# APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

**APPLICATION #: OSP-0558**

## HCAI Special Seismic Certification Preapproval (OSP)

**Type:** ☐ New ☒ Renewal

## Manufacturer Information

Manufacturer: Global Plasma Solutions, Inc. DBA GPS Air

Manufacturer's Technical Representative: Paul Glowacki

Mailing Address: 3101 Yorkmont Road,Suite 400, Charlotte, NC 28208

Telephone: (980) 279-5622 Email: PGlowacki@gpsair.com

## Product Information

Product Name: Air Conditioning Units

Product Type: Air Filters

Product Model Number: See Attachment

General Description: Modular ionization system consisting of 6-inch ionization bar sections, end cap, ion detector sensor, power cable with connectors, power supply, and optional NEMA enclosure for power supply.

Mounting Description: Units are wall mounted (rigid or flexible)

Tested Seismic Enhancements: None



## Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Pkwy # 109, Sparks, NV 89431

Telephone: (775) 385-5085 Email: kelly@shaketest.com

Title: Business Manager

## California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

## Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

## Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Kelly Laplace

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: Kelly@shaketest.com

## Seismic Parameters

Design Basis of Equipment or Components ($F_p/W_p$) = 1.50 (Sds 2.0g, z/h=1); 1.13 (Sds 2.5g, z/h=0)

$S_{DS}$ (Design spectral response acceleration at short period, g) = Sds 2.0g, z/h=1; Sds 2.5g, z/h=0

$a_p$ (Amplification factor) = 2.5

$R_p$ (Response modification factor) = 6.0

$\Omega_0$ (System overstrength factor) = 2.0

$I_p$ (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment



## HCAI Approval (For Office Use Only) - Approval Expires on 09/14/2028

Date: 9/14/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: $S_{DS}$ (g) = See Above z/h = See Above

Condition of Approval (if applicable):

# Special Seismic Certification
# Table 1 - Certified Components

**DCL Project Number:** 13122-2201

**Manufacturer:** Global Plasma Solutions, Inc. DBA GPS Air (GPS)
**Product Line:** GPS iMOD
**Mounting Description:** Rigid / Isolated Wall Mount
**Test Levels:** Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

**Ionization Bars**

| Manufacturer Model Number | Manufacturer | Max. Horizontal Distance Between Attachments (in) | Support Material Thickness (gage) | Max. Distance for Unsupported Mid-Coil Span (in) | Max. Weight[1] (lb) | Unit |
|---|---|---|---|---|---|---|
| GPS-iMOD-6-Screw | GPS | 32 | 18 | 65 | 3.5 | UUT-01a,b, UUT-02a,b |
| GPS-iMOD-6-Snap | GPS | 36 | 18 | 63 | 3.2 | UUT-05a,b, UUT-06a,b |

**Power Supplies**

| Manufacturer Model Number | Manufacturer | Dimensions (DxWxH) (in) | Weight (lb) | Unit |
|---|---|---|---|---|
| GPS-iMOD-Steel | GPS | 5.0 x 3.5 x 8.0 | 5.0 | UUT-03a,b |
| GPS-iMOD-Steel with NEMA enclosure | GPS | 7.5 x 14.0 x 15.0 | 15.0 | UUT-04a,b |
| GPS-iMOD-Nylon | GPS | 5.0 x 4.3 x 9.0 | 4.6 | UUT-07a,b |
| GPS-iMOD-Nylon with NEMA enclosure | GPS | 6.3 x 13.5 x 15.5 | 16.4 | UUT-08a,b |

Notes:
1. Maximum weight is a the measured test weight of an end cap, power cable with connectors, ion detector sensors, and (12) ionization bar sections combined.

