Noise Impact Assessment
Pomham Solar

Iron Mine Hill Road
AP 16, Lot 19
North Smithfield, Rhode Island

PREPARED FOR:
Islander Solar, LLC
396 Springfield Avenue, 2nd Floor
Summit, NJ 07901

PREPARED BY:
ESS Group, Inc.
404 Wyman Street, Suite 375
Waltham, Massachusetts 02451

ESS Project No. P322-001

January 7, 2022

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1.0 INTRODUCTION

ESS Group, Inc. (ESS) was contracted by Islander Solar, LLC (the Client) for professional consulting services related to the permitting of a proposed ground mounted Photovoltaic Solar Energy System (PSES) project called Pomham Solar, located at Assessor's Plat 16, Lot 19 in North Smithfield, Rhode Island. The purpose of this assessment was to evaluate the predicted sound levels at the property line as a result of the operation of the PSES. The following sections detail the methodology used and the final results of the project noise impact assessment. Relevant backup documentation supporting these analyses has been included in Appendix A.

2.0 CONCEPTS OF ENVIRONMENTAL SOUND

Sounds are generated by a variety of sources (e.g., a musical instrument, a voice speaking, or an airplane that passes overhead). Energy is required to produce sound and this sound energy is transmitted through the air in the form of sound waves – tiny, quick oscillations of pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear. The range of sound pressures that can be detected by a person with normal hearing is very wide, ranging from about 20 micro-pascals (µPa) for very faint sounds at the threshold of hearing to nearly 10 million µPa for extremely loud sounds, such as a jet during take-off at a distance of 300 feet. Because the range of human hearing is so wide, sound levels are reported using "sound pressure levels", which are expressed in terms of decibels. The sound pressure level in decibels is the logarithm of the ratio of the sound pressure of the source to the reference sound pressure of 20 µPa, multiplied by 20.

Table 1 provides some examples of common sources of sound and their sound pressure levels. All sound levels in this assessment are provided in A-weighted decibels, abbreviated "dB(A)" or "dBA." The A-weighted sound level reflects how the human ear responds to sound, by deemphasizing sounds that occur in frequencies at which the human ear is least sensitive to sound (at frequencies below about 100 hertz and above 10,000 hertz) and emphasizing sounds that occur in frequencies at which the human ear is most sensitive to sound (in the mid-frequency range from about 200 to 8,000 hertz). In the context of environmental sound, noise is defined as "unwanted sound."

Table 1: Examples of Common Indoor and Outdoor A-Weighted Sound Pressure Levels

Sound Level dB(A)	Common Indoor Sounds	Common Outdoor Sounds
110	Rock Band	Jet Takeoff at 1000 feet
100	Inside NYC Subway Train	Chain Saw at 3 feet
90	Food Blender at 3 feet	Impact Hammer (Hoe Ram) at 50 feet
80	Garbage Disposal at 3 feet	Diesel Truck at 50 feet
70	Vacuum Cleaner at 10 feet	Lawn Mower at 100 feet
60	Normal Speech at 3 feet	Auto (40 mph) at 100 feet
50	Dishwasher in Next Room	Busy Suburban Area at night
40	Empty Conference Room	Quiet Rural Area during daytime
25	Empty Concert Hall	Rural Area at night

Sound pressure levels are typically presented in community noise assessments utilizing the noise metrics described below and expressed in terms of A-weighted decibels.

- "L_{10}" is the sound level that is exceeded for 10 percent of the time. This metric is a measure of the intrusiveness of relatively short-duration noise events that occurred during the measurement period.
- "L_{90}" is the sound level that is exceeded for 90 percent of the time and is a measure of the background or residual sound levels in the absence of recurring noise events.
- "L_{eq}" is the is the constant sound level which would contain the same acoustic energy as the varying sound levels during the time period, and is representative of the average noise exposure level for that time period.
- "L_{MAX}" is the instantaneous maximum sound level for the time period.

