SCOPE OF WORK:

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 15, PAPER BIRCH WAY, FUQUAY VARINA, NC 27526 THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.

THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES

EQUIPMENT SUMMARY	SYSTEM RATING
26 LONGI SOLAR LR5-54HABB-400M MODULES	10.400 KWDC
13 DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V) MICROINVERTERS	9.048 KWAC

GENERAL NOTES:

- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- ARCHITECT HAS NOT BEEN RETAINED TO SUPERVISE ANY CONSTRUCTION OR INSTALLATION OF ANY EQUIPMENT AT SITE.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- NO CHANGES ARE TO BE MADE WITHOUT THE CONSULTATION AND APPROVAL OF THE ARCHITECT.
- CONTRACTOR SHALL OBTAIN BULDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE NC BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
- IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
- ALL EXPOSED PLUMBING, HVAC, ELECTRICAL DUCTWORK, PIPING AND CONDUITS ARE TO BE PAINTED BY GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
- CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

ELECTRICAL NOTES:

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING (UFO) FASTENER TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE (UFO) FASTENER MANUFACTURE'S INSTRUCTION.

GOVERNING CODES

2018 INTERNATIONAL FIRE CODE 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL RESIDENTIAL CODE 2018 NORTH CAROLINA STATE BUILDING CODE 2017 NATIONAL ELECTRICAL CODE

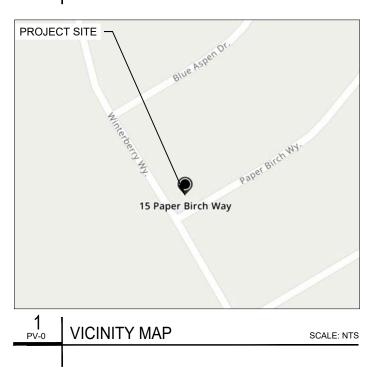
AUTHORITY HAVING JURISDICTION (AHJ) : HARNETT COUNTY

SHEET INDEX						
PV-0	COVER PAGE					
PV-1	SITE PLAN					
PV-2	ROOF PLAN & MODULES					
PV-3	ATTACHMENT DETAIL					
PV-4	ELECTRICAL LINE DIAGRAM & CALCS.					
PV-5	ELECTRICAL PHOTOS					
PV-6	SPECIFICATIONS & CALCS.					
PV-7	LABLE & PLACARDS					
PV-8+	EQUIPMENT SPECIFICATIONS					

WIRING AND CONDUIT NOTES:

- ALL CONDUIT SIZES AND TYPES, SHALL BE LISTED FOR ITS
 PURPOSE AND APPROVED FOR THE SITE APPLICATIONS.
- ALL PV CABLES AND HOME RUN WIRES BE #10AWG *USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO SOURCE CIRCUIT COMBINER BOXES AS REQUIRED.
- ALL CONDUCTORS AND OCPD SIZES AND TYPES SPECIFIED ACCORDING TO [NEC 690.8 (A)(1) & (B)(1)], [NEC 240] [NEC 690.7] FOR MULTIPLE CONDUCTORS.
- ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO [NEC TABLE 310.15 (B)(2)(C)] BLACK ONLY**
- EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES.
- PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UV RESISTANT, RATED FOR 600V PER NEC 2008 OR 1000V PER NEC 2011.
- 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS.
- ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION.
- VOLTAGE DROP LIMITED TO 2%
- AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK, PHASE B OR L2- RED, PHASE C OR L3- BLUE, NEUTRAL- WHITE/GRAY.