## Special Seismic Certification
## Table 2 - Certified Subcomponents

**DCL Project Number:** 13122-2201

**Certified Seismic Level:** Sds=2.0, z/h=1.0; Sds=2.5, z/h=0.0

| Model | Subcomponent | Manufacturer | Notes | Material of Construction | Weight (lb) | Unit |
|---|---|---|---|---|---|---|
| GPS-iMOD-6-Screw | 6-Inch Ionization Bar Sections | GPS | 6"L x 0.75"W x 0.75"H | UL94VO Composite | 0.3 | UUT-01a,b, UUT-02a,b |
| GPS-iMOD-6-Snap | 6-Inch Ionization Bar Sections | GPS | 6"L x 0.75"W x 0.75"H | UL94VO Composite | 0.3 | UUT-05a,b, UUT-06a,b |
| GPS-iMOD-EC | End Cap | GPS | 0.5" diameter | UL94VO Composite | <0.1 | UUT-01a,b, UUT-02a,b, UUT-05a,b, UUT-06a,b |
| GPS-iDetect-P | Ion Detector Sensor | GPS | 1" diameter x 10" long | UL94VO Composite | 0.2 | UUT-01a,b, UUT-02a,b, UUT-05a,b, UUT-06a,b |
| GPS-iMOD-PC-Screw | Power Cable with Connectors | GPS | 5500VAC / 2mA | UL94VO Composite | 0.3 | UUT-01a,b, UUT-02a,b |
| GPS-iMOD-PC-Snap | Power Cable with Connectors | GPS | 5500VAC / 2mA | UL94VO Composite | 0.3 | UUT-05a,b, UUT-06a,b |
| GPS-iMOD-Steel | Power Supply[1] | GPS | 24V/0.625A | Carbon steel | 5.0 | UUT-03a,b |
| | | | 110V/0.14A | | | Interpolated |
| | | | 208-240V/0.07A | | | UUT-04a,b |
| GPS-iMOD-Nylon | Power Supply[1] | GPS | 24V/0.625A | Nylon | 4.6 | UUT-07a,b |
| | | | 110V/0.14A | | | Interpolated |
| | | | 208-240V/0.07A | | | UUT-08a,b |
| AMU1426TF | NEMA Enclosure for Power Supply | Allied Moulded Products, INC. | 7.5"D x 14.0"W x 15.0"H | Fiberglass / NEMA 4X | 8.0 | UUT-04a,b |
| J1412HPL | NEMA Enclosure for Power Supply | Stahlin | 6.3"D x 13.5"W x 15.5"H | Fiberglass / NEMA 4X | 9.9 | UUT-08a,b |

Notes:

1. Power supplies with different ratings are physically identical; an internal voltage selector switch is employed to change between electrical ratings.

## Special Seismic Certification
## Table 3 - Tested Units

**DCL Project Number:** 13122-2201
**Manufacturer:** Global Plasma Solutions, Inc. DBA GPS Air (GPS)
**Product Line:** GPS iMOD
**Mounting Description:** Rigid / Isolated Wall Mount
**Test Levels:** Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

**Ionization Bars**

| Manufacturer Model Number | Manufacturer | Ion Detector Sensor Attached | Support Material Thickness (gage) | Tested Distance Between Attachments (in) | Max. Distance for Unsupported Mid-Coil Span (in) | Tested Weight [ lb ] | Mounting | Unit |
|---|---|---|---|---|---|---|---|---|
| GPS-iMOD-6-Screw | GPS | Yes | 18 | 16 and 32 | N/A | 3.0 | Rigid wall | UUT-01a |
| GPS-iMOD-6-Screw | GPS | Yes | 18 | 16 and 32 | N/A | 3.0 | Isolated wall | UUT-01b |
| GPS-iMOD-6-Screw | GPS | Yes | 18 | 65 | 65 | 3.5 | Rigid wall | UUT-02a |
| GPS-iMOD-6-Screw | GPS | Yes | 18 | 65 | 65 | 3.5 | Isolated wall | UUT-02b |
| GPS-iMOD-6-Snap | GPS | Yes | 18 | 18 and 36 | N/A | 2.4 | Rigid wall | UUT-05a |
| GPS-iMOD-6-Snap | GPS | Yes | 18 | 18 and 36 | N/A | 2.4 | Isolated wall | UUT-05b |
| GPS-iMOD-6-Snap | GPS | Yes | 18 | 63 | 63 | 3.2 | Rigid wall | UUT-06a |
| GPS-iMOD-6-Snap | GPS | Yes | 18 | 63 | 63 | 3.2 | Isolated wall | UUT-06b |