It is often necessary to combine the sound pressure levels from one or more sources. Because decibels are logarithmic quantities, it is not possible to simply add the values of the sound pressure levels together. For example, if two sound sources each produce 70 dB and they are operated together, their combined impact is 73 dB – not 140 dB as might be expected. Four equal 70 dB sources operating simultaneously result in a total sound pressure level of 76 dB. In fact, for every doubling of the number of equal sources, the sound pressure level goes up another three decibels. A tenfold increase in the number of sources makes the sound pressure level increase by 10 dB, while a hundredfold increase makes the level increase by 20 dB. The logarithmic combination of *n* different sound levels is calculated by the following equation:

$$L_{total}=10*\log_{10}\left(10^{\frac{L_1}{10}}+10^{\frac{L_2}{10}}+\ldots+10^{\frac{L_n}{10}}\right)$$

Perceived changes in sound level can be slightly more subjective; the average person will not notice a change of 1-2 dB, a 3 dB increase is just barely perceptible, while a 5 dB change is clearly noticeable.

3.0 APPLICABLE NOISE STANDARDS AND REGULATIONS

The State of Rhode Island does not have noise regulations that are applicable to the proposed solar array. Applicable noise standards are contained within the ordinances of the Town of North Smithfield.

The North Smithfield Ordinances, Chapter 8 Health and Sanitation, Article VII, "Noise" prohibits projection of noise into certain use districts that exceeds the octave band or overall noise thresholds as shown below, or exceeds the ambient noise level by more than five decibels. The Site and surrounding properties are within the Residential District, Zone RA (Rural Agricultural).

Table 2: North Smithfield Maximum Permissible Sound Levels

Zoning District	Residential	
Octave Band Center Frequency of all Measurement (HZ)>	Daytime	All Other Times
31.5	61	53
63	60	52
125	56	48
250	54	44
500	50	40
1000	47	37
2000	43	33
4000	39	29
8000	38	28
Single Number Equivalent	53 dBA	43 dBA

From North Smithfield Noise Ordinance, Sec. 8-118, Table 1

In addition, North Smithfield zoning regulation 5.7.5(e)(2), "Noise Generation," requires that “Solar photovoltaic systems shall not generate noise above ambient beyond a lot line on which a solar photovoltaic system is installed. Specifically, there shall be a 0db increase over the ambient levels at the Applicant’s property boundary lines.” For the purpose of this assessment, a typical quiet rural area ambient noise level of 40 dB(A) has been assumed.

4.0 ASSESSMENT OF EXISTING ENVIRONMENT

The Site is comprised of approximately 22 acres of forested land identified by the Town of North Smithfield Assessor’s Department as Assessor Plat 16 on Lot 19. Based on readily available GIS data, jurisdictional resource areas include wetlands to the west and south of the Site and an unnamed stream to the west of the Site. Trail paths extend from north to south in the northern and eastern sections of the property and east and west in the center and southern portions the Site. No buildings, structures or occupants are present on the Site. The Site contains multiple elevations changes in topography with the steepest change traversing from the north to the southwestern parcel boundary. The Site is bordered to the north and east by residential properties along Iron Mine Hill Road, to the south and west by undeveloped forested land. The proposed solar array layout and topography is shown in Figure 1 on the next page.

Pomham Solar Array (Concept
North Smithfield, Rhode Island

1 inch = 300 feet

Source: 1) ESS, Sound Contours, 2021
2) ESRI, Imagery/Transportation, 2020-2021
3) ESS/Nautilus, Conceptual Layout, 2021

Legend
- Inverter
- Transformer
- Property Line Receptor
- Property Line

Site Layout

Figure 1

5.0 PREDICTIVE MODELING

This section describes the methods, assumptions, and results of the Cadna-A® noise modeling used to predict future sound levels resulting from the operation of the proposed solar array at the property line.

5.1 Noise Prediction Model

The Cadna-A® computer noise model was used to predict future sound pressure levels from the operation of the proposed solar array at the property line and at the nearest noise-sensitive areas. An industry standard, Cadna-A® was developed by DataKustik GmbH to provide an estimate of sound levels at distances from specific noise sources. This model takes into account:

- Sound power levels from stationary and mobile sources;
- The effects of terrain features including relative elevations of noise sources;
- The locations of noise-sensitive land use;
- Intervening objects including buildings and sound barrier walls; and
- Ground effects due to areas of pavement and unpaved ground.