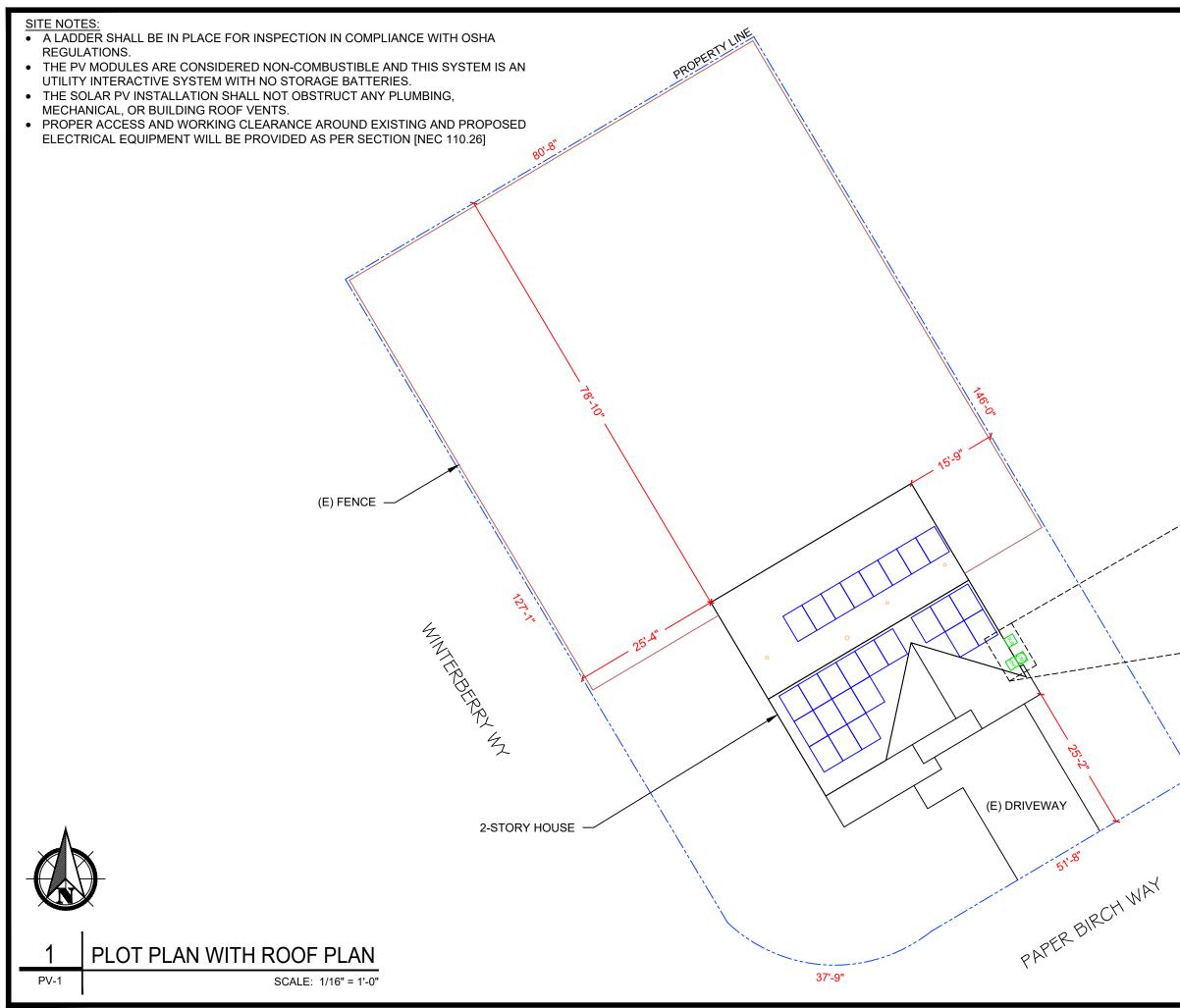


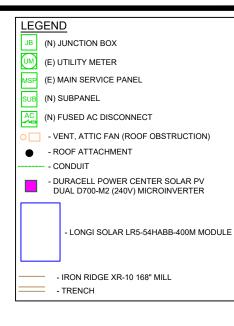
HOUSE PHOTO

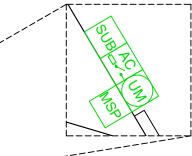
PV-0

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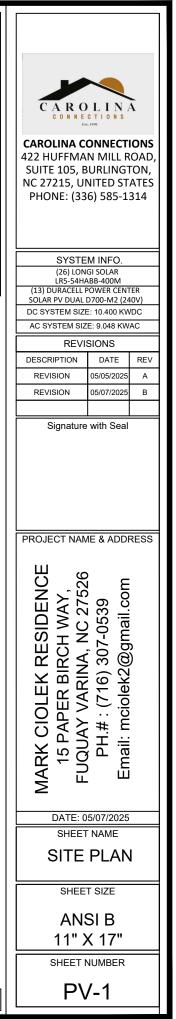
CAROLINA CONNECTIONS CONNECTIONS CAROLINA CONNECTI 422 HUFFMAN MILL R SUITE 105, BURLINGT NC 27215, UNITED ST PHONE: (336) 585-1.	IONS OAD, FON, ATES					
SYSTEM INFO. (26) LONGI SOLAR LR5-54HABB-400M						
(13) DURACELL POWER CENT SOLAR PV DUAL D700-M2 (24						
DC SYSTEM SIZE: 10.400 KW	/DC					
AC SYSTEM SIZE: 9.048 KW	AC					
REVISIONS DESCRIPTION DATE	REV					
REVISION 05/05/2025	A					
REVISION 05/07/2025	В					
MARK CIOLEK RESIDENCE 15 PAPER BIRCH WAY, FUQUAY VARINA, NC 27526 PH.# : (716) 307-0539 Email: mciolek2@amail.com						
SHEET NAME						
SHEET SIZE	-					
ANSI B 11" X 17"						
SHEET NUMBER						
PV-0						