**Power Supplies**

| Manufacturer Model Number | Manufacturer | Dimensions (DxWxH) (in) | Tested Weight [ lb ] | Mounting | Unit |
|---|---|---|---|---|---|
| GPS-iMOD-Steel | GPS | 5.0 x 3.5 x 8.0 | 5.0 | Rigid wall | UUT-03a |
| GPS-iMOD-Steel | GPS | 5.0 x 3.5 x 8.0 | 5.0 | Isolated wall | UUT-03b |
| GPS-iMOD-Steel with NEMA enclosure | GPS | 7.5 x 14.0 x 15.0 | 15.0 | Rigid wall | UUT-04a |
| GPS-iMOD-Steel with NEMA enclosure | GPS | 7.5 x 14.0 x 15.0 | 15.0 | Isolated wall | UUT-04b |
| GPS-iMOD-Nylon | GPS | 5.0 x 4.3 x 9.0 | 4.6 | Rigid wall | UUT-07a |
| GPS-iMOD-Nylon | GPS | 5.0 x 4.3 x 9.0 | 4.6 | Isolated wall | UUT-07b |
| GPS-iMOD-Nylon with NEMA enclosure | GPS | 6.3 x 13.5 x 15.5 | 16.4 | Rigid wall | UUT-08a |
| GPS-iMOD-Nylon with NEMA enclosure | GPS | 6.3 x 13.5 x 15.5 | 16.4 | Isolated wall | UUT-08b |

# UNIT UNDER TEST (UUT)
# Summary Sheet

## UUT-01a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-6-Screw

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** UL94VO Composite

***Options / Component Summary:***

Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor.

***Unit Mounting Description:***

UUT-01a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one screw per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 16'', 32'' and 3'', respectively. 18 gage sheet metal backed the entire length of the UUT. For the isolated shake (UUT-01b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.

***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 3.0 | 2.0 | 60.0 | 3.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

**Figure 1.** Overall view of UUT-01a


**Figure 2.** Overall view of UUT-01b

**Figure 3.** Close-up overall view of UUT-01a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT) Summary Sheet

## UUT-02a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-6-Screw

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** UL94VO Composite

***Options / Component Summary:***

Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor.

***Unit Mounting Description:***

UUT-02a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 3'', 65'' and 3'', respectively. 18 gage sheet metal backed the two 3" spans, but the 65" span was unsupported. For the isolated shake (UUT-02b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.

***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 3.5 | 2.0 | 73.0 | 3.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

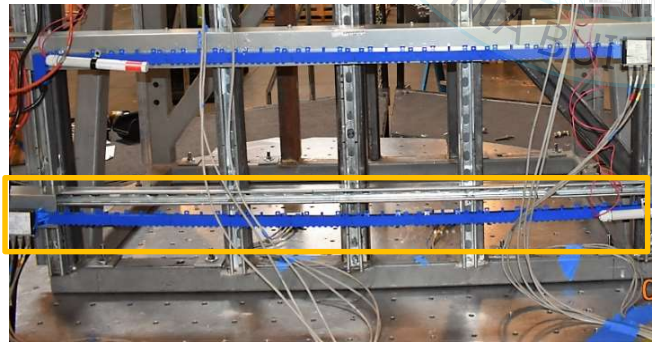

**Figure 1.** Overall view of UUT-02a

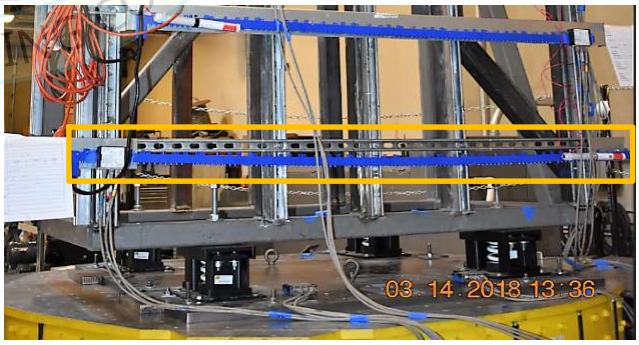


**Figure 2.** Overall view of UUT-02b

**Figure 3.** Close-up overall view of UUT-02a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

## UUT-03a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-Steel

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** Carbon steel power supply box

***Options / Component Summary:*** Power Supply

***Unit Mounting Description:***

UUT-03a,b was attached to the DCL wall fixture with (4) #8 self-tapping screws, one in each corner. For the isolated shake (UUT-03b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.