Cadna-A® accounts for shielding and reflections due to intervening buildings or other structures in the propagation path, as well as diffracted paths around and over structures, which tend to reduce computed noise levels. The shielding effects due to intervening terrain are included in the model. The shielding effects due to the proposed photovoltaic solar panels and ground vegetation were excluded from the model to provide a level of conservatism to the analysis.

For ground effects, the reflectivity of the surface is described by a “ground factor” variable (G), which ranges from 0 for ‘hard’ ground (paved surfaces, concrete, etc.) and 1 for “porous” ground (grassland and other vegetated areas). The model used a “porous” ground absorption factor (G) of 1.0 to represent typical ground conditions, since the ground beneath and around the solar arrays will remain vegetated.

The International Standards Organization current standard for outdoor sound propagation (ISO 9613 Part 2 – “Attenuation of sound during propagation outdoors”) was used within Cadna-A®. This standard provides a method for calculating environmental noise in communities from a variety of sources with known emission levels. The method contained within the standard calculates the attenuation over the entire sound path under weather conditions that are favorable for sound propagation, such as for downwind propagation or “under a well-developed moderate ground-based temperature inversion.” Application of conditions that are favorable for sound propagation yields conservative estimates of operational noise levels in the surrounding area.

5.2 Modeling Inputs

Based on the proposed site design of the proposed solar array, the noise-producing sources on the site during operation will be the power inverters and transformers. Nine equipment pads, each with a string inverter and electrical distribution transformer were modeled along the central access roads of the array. The location of these sources is shown on Figure 1.

The source model inputs were based on the electrical equipment specifications provided by the Client. The inverter sound level was based on a CPS 100/125kW three-phase string inverter, which has a manufacturer sound pressure level of <65 dBA at 1 meter, with a resulting sound power level of 76 dBA. The transformer sound level was based on a 2500kVA Cooper Power Systems wet-type transformer with a NEMA TR-1 rating sound power level of 63 dBA. Since the sound-producing equipment were assumed to be

continuously operating, the L_{90} (background level) and L_{EQ} (equivalent constant level) of the proposed equipment are the same for the purposes of this assessment.

Table 3: Noise Source Inputs to the Cadna-A Model

Name	Source Height*	Octave Band Sound Power Levels (dB)									Total (dBA)
		31.5	63	125	250	500	1000	2000	4000	8000	
Inverter (20)	1 m	29.6	42.8	52.9	60.4	65.8	69.0	70.2	70.0	67.9	76.0
Transformer (1)	1 m	16.6	29.8	39.9	47.4	52.8	56.0	57.2	57.0	54.9	63.0