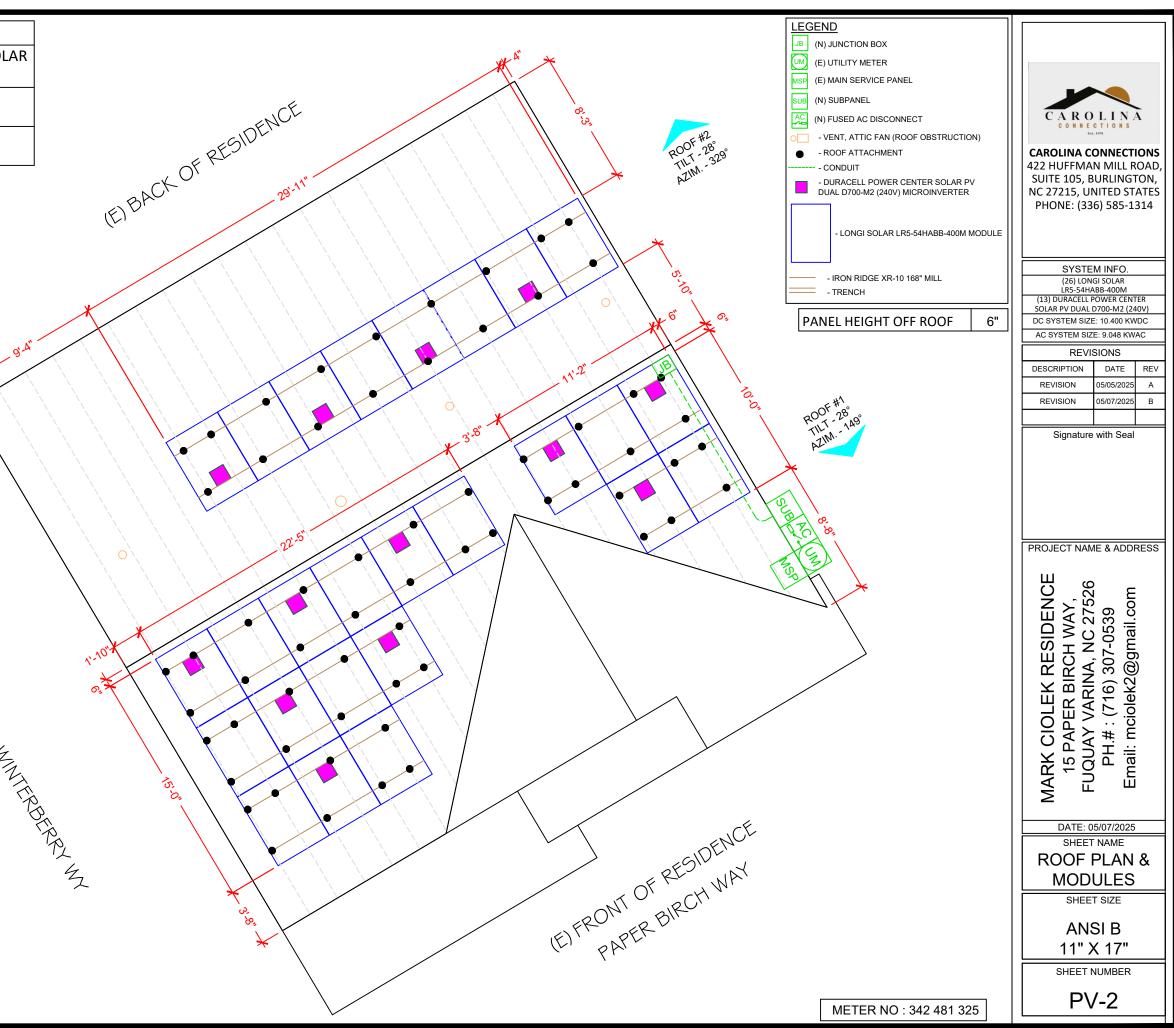




METER NO : 342 481 325



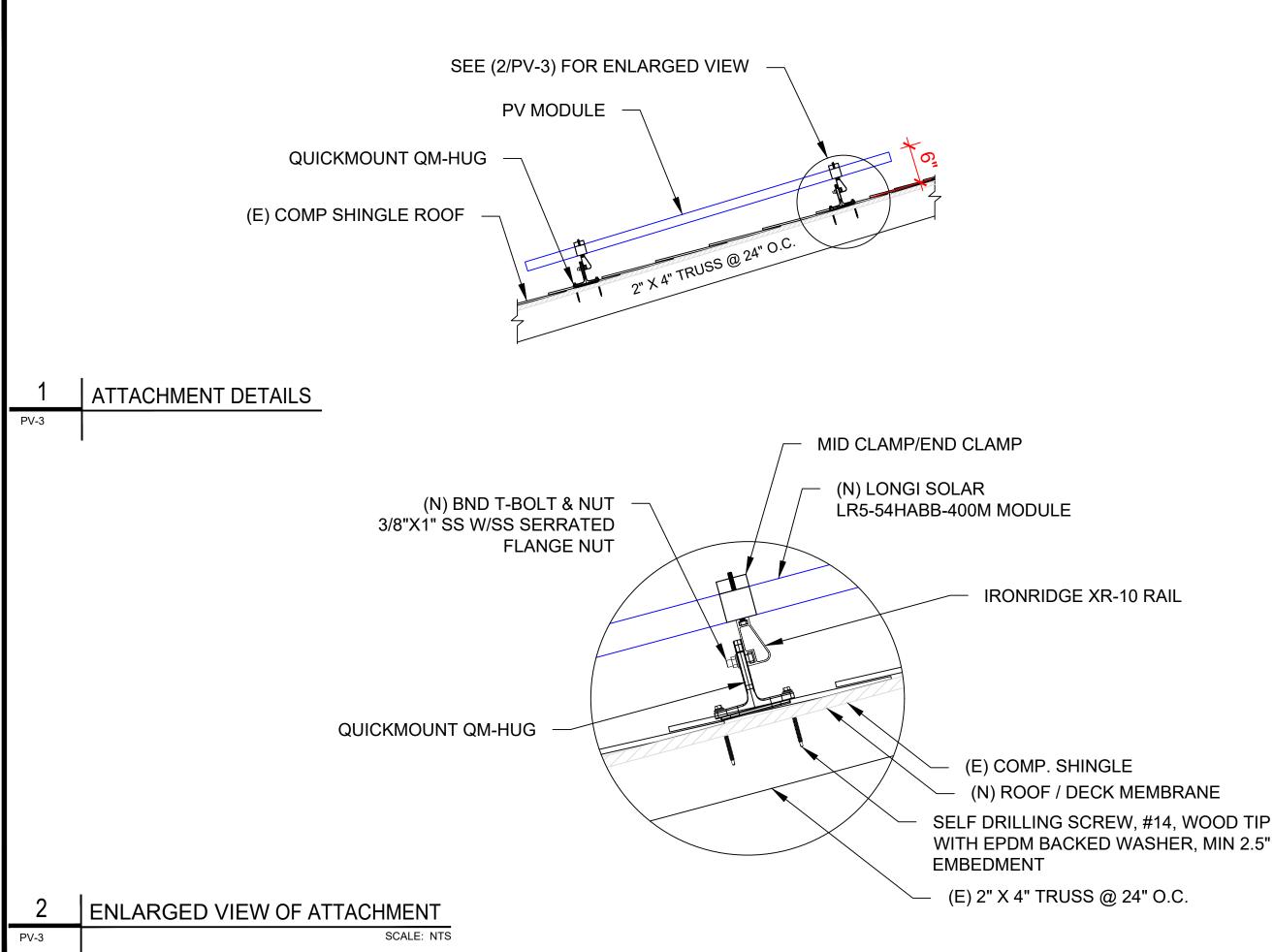
			INVER	TER	SPEC	IFICATIONS		
						ACELL POWER UAL D700-M2		
MAX		HORT	CIRCU	IT	11.5	A		
	TINUC	DUS OL	JTPUT		2.9A	(240V)		
								1
						WEIGHT		17
NUMB	SER OF	MODUI	.ES:	26 1	/ODUL	5		(E
MODU	JLE TYF	PE:			IGI SOI -54HAE	LAR 3B-400M		
MODU	JLE WE	EIGHT:		49.6	60 LBS/	22.5 KG		
MODU	JLE DIN	MENSIO	NS:	67.8	80" x 44	l.65" = 21.02SF		X
UNIT V	NEIGH	T OF AR	RAY:	2.36	9 PSF]	\nearrow
ļ	ARRA	Y ARE	A & R(DOF	AREA	A CALC'S	9-4	
F	ROOF		# OF M	DUL	ES	ARRAY AREA (Sq. Ft.)	*	
	#1		1	8		336.14		
(τοται	#2	AREA/TO		· · · · · · · · · · · · · · · · · · ·		149.21		
		2) X 100%				100 /0		
		DESI	GN SPE		ΔΤΙΟΝ	1	j 🔪	
RISK C	ATEGO					•		
CONST				SFI	D			
ZONIN	IG:			RES	SIDENT	IAL		
SNOW	LOAD	(ASCE 7	/-10):	15	PSF			
EXPOS	URE C	ATEGOF	Y:	В				
WIND	SPEED	(ASCE 7	/-10):	116	5 MPH			
		ROC	F DES		PTION	N		
ROOF	ROOF	AZIMUT	TRUS	S .	TRUSS			1-10"*