***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 5.0 | 5.0 | 3.5 | 8.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |


**Figure 1.** Overall view of UUT-03a

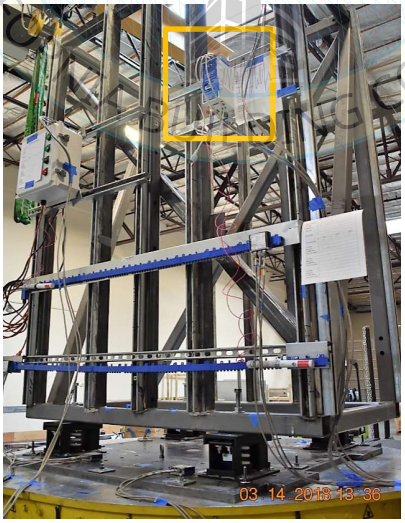


**Figure 2.** Overall view of UUT-03b


**Figure 3.** Close up overall view of UUT-03a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

## UUT-04a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-Steel with NEMA enclosure

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** Carbon steel power supply box and fiberglass / NEMA 4x enclosure

***Options / Component Summary:*** Power supply box and fiberglass / NEMA 4x enclosure

***Unit Mounting Description:***

UUT-04a,b was attached to the DCL wall fixture with (4) ¼'' diameter, Grade 5, bolts with channel nuts, one per each corner, slotted into 12 gage unistrut. For the isolated shake (UUT-04b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, Grade 5, bolts each. Each isolator had a single ¾'' diameter, Grade 5, bolt to connect to the DCL wall fixture. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.

***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 15.0 | 7.5 | 14.0 | 15.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |


**Figure 1.** Overall view of UUT-04a

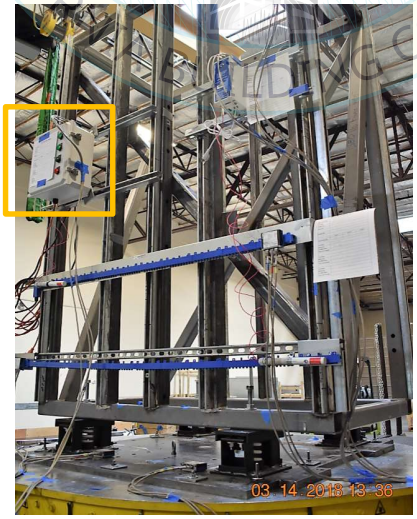


**Figure 2.** Overall view of UUT-04b


**Figure 3.** Close up overall view of UUT-04a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

# UUT-05a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-6-Snap

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** UL94VO Composite

***Options / Component Summary:***

Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor.

***Unit Mounting Description:***

UUT-05a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one screw per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 18'', 36'' and 3'', respectively. 18 gage sheet metal backed the entire length of the UUT. For the isolated shake (UUT-05b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.

***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 2.4 | 1.0 | 61.5 | 3.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

**Figure 1.** Overall view of UUT-05a

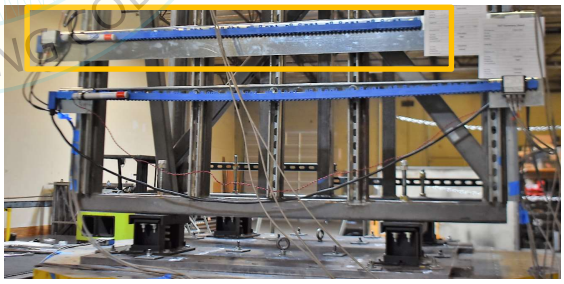

**Figure 2.** Overall view of UUT-05b

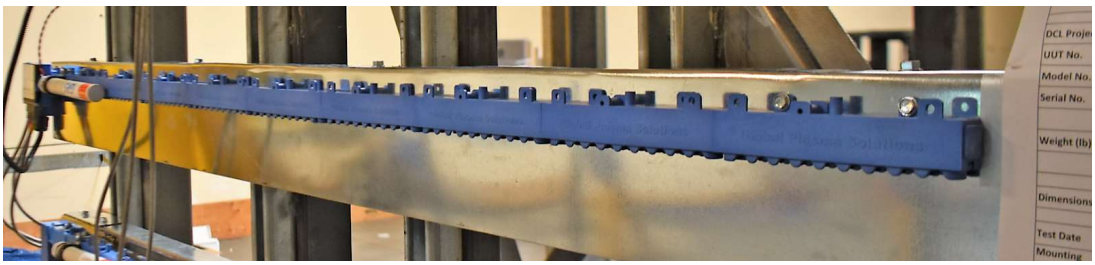

**Figure 3.** Close-up overall view of UUT-05a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

# UUT-06a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-6-Snap

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** UL94VO Composite

***Options / Component Summary:***

Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor.