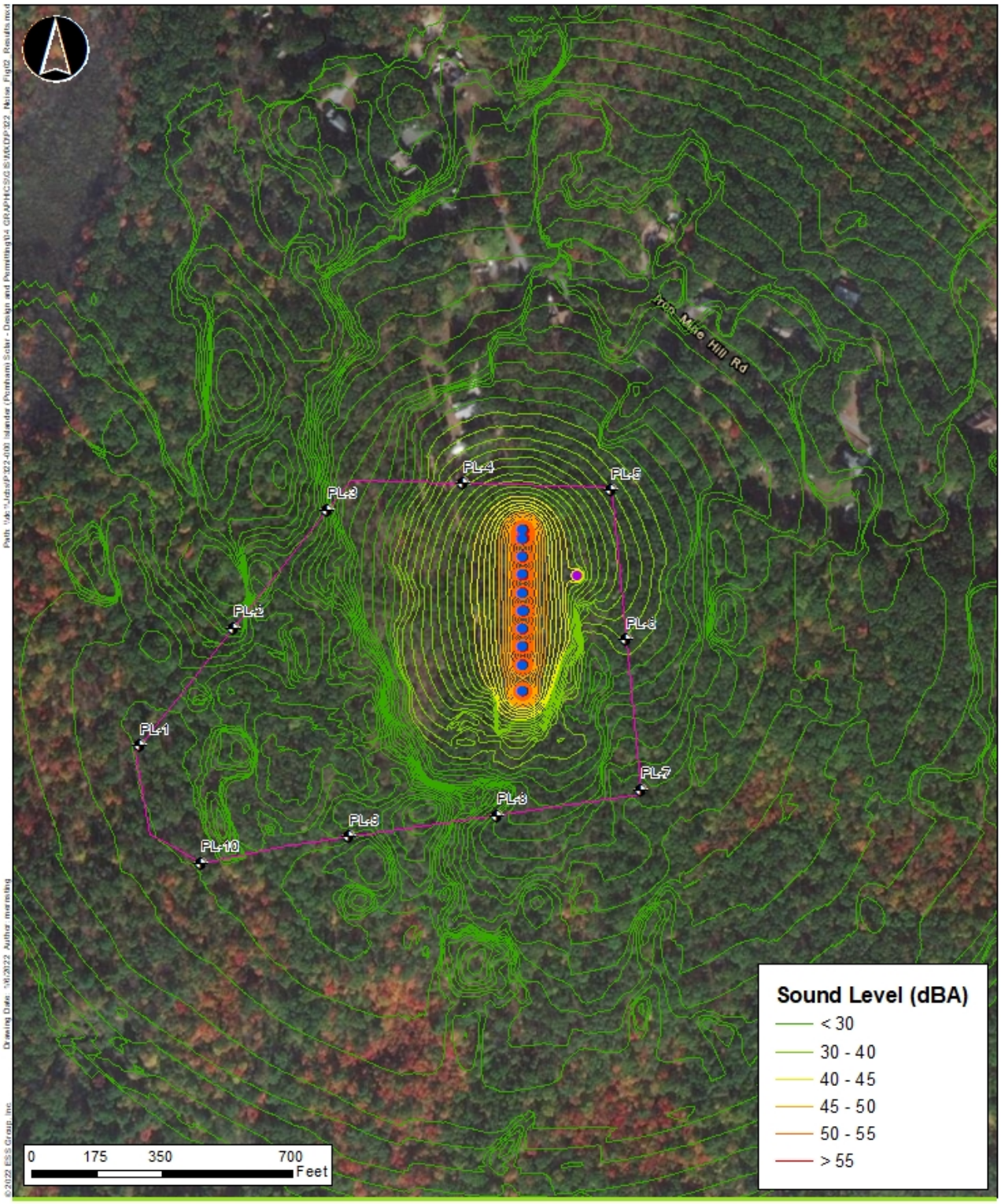
* Heights based on component dimensions and mounting orientation, assumed pad-mounted inverters and transformers. Source levels are extrapolated from manufacturer-provided sound pressure level specifications at 1 meter.

The proposed site layout and existing topography were used to create a terrain model that represents the topography during operation of the proposed facility. Figure 1 shows the proposed topography within the Site. The inputs to the model are 0.5-meter contours, based on existing 2011 LIDAR data from Rhode Island Geographic Information System (RIGIS) and the conceptual equipment locations provided electronically by the Client on December 28, 2021. The model assumed continuous and simultaneous operation of all sound-producing equipment. This was a conservative assumption, since not all equipment will be operating continuously at full load. A search radius of 2,000 meters from each receptor was used in the model to ensure that all noise sources contributing to the predicted facility noise level were modeled at every noise-sensitive receptor.

5.3 Comparison to Estimated Baseline Noise Levels

Cadna-A® allows the user to place receptors at selected locations and predicts sound levels at those specific receptor locations. For this analysis, specific receptors were placed at property line locations only.

Table 3 presents the predicted sound levels resulting solely from the operation of the proposed solar array along with the range of typical background noise levels (conservative values for a typical L_{90} measurement). The model also calculated sound levels for the surrounding area, using a 1-meter receptor grid, with a receptor height of 1.55 meters (representative of average ear height). This data is displayed in the isopleths on Figure 2, which show lines of equal sound level at the site and the surrounding area.