#1	TILT 28°	149°	2" X 4	! " 2	PACING 24" O.C.	COMP. SHINGLE		e 关
#2	28°	329°	2" X 4	 " 2	24" O.C.	COMP. SHINGLE]	°,
							1.	
							MIN	BERRE
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	L							4
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PV-2

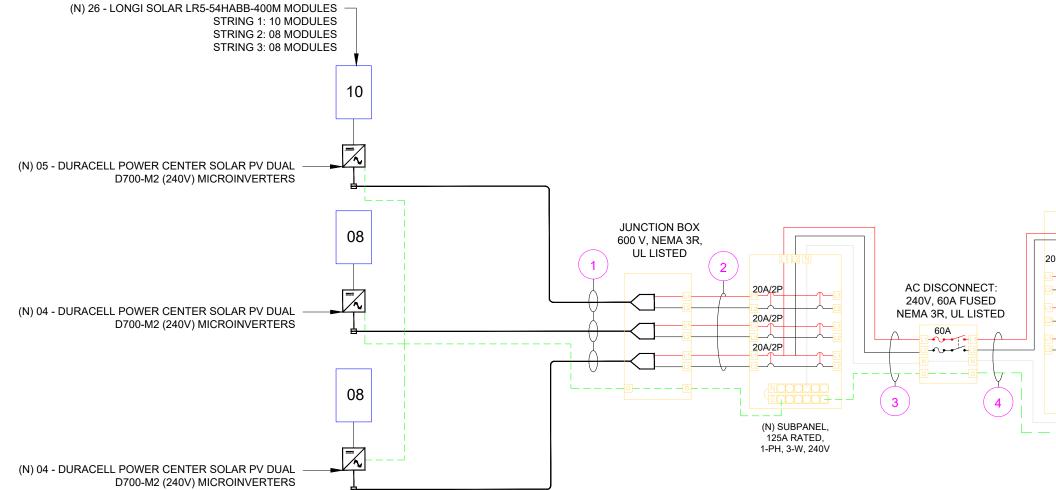
ROOF PLAN & MODULES

SCALE: 1/6" = 1'-0"



CAROLINA CONNECTIONS CAROLINA CONNECTIONS 422 HUFFMAN MILL ROAD, SUITE 105, BURLINGTON, NC 27215, UNITED STATES PHONE: (336) 585-1314
SYSTEM INFO.
(26) LONGI SOLAR LR5-54HABB-400M
(13) DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V)
DC SYSTEM SIZE: 10.400 KWDC
AC SYSTEM SIZE: 9.048 KWAC
REVISIONS
DESCRIPTION DATE REV
REVISION 05/05/2025 A
REVISION 05/07/2025 B
MARK CIOLEK RESIDENCE 15 PAPER BIRCH WAY, FUQUAY VARINA, NC 27526 PH.# : (716) 307-0539 Email: mciolek2@gmail.com
TS PARK C 15 PA FUQUA PH.i Email: 1
SHEET NAME
ATTACHMENT DETAIL
SHEET SIZE
ANSI B
11" X 17"
11" X 17" SHEET NUMBER РV-3

ID TYPICAL INITIAL CONDUCTOR	FINAL CONDUCTOR LOCATION		CONDUCTO	R	CONDUIT	PARALLEL	CURRENT-CARRYING CONDUCTORS IN	CONDUIT FILL PERCENT	OCPD		EGC		. CORR. CTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP.	LENGTH	VOLTAGE DROP	
1 3 ARRAY	JUNCTION BOX	10 AWG	AC CABLE	_		CIRCUITS	CONDUIT 2	N/A	N/A	6 AWG	BARE	0.71	(56°C)	N/A	14.50A	18.13A	N/A	N/A	RATING 90°C	44FT	0.66%	
2 1 JUNCTION BOX	SUBPANEL			COPPER	- MIN 0.75" Dia	3	6	26.72%	20A	10 AWG	COPPER THWN-2,	0.96	(34°C)	0.8	14.50A	18.13A	40A	30.7A	75°C	32FT	0.50%	
3 1 SUBPANEL	FUSED AC		THWN-2	COPPER	MIN 0.75" Dia	1	3	31.21%	60A	10 AWG	COPPER THWN-2,	0.96	(34°C)	1	37.70A	47.13A	75A	72.0A	75°C	5FT	0.08%	CAROLINA CONNECTIONS
4 1 FUSED AC	DISCONNECT MAIN SERVICE PANEL		THWN-2	COPPER	MIN 0.75" Dia	1	3	31.21%	N/A	10 AWG	COPPER THWN-2,	0.96	(34°C)	1	37.70A	47.13A	75A	72.0A	75°C	5FT	0.08%	CAROLINA CONNECTIONS
⁴ DISCONNECT											COPPER		<u> </u>					<u> </u>			<u> </u>	422 HUFFMAN MILL ROAD, SUITE 105, BURLINGTON, NC 27215, UNITED STATES PHONE: (336) 585-1314
	(N) 26 - LONGI SOL/	5	STRING 1: STRING 2:	00M MODU : 10 MODU : 08 MODU : 08 MODU	LES LES																	SYSTEM INFO. (26) LONGI SOLAR LR5-54HABB-400M (13) DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V) DC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 9.048 KWAC REVISIONS
																τοι	UTILITY GI	RID				DESCRIPTION DATE REV REVISION 05/05/2025 A
					-																	REVISION 05/07/2025 B
(N) 05 - DU	IRACELL POWER C D700-M2 (2																	I-DIRECTION		ſ		Signature with Seal
	IRACELL POWER C D700-M2 (2 JRACELL POWER C D700-M2 (2	40V) MIC	ROINVER	RTERS DUAL						EMA 3R,	(N) S 125/			240V, 60 NEMA 3R				(E) MA HOUS PANEI 1-PH, : 	CTOR	ER TO 0A/2P E		MARK CIOLEK RESIDENCE 15 PAPER BIRCH WAY, FUQUAY VARINA, NC 27526 PH.# : (716) 307-0539 Email: mciolek2@gmail.com
		[SOL	AR MOD	1					
				INVE	DURACE	CATIONS ELL POWER CI	ENTER							MANUF	ACTURER	/ MODEL		GI SOLA 54HABB				DATE: 05/07/2025 SHEET NAME
				JRER / MC ORT CIRC	DEL SOLAR P					SERVIC	E INFO			VMP			30.9	4 V				ELECTRICAL LINE
		CU	RRENT		15 A		l	JTILITY PRC	VIDER:		DUKE ENE	RGY		IMP			12.9	3 A				& CALCS.
			NTINUOL RRENT	JS OUTPL	JT 2.9A (24	10∨)		AHJ NAME:			HARNETT	COUNTY	Y	VOC			37.0	5 V				
			X CONTII TPUT PC		696W		1	AIN PANE	L BRAN	D:	SQUARE D	I		ISC			13.7					ANSI B 11" X 17"
					1		1	AIN SERVI	CE PANI	EL:	200A			_	COEFF. V			65 %/C		() • ()		SHEET NUMBER
1 ELECTRIC	AL LINE DI							AIN PANE			NORTH EA				E DIMENS			0" (L) x 4	44.65"	(W)		PV-4
PV-4		SCALE:	1112					SERVICE FEE	D SOUR	RCE:	UNDERGRO	UND		PANEL	WATTAGE		400\	N				



	INVERTER	SPECIFICATIONS			
		DURACELL POWER CENTER			MANUFACTURER / MODEL
	MANUFACTURER / MODEL	SOLAR PV DUAL D700-M2 (240V)	SERVI	CE INFO	VMP
	MAX DC SHORT CIRCUIT CURRENT	15 A	UTILITY PROVIDER:	DUKE ENERGY	IMP
	CONTINUOUS OUTPUT CURRENT	2.9A (240V)	AHJ NAME:	HARNETT COUNTY	VOC
	MAX CONTINUOUS OUTPUT POWER	696W	MAIN PANEL BRAND:	SQUARE D	ISC
	CON OTTOWER	<u> </u>	MAIN SERVICE PANEL:	200A	TEMP. COEFF. VOC
AL LINE DIAG	GRAM		MAIN PANEL LOCATION:	NORTH EAST	MODULE DIMENSION
SC	ALE: NTS		SERVICE FEED SOURCE:	UNDERGROUND	PANEL WATTAGE



C A R O C O NH NE C CAROLINA CO 422 HUFFMAI SUITE 105, BI NC 27215, UN PHONE: (336	DNNECT N MILL R URLINGT	I ONS OAD, TON, ATES
SYSTER (26) LONG		
LR5-54HA (13) DURACELL P	BB-400M	FR
SOLAR PV DUAL D	0700-M2 (24	10V)
DC SYSTEM SIZE		
REVIS		
DESCRIPTION	DATE	REV
	05/05/2025	A
	05/07/2025	В
2	PH.# : (716) 307-0539 Email: mciolek2@amail.com	
DATE: 05 SHEET	5/07/2025	
ELECT		
PHO		
SHEET	SIZE	
ANS		
11" X		
SHEET N		
PV	′-5	

SOLAR MODULE SPECIFICATIONS						
MANUFACTURER / MODEL	LONGI SOLAR LR5-54HABB-400M					
VMP	30.94					
IMP	12.93					
VOC	37.05					
ISC	13.72	A				
TEMP. COEFF. VOC	-0.265	5 %/C				
MODULE DIMENSION	67.80'	' (L) x 44.65"	(W)			
PANEL WATTAGE	400W					
INVERTER						
	DURA	CELL POWER	CENTER SOLAR			
MANUFACTURER / MODEL	PV DU	AL D700-M2	(240V)			
MAX DC SHORT CIRCUIT CURRENT	15A	15A				
CONTINUOUS OUTPUT CURRENT	2.9A (2.9A (240V)				
AMBIENT TE	MPER/	ATURE SPECS	5			
RECORD LOW TEMP		-12°C				
AMBIENT TEMP (HIGH TEMI	P 2%)		34°C			
CONDUIT HEIGHT			7/8"			
ROOF TOP TEMP			90°C			
CONDUCTOR TEMPERATUR	E RATE	56°C				
MODULE TEMPERATURE CO	EFFICIE	NT OF VOC	-0.265 %/C			
PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT					
0.80		4-6				
0.70		7-9				
0.50		10-20				

Voltage rise from the Microinverters to the Junction Box

For branch circuit #1 of 05 D700-M2 Micros, the voltage rise on the 240 VAC AC Cable is 0.66% For branch circuit #2 of 04 D700-M2 Micros, the voltage rise on the 240 VAC AC Cable is 0.47% For branch circuit #3 of 04 D700-M2 Micros, the voltage rise on the 240 VAC AC Cable is 0.35%

Voltage rise from the Junction Box to the Subpanel

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft) × (2-way wire length in ft)

= $(2.9 \text{ amp} \times 5) \times (0.00129 \Omega/\text{ft}) \times (32 \text{ ft} \times 2)$

= 14.50 amps × $0.00129 \Omega/ft \times 64 ft$

= 1.20 volts

%VRise = 1.20 volts ÷ 240 volts = 0.50%

The voltage rise from the Junction Box to the Subpanel is 0.50%

Voltage rise from the Subpanel to Fused AC Disconnect

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft .) × (2-way wire length in ft.)

= $(2.9 \text{ amp} \times 13) \times (0.000491 \Omega/\text{ft}) \times (5 \text{ ft.} \times 2)$

= 37.70 amps × 0.000491 $\Omega/ft \times 10$ ft.

= 0.19 volts

%VRise = 0.19 volts ÷ 240 volts = 0.08%

The voltage rise from the Subpanel to the Fused AC Disconnect is 0.08%

Voltage rise from the Fused AC Disconnect to Main Service Panel

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft .) × (2-way wire length in ft.)

= $(2.9 \text{ amp} \times 13) \times (0.000491 \Omega/\text{ft}) \times (5 \text{ ft.} \times 2)$

= 37.70 amps × 0.000491 Ω/ft × 10 ft.

= 0.19 volts

%VRise = 0.19 volts ÷ 240 volts = 0.08%

The voltage rise from the Fused AC Disconnect to the Main Service Panel is 0.08%

Total system voltage rise for all wire sections

0.66% + 0.50% + 0.08% + 0.08% = 1.32%

CAROLINA CAROLINA CONNECTIONS 422 HUFFMAN MILL ROAD, SUITE 105, BURLINGTON, NC 27215, UNITED STATES PHONE: (336) 585-1314								
SYSTE	M INFO.							
	GI SOLAR ABB-400M							
(13) DURACELL F SOLAR PV DUAL	POWER CENT							
DC SYSTEM SIZE								
AC SYSTEM SIZ	E: 9.048 KW	AC						
REVI	SIONS							
DESCRIPTION	DATE	REV						
REVISION	05/05/2025	А						
REVISION	05/07/2025	В						
L								
Щ Ш Ц								
DATE: 05/07/2025								
SPECIFICATIONS & CALC.								
SHEE	T SIZE	=						
	K 17"							
	NUMBER /-6							

WARNING ELECTRIC SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION: MAIN SERVICE PANEL/AC DISCONNECT/AC COMBINER (PER CODE: NEC 2017 690.13(B))

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION: DC CONDUIT EVERY 10' AND ON CONDUIT BODIES WHEN EXPOSED (PER CODE: NEC2017 690.31(G)(3)(4))

4

2

1

PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT 37.70 AMPS NOMINAL OPERATING AC VOLTAGE 240 VOLTS

LABEL LOCATION: MAIN SERVICE PANEL/AC DISCONNECT NEC2017. 690.53



LABEL LOCATION: INVERTER

AT OR WITHIN 3' OF THE AC/DC COMBINER SWITCH PER CODE: NEC 690.58(C)(3)



DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION: MAIN SERVICE PANEL/AC DISCONNECT/AC COMBINER/REVENUE METER 2017 NEC 705.12(B)(3)

ADHESIVE FASTENED SIGNS

ANSI Z535.4-2011 PRODUCT SAFETY SIGNS AND LABELS, PROVIDES GUIDELINES FOR SUITABLE FONT SIZES, WORDS,

- COLORS, SYMBOLS, AND LOCATION REQUIREMENTS FOR LABELS. NEC 110.21(B)(1).
- THE LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. NEC 110.21(B)(3).

ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT.

6

7



SOLAR PV SYSTEM EQUIPPED

MAIN SERVICE PANEL IF MSD IS OUTSIDE PLACE IT THERE / IF MSD IS INSIDE PLACE ON THE AC DISCONNECT PER CODE: NEC 690.56(C)(1)

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

LABEL LOCATION: AC DISCONNECT 2017 NEC 690.56(C)(3) 8

LABEL LOCATION: AC DISCONNECT 2017 NEC 230.66

CAUTION

WINTERBERRY WY PAPER BIRCH WAY (E) MAIN SERVICE PANEL -L (N) SUBPANEL └ (N) FUSED AC DISCONNECT

(E) UTILITY METER

SERVICE DISCONNECT

SECTIONNEUR PRINCIPALE

SERVICIO DE DESCONEXION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN:

CAROLIN CONNECTION CON	TIONS ROAD, GTON, GTATES				
SYSTEM INFO (26) LONGI SOLAR					
LR5-54HABB-400M	NITES				
(13) DURACELL POWER CE SOLAR PV DUAL D700-M2					
DC SYSTEM SIZE: 10.400 F					
AC SYSTEM SIZE: 9.048 K	WAC				
REVISIONS					
DESCRIPTION DATE	REV				
REVISION 05/05/202	25 A				
REVISION 05/07/202	-				
MARK CIOLEK RESIDENCE 15 PAPER BIRCH WAY, FUQUAY VARINA, NC 27526 PH.# : (716) 307-0539 Email: mciolek2@gmail.com					
SHEET NAME					
SHEET NAME SIGNAGE					
	-				
SHEET SIZE	-				

Hi-MO 5

LR5-54HABB 390~415M

- Suitable for distributed projects
- Advanced module technology delivers superior module efficiency •M10 Gallium-doped Wafer •Integrated Segmented Ribbons •9-busbar Half-cut Cell
- Globally validated bifacial energy yield
- High module quality ensures long-term reliability



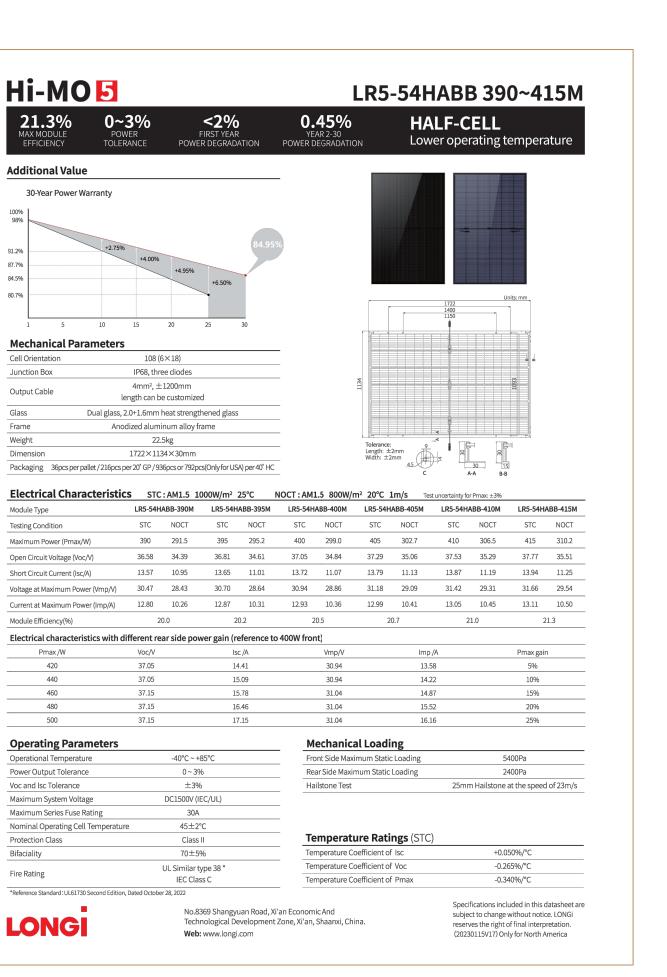
30

30-year Warranty for Extra Linear Power Output

Complete System and **Product Certifications**

IEC 61215, IEC 61730, UL 61730 I\$O9001:2015: ISO Quality Management System ISO14001: 2015: ISO Environment Management System ISO45001: 2018: Occupational Health and Safety IEC62941: Guideline for module design qualification and type approval

LONG



Electrical Characteristics	STC	:AM1.5 1	000W/m² 2	25°C	NOCT: AM1	.5 800W/	m² 20°C 1	l m/s ⊤
Module Type	LR5-54H	ABB-390M	LR5-54H	ABB-395M	LR5-54H/	BB-400M	LR5-54H	ABB-405M
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	390	291.5	395	295.2	400	299.0	405	302.7
Open Circuit Voltage (Voc/V)	36.58	34.39	36.81	34.61	37.05	34.84	37.29	35.06
Short Circuit Current (Isc/A)	13.57	10.95	13.65	11.01	13.72	11.07	13.79	11.13
Voltage at Maximum Power (Vmp/V)	30.47	28.43	30.70	28.64	30.94	28.86	31.18	29.09
Current at Maximum Power (Imp/A)	12.80	10.26	12.87	10.31	12.93	10.36	12.99	10.41
Module Efficiency(%)	2	0.0	20).2	20	0.5	2	0.7
Electrical characteristics with dif	ferent re	ar side pov	wer gain (re	eference	to 400W fron	t)		
Pmax /W	Voc/V		lso	: /A		Vmp/V		Im
420	37.05		14	.41		30.94		13
	27.05		10	00		20.04		1.4

Power Output Tolerance	0~	3%	Rear Side Maximum Sta	atic Loading
Operational Temperature	-40°C ~	· +85℃	Front Side Maximum St	atic Loading
Operating Parameter	s		Mechanical Loa	ding
500	37.15	17.15	31.04	16
480	37.15	16.46	31.04	15
460	37.15	15.78	31.04	14
440	37.05	15.09	30.94	14

romer output roterarioe	0 070	
Voc and Isc Tolerance	±3%	Hailstone Test
Maximum System Voltage	DC1500V (IEC/UL)	
Maximum Series Fuse Rating	30A	
Nominal Operating Cell Temperature	45±2°C	
Protection Class	Class II	Temperature Rating
Bifaciality	70±5%	Temperature Coefficient of Is
	UL Similar type 38 *	Temperature Coefficient of Ve
Fire Rating	IEC Class C	Temperature Coefficient of P
*Deference Standard 111 61730 Second Edition Dated	Osteher 28, 2022	

LONGI

21.3% MAX MODULE EFFICIENCY

100%

989

91.2%

87.7%

84.5%

80.79

Cell Orientation

Junction Box

Output Cable

Glass

Frame

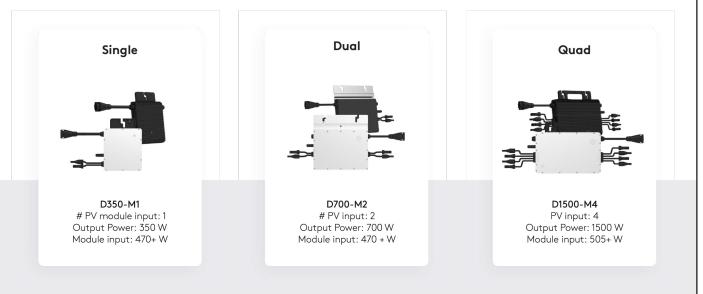
Weight

Dimension

CAROLINA CONNECTIONS 422 HUFFMAN MILL ROAD, SUITE 105, BURLINGTON, NC 27215, UNITED STATES PHONE: (336) 585-1314 SYSTEM INFO.					
	ABB-400M				
(13) DURACELL F SOLAR PV DUAL	D700-M2 (24	10V)			
DC SYSTEM SIZE AC SYSTEM SIZE					
	SIONS				
DESCRIPTION	DATE	REV			
REVISION	05/05/2025	A			
REVISION	05/07/2025	В			
0:	with Seal				
MARK CIOLEK RESIDENCE 41 15 PAPER BIRCH WAY, 72526 Weild Stream	PH.# : (716) 307-0539				
DATE: 0	5/07/2025				
SHEET	NAME				
SPECIF	EQUIPMENT SPECIFICATION SHEET SIZE				
SHEE	T SIZE				
ANSI B 11" X 17"					
	/-8				

DURACELL' HOME ECOSYSTEM

Microinverters



Duracell Home Ecosystem microinverters support fast, easy, and flexible installation with the highest power output yield per PV module.

AC trunk cable format allows any combination of single, dual, and quad microinverters to optimize even the most complex rooftop installations, up to 16 modules per branch.

Fast and efficient commissioning process can be completed remotely. Simple termination to standard junction box, main panel, or sub panel. No specialized combiner box required.

Compliant with U.S. NEC-2017 & NEC-2020 690.12 rapid shutdown and CA Rule 21. High reliability with NEMA 6 enclosure, 6000V surge protection



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DL

PHONE: (3: Durber (DC) Imper (Drights) Imper (Drights) <thi< th=""><th>Microinverters</th><th></th><th></th><th>Technical Data PV Microinverters 700-M2/D1500-M4</th></thi<>	Microinverters			Technical Data PV Microinverters 700-M2/D1500-M4
Unber of PV inputs 1 2 4 Incluine or PV inputs 1 2 4 Incluine or PV inputs 1 2 4 Incluine or PV inputs 16:60 300 to 505+ Incluine or PV inputs 16:60 300 to 505+ Incluine or PV inputs 12 4 Incluine or PV inputs 12 4 Incluine or PV inputs 16:60 300 to 505+ Incluine or PV inputs 12 300 to 505+ Incluine or PV inputs 12 4 Incluine