***Unit Mounting Description:***

UUT-06a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 3'', 63'' and 3'', respectively. 18 gage sheet metal backed the two 3" spans, but the 63" span was unsupported. For the isolated shake (UUT-06b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.

***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 3.2 | 1.0 | 73.3 | 3.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

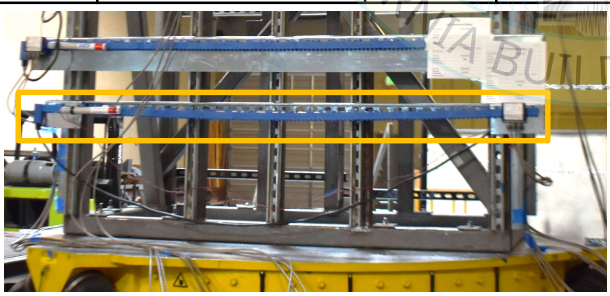

**Figure 1.** Overall view of UUT-06a

**Figure 2.** Overall view of UUT-06b

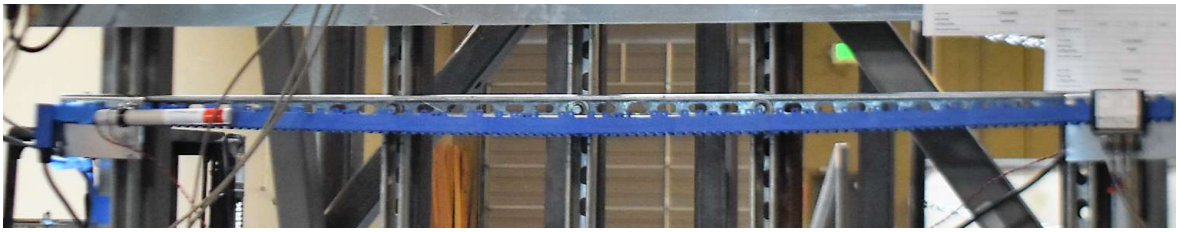

**Figure 3.** Close-up overall view of UUT-06a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

## UUT-07a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-Nylon

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** Nylon

***Options / Component Summary:*** Power Supply

***Unit Mounting Description:***

UUT-07a,b was attached to the DCL wall fixture with (4) #8 self-tapping screws, one in each corner. For the isolated shake (UUT-07b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.



***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 4.6 | 5.0 | 4.3 | 9.0 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

**Figure 1.** Overall view of UUT-07a

**Figure 2.** Overall view of UUT-07b


**Figure 3.** Close up overall view of UUT-07a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**

# UNIT UNDER TEST (UUT)
# Summary Sheet

## UUT-08a,b

**DCL Project Number: 13122-2201**

***Manufacturer:*** Global Plasma Solutions (GPS)

***Product Line:*** GPS iMOD

***Model Number:*** GPS-iMOD-Nylon with NEMA

***Mounting:*** Rigid / Isolated Wall Mount

***Product Construction Summary:*** Nylon power supply box and fiberglass / NEMA 4x enclosure

***Options / Component Summary:*** Power supply box and fiberglass / NEMA 4x enclosure

***Unit Mounting Description:***

UUT-08a,b was attached to the DCL wall fixture with (4) ¼'' diameter, grade 5 bolts with channel nuts, one on each corner, slotted into 12 gage unistruts. For the isolated shake (UUT-08b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½'' diameter, grade 5 bolts each. Each isolator had a single ¾'' diameter, grade 5 bolt to connect to the DCL wall fixture.



***UUT Properties***

| Operating Weight (lb) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 16.4 | 6.3 | 13.5 | 15.5 | N/A | N/A | N/A |

***Seismic Test Parameters***

| Building Code | Test Criteria | Sds (g) | z/h | Ip | Aflx-H (g) | Arig-H (g) | Aflx-V (g) | Arig-V (g) |
|---|---|---|---|---|---|---|---|---|
| CBC 2022 | ICC-ES AC156 | 2.0 | 1.0 | 1.5 | 3.20 | 2.40 | 1.68 | 1.68 |
| | | 2.5 | 0.0 | | | | | |

**Figure 1.** Overall view of UUT-08a

**Figure 2.** Overall view of UUT-08b


**Figure 3.** Close up overall view of UUT-08a,b

**Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.**