Pomham Solar Array (Concep
North Smithfield, Rhode Island

1 inch = 350 feet

Source: 1) ESS, Sound Contours, 2021
2) ESRI, Imagery/Transportation, 2020-2021
3) ESS/Nautilus, Conceptual Layout, 2021

Noise Impacts

Legend
- Inverter
- Transformer
- Property Line Receptor
- Property Line

Figure 2

Table 3: Cadna-A Modeling Result Sound Levels

Site ID	Solar Array Noise Level (dBA)
PL-1	17.3
PL-2	11.4
PL-3	20.1
PL-4	35.5
PL-5	33.0
PL-6	31.7
PL-7	23.5
PL-8	25.7
PL-9	17.3
PL-10	17.1
Max	<38.0

6.0 CONCLUSION

The results of this Noise Impact Assessment indicate that the maximum predicted sound levels from the proposed photovoltaic solar array will likely not be perceptible at or beyond the property line and will be below the local noise ordinance thresholds set in the North Smithfield Noise Ordinance. The maximum sound level modeled at the property line is less than 38 dBA. This is below the assumed typical ambient daytime noise level of 40 dBA and the maximum permissible daytime level of 53 dBA.

100/125kW, 1500Vdc String Inverters for North America

CPS SCH100/125KTL-DO/US-600

The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box inlcudes touch safe fusing for up to 20 strings. The CPS Flex Gateway enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2014 and 2017 compliant
- Touch safe DC Fuse holders adds convenience and safety
- CPS Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
- Generous 1.87 and 1.5 DC/AC Inverter Load Ratios
- Separable wire-box design for fast service
- Standard 5 year warranty with extensions to 20 years

100/125KTL Standard Wire-box

100/125KTL Centralized Wire-box

C SP US

This device complies with part 15 of the FCC Rules

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCH100KTL-DO/US-600	CPS SCH125KTL-DO/US-600
DC Input		
Max. PV Power	187.5kW	
Max. DC Input Voltage	1500V	
Operating DC Input Voltage Range	860-1450Vdc	
Start-up DC Input Voltage / Power	900V / 250W	
Number of MPP Trackers	1	
MPPT Voltage Range[1]	870-1300Vdc	
Max. PV Input Current (Isc x1.25)	275A	
Number of DC Inputs	20 PV source circuits, pos. & neg. fused (Standard Wire-box) 1 PV output circuit, 1-2 terminations per pole, non-fused (Centralized Wire-box)	
DC Disconnection Type	Load-rated DC switch	
DC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
AC Output		
Rated AC Output Power	100kW	125kW
Max. AC Output Power[2]	100kVA (111KVA @ PF>0.9)	125kVA (132KVA @ PF>0.95)
Rated Output Voltage	600Vac	
Output Voltage Range[3]	528-660Vac	
Grid Connection Type[4]	3Φ / PE / N (Neutral optional)	
Max. AC Output Current @600Vac	96.2/106.8A	120.3/127.2A
Rated Output Frequency	60Hz	
Output Frequency Range[3]	57-63Hz	
Power Factor	>0.99 (±0.8 adjustable)	>0.99 (±0.8 adjustable)
Current THD	<3%	
Max. Fault Current Contribution (1-cycle RMS)	41.47A	
Max. OCPD Rating	150A	175A
AC Disconnection Type	Load-rated AC switch	
AC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
System		
Topology	Transformerless	
Max. Efficiency	99.1%	
CEC Efficiency	98.5%	
Stand-by / Night Consumption	<4W	
Environment		
Enclosure Protection Degree	NEMA Type 4X	
Cooling Method	Variable speed cooling fans	
Operating Temperature Range	-22°F to +140°F / -30°C to +60°C (derating from +113°F / +45°C)	
Non-Operating Temperature Range[5]	-40°F to +158°F / -40°C to +70°C maximum	
Operating Humidity	0-100%	
Operating Altitude	8202ft / 2500m (no derating)	
Audible Noise	<65dBA@1m and 25°C	
Display and Communication		
User Interface and Display	LED Indicators, WiFi + APP	
Inverter Monitoring	Modbus RS485	
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)	
Modbus Data Mapping	SunSpec/CPS	
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)	
Mechanical		
Dimensions (WxHxD)	45.28x24.25x9.84in (1150x616x250mm) with Standard Wire-box 39.37x24.25x9.84in (1000x616x250mm) with Centralized Wire-box	
Weight	Inverter: 121lbs / 55kg; Wire-box: 55lbs / 25kg (Standard Wire-box); 33lbs / 15kg (Centralized Wire-box)	
Mounting / Installation Angle	15 - 90 degrees from horizontal (vertical or angled)	
AC Termination	M10 Stud Type Terminal Block [3Φ] (Wire range: 1/0AWG - 500kcmil CU/AL, Lugs not supplied) Screw Clamp Terminal Block [N] (#12 - 1/0AWG CU/AL)	
DC Termination	Screw Clamp Fuse Holder (Wire range: #12 - #6AWG CU) - Standard Wire-box Busbar, M8 PEMserts (Wire range: #1AWG - 250kcmil CU/AL, Lugs not supplied) - Centralized Wire-box	
Fused String Inputs	15A or 20A fuses provided (Determined by product SKU)	
Safety		
Safety and EMC Standard	UL1741-SA-2016, CSA-C22.2 NO.107.1-01, IEEE1547a-2014; FCC PART15	
Selectable Grid Standard	IEEE 1547a-2014, CA Rule 21, ISO-NE	
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt	
Warranty		
Standard[6]	5 years	
Extended Terms	10, 15 and 20 years	

1) See user manual for further information regarding MPPT Voltage Range when operating at non-unity PF
2) "Max. AC Apparent Power" rating valid within MPPT voltage range and temperature range of -30°C to +40°C (-22°F to +104°F) for 100KW PF ≥0.9 and 125KW PF ≥0.95
3) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
4) Wye neutral-grounded, Delta may not be corner-grounded.
5) See user manual for further requirements regarding non-operating conditions.
6) 5 year warranty effective for units purchased after October 1st, 2019.

Three-phase pad-mounted compartmental type transformer

General

At Eaton, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 46 kV, Eaton has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Eaton does it all. Eaton's Cooper Power series transformers are available with electrical grade mineral oil or Envirotemp™ FR3™ fluid, a less-flammable and bio-degradable fluid. Electrical codes recognize the advantages of using Envirotemp™ FR3™ fluid both indoors and outdoors for fire sensitive applications. The bio-based fluid meets Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.

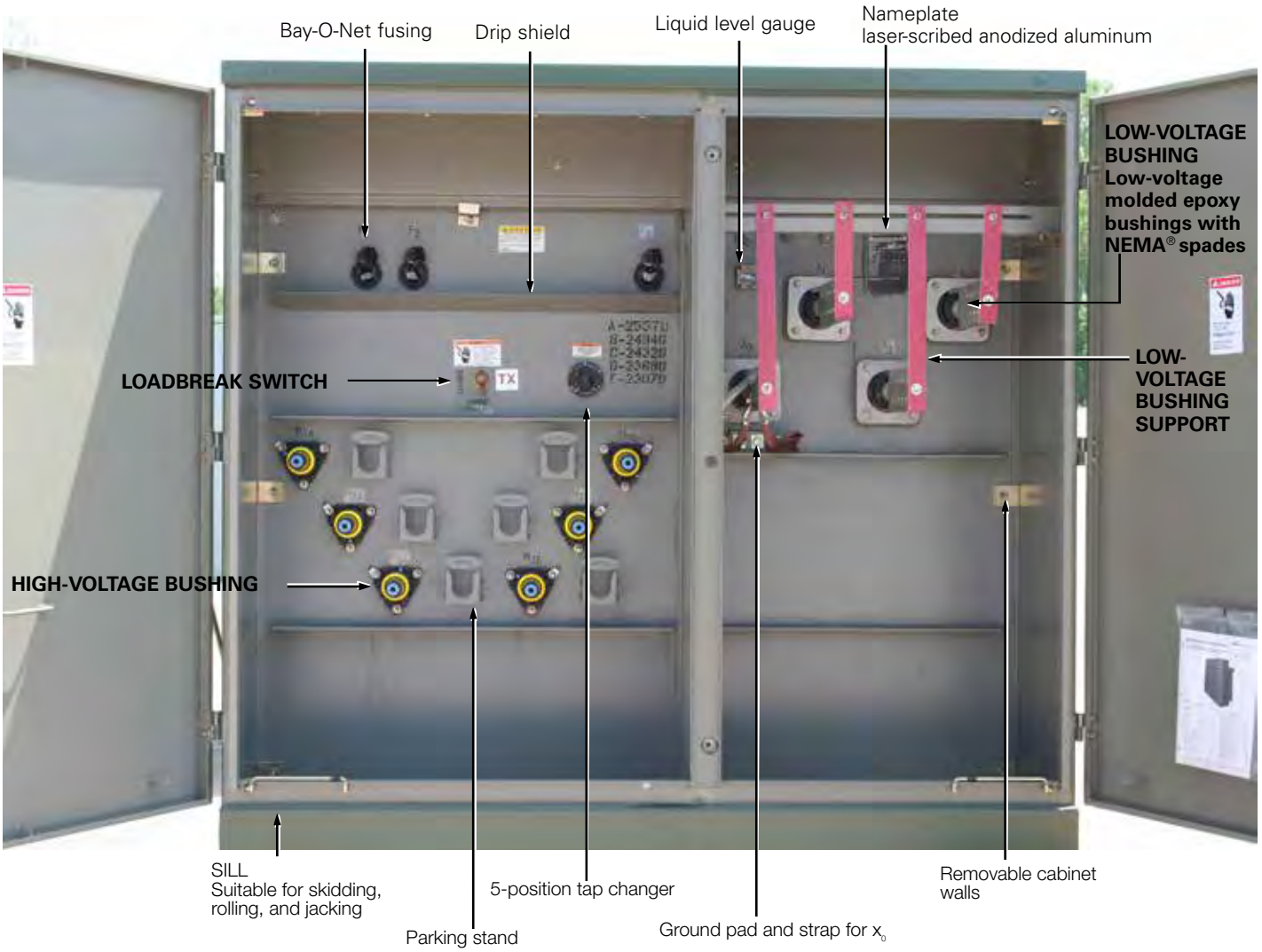


Figure 1. Three-phase pad-mounted compartmental type transformer.

Table 1. Product Scope

Type	Three Phase, 50 or 60 Hz, 65 °C Rise (55 °C, 55/65 °C), 65/75 °C, 75 °C
Fluid Type	Mineral oil or Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-High-Low), 3-winding (Low-Low-High)
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Vacuum Fault Interrupter (VFI)
	UL® Listed & Labeled and Classified
	Factory Mutual (FM) Approved®
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)
	Hardened Data Center

Table 2. Three-Phase Ratings

Three-Phase 50 or 60 Hz
kVA Available[1]:
45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

[1]Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.

Table 3. Impedance Voltage

	Low-voltage rating		
Rating (kVA)	**≤ 600 V**	**2400 Δ through 4800 Δ**	**6900 Δ through 13800GY/7970 or 13800 Δ**
45-75	2.70-5.75	2.70-5.75	2.70-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000		6.00	6.50

Note: The standard tolerance is ± 7.5%

Table 4. Audible Sound Levels

	NEMA® TR-1 Average
Self-Cooled, Two Winding kVA Rating	**Decibels (dB)**
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

KV Class	Induced Test 180 or 400 Hz 7200 Cycle	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2	Twice Rated Voltage	30	10
2.5		45	15
5		60	19
8.7		75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

	Standard	Optional
Unit Rating (Temperature Rise Winding)	65 °C	55 °C, 55/65 °C, 75 °C
Ambient Temperature Max	40 °C	50 °C
Ambient Temperature 24 Hour Average	30 °C	40 °C
Temperature Rise Hotspot	80 °C	65 °C

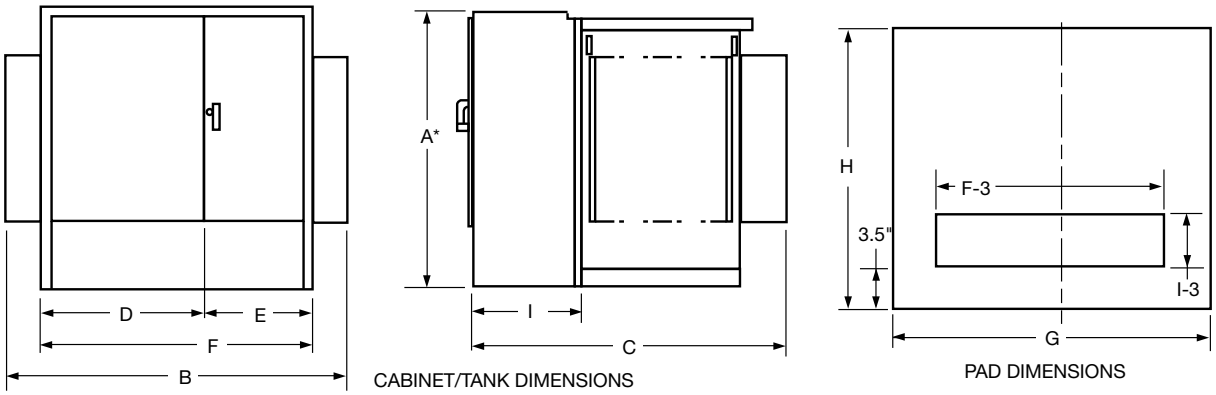


Figure 2. Transformer and pad dimensions.

* Add 9" for Bay-O-Net fusing.

Table 7. Fluid-filled—aluminum windings 55/65 °C Rise[1]

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—ALUMINUM WINDINGS										
	OUTLINE DIMENSIONS (in.)									Gallons of Fluid	Approx. Total Weight (lbs.)
kVA Rating	A*	B	C	D	E	F	G	H	I		
45	50	68	39	42	26	68	72	43	20	110	2,100
75	50	68	39	42	26	68	72	43	20	115	2,250
112.5	50	68	49	42	26	68	72	53	20	120	2,350
150	50	68	49	42	26	68	72	53	20	125	2,700
225	50	72	51	42	30	72	76	55	20	140	3,150
300	50	72	51	42	30	72	76	55	20	160	3,650
500	50	89	53	42	30	72	93	57	20	190	4,650
750	64	89	57	42	30	72	93	61	20	270	6,500
1000	64	89	59	42	30	72	93	63	20	350	8,200
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	490	12,500
2500	73	72	99	42	30	72	76	103	24	530	14,500
3000	73	84	99	46	37	84	88	103	24	620	16,700
3750	84	85	108	47	38	85	88	112	24	660	19,300
5000	84	96	108	48	48	96	100	112	24	930	25,000
7500	94	102	122	54	48	102	100	126	24	1,580	41,900

1 Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

Table 8. Fluid-Filled—Copper Windings 55/65 °C Rise[1]

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—COPPER WINDINGS										
	OUTLINE DIMENSIONS (in.)									Gallons of Fluid	Approx. Total Weight (lbs.)
kVA Rating	A*	B	C	D	E	F	G	H	I		
45	50	64	39	34	30	64	69	43	20	110	2,100
75	50	64	39	34	30	64	69	43	20	115	2,350
112.5	50	64	49	34	30	64	69	53	20	115	2,500
150	50	64	49	34	30	64	69	53	20	120	2,700
225	50	64	51	34	30	64	73	55	20	140	3,250
300	50	64	51	34	30	64	75	55	20	160	3,800
500	50	81	53	34	30	64	85	57	20	200	4,800
750	64	89	57	42	30	72	93	61	20	255	6,500
1000	64	89	59	42	30	72	93	63	20	300	7,800
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	420	11,600
2500	73	72	99	42	30	72	76	103	24	500	14,000
3000	73	84	99	46	37	84	88	103	24	720	18,700
3750	84	85	108	47	38	85	88	112	24	800	20,500
5000	84	96	108	48	48	96	100	112	24	850	25,000
7500	94	102	122	54	48	102	100	126	24	1,620	46,900

[1] Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.