Impact - Case 1615 Face 2
**TEST TITLE:**  Vertical Impact

**CUSTOMER:**  Pelican Products, Inc.  
**Job No.:**  10443  
**Date:**  5/17/2016

**Specimen:**  Cases (Model 1485, 1525, 1535, 1555, 1605, 1615)  
**Technician:**  S. Buckler  
**Serial No.:**  See Recv. Insp.  
**Engineer:**  T. Valfre  

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
<th>ACCY.</th>
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</table>

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# DATA SHEET

<table>
<thead>
<tr>
<th>Test Title</th>
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<tbody>
<tr>
<td>Customer</td>
<td>Pelican Products, Inc.</td>
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<tr>
<td>Specimen</td>
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</tr>
<tr>
<td>Part No.</td>
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<tr>
<td>Spec.</td>
<td>ATA Spec. 300 CAT I</td>
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<td>Par.</td>
<td>B-2-1</td>
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<tr>
<td>Serial No.</td>
<td>See Recv. Insp.</td>
</tr>
<tr>
<td>Job No.</td>
<td>10443</td>
</tr>
<tr>
<td>Date Started</td>
<td>5/18/2016</td>
</tr>
<tr>
<td>Date Comp.</td>
<td>5/19/2016</td>
</tr>
<tr>
<td>Photo</td>
<td>Yes</td>
</tr>
<tr>
<td>Amb. Temp.</td>
<td>75° ±15°F</td>
</tr>
</tbody>
</table>

## Requirements:

**Pre-Conditioning:**
- Temperature: \(23 \pm 1^\circ C\)
- Humidity: \(50 \pm 10\% \text{ RH}\)
- Duration: 24 hours minimum

**Drop:**
- Drop Height: \(39.4'' \pm 0.79''\)
- Total Drops: Face (160), Edge (80), Corner (40)
- Impact Surface: A solid mass at least 50 times that of the heaviest case and an area sufficiently large to ensure that the case fall entirely upon the surface.

## Test Method:

Lift the case and release the case at the required drop height and configuration listed below. Upon completion of the drop perform a visual inspection and document the results. Perform all drops in one configuration before continuing to the next.

- Face Drops - 30'' drop height. 160 total drops. 40 drops each on each face 1, 3, 4 & 5 per Figure B-2-1 on the next page.

- Edge Drops - 36'' drop height - 80 total drops. 20 drops each on each edge combination of 3-4, 3-5, 6-2, 1-2 per Figure B-2-1 on the next page.

- Corner Drops - 36'' drop height - 40 total drops. 10 drops each on each corner combination of 2-3-5, 3-4-6, 1-2-5 & 1-4-5 per Figure B-2-1 on the next page.

## Test Results:

All testing was performed per the Test Method and Requirements stated above. No visual evidence of damage was observed to the case following each drop in each configuration.

Tested By: Si. Buckle 5-19-16
Engineer: 5/19/16

KST-303-A Rev 1 – May 1, 2015
DATA SHEET

<table>
<thead>
<tr>
<th>Test Title</th>
<th>Drop Test</th>
<th>Date</th>
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<tbody>
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<td>Job No.</td>
<td>10443</td>
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<tr>
<td>Specimen</td>
<td>Case Model 1535</td>
<td>Technician</td>
<td>S. Buckler</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engineer</td>
<td>T. Valfre</td>
</tr>
</tbody>
</table>

**Figure B-2-1.** Corner and Surface Identification (ref. ASTM D-5276)

![Diagram of a box with corner and surface identification numbers]

KST-303-B Rev 1-May 1, 2015
Photograph 1
Drop Test - Case 1535 Corner 2-3-5 Typical
Drop Test - Case 1535 Corner 1-2-5 Typical

Photograph 3
Drop Test - Case 1535 Corner 1-4-5 Typical
Drop Test - Case 1535 Edge 3-5 Typical

Photograph 6
Photograph 8
Drop Test - Case 1535 Edge 1-2 Typical
Photograph 9

Drop Test - Case 1535 Face 3 Typical
<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
<th>MODEL #</th>
<th>RANGE</th>
<th>KELLY #</th>
<th>CALIBRATION</th>
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</table>

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DATA SHEET

Test Title: Penetration Test

Customer: Pelican Products, Inc.
Specimen: Case Model 1535
Part No.: See Recv. Insp.
Spec.: ATA Spec. 300 CAT I
Par.: B-2-5

Job No.: 10443
Date Started: 5/20/2016
Date Comp.: 5/20/2016
Serial No.: See Recv. Insp.

Photo: Yes
Amb. Temp.: 75° ±15F

Requirements:

Pre-Conditioning:
Temperature: 23 ± 1°C
Humidity: 50 ± 10% RH
Duration: 24 hours minimum

Drop:
Drop Height: 19.7"
Total Drops: 6 (One on each face)

Test Method:

The penetration test consist of a bar 3.2 centimeters in diameter with a hemispherical end, weighting 6 kilograms being dropped with its longitudinal axis vertical, onto the weakest point of any exterior surface of the container. Reference Figure B-2-1 on the following page for surface identification

Drop the bar once on each surface from a height of 19.7" (0.5 meters) as measured from the bottom of the bar to the top of the container surface.

Failure occurs if the bar either penetrates the outer wall or permanently damages it in a manner which will degrade the structural strength of the container or container wall. Document all results.

Test Results:

All testing was performed per the Test Method and Requirements stated above. No visual evidence of damage was observed to the case following each drop.
## DATA SHEET

<table>
<thead>
<tr>
<th>Test Title</th>
<th>Penetration Test</th>
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<th>5/20/2016</th>
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<td>Job No.</td>
<td>10443</td>
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<td>Technician</td>
<td>S. Buckle</td>
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<tr>
<td></td>
<td></td>
<td>Engineer</td>
<td>T. Valfre</td>
</tr>
</tbody>
</table>

**Figure B-2-1.** Corner and Surface Identification (ref. ASTM D-5276)

![Diagram of a case with numbers indicating corner and surface identification]
## Test Report

**Customer:** Pelican Products, Inc.  
**Job No.:** 10443  
**Date:** 5/20/2016  
**Specimen:** Case (Model 1535)  
**Technician:** S. Buckler  
**Serial No.:** See Recv. Insp.  
**Engineer:** T. Valfre

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<tr>
<th>EQUIPMENT</th>
<th>MANUFACTURER</th>
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KST-407 Rev 1 - May 1, 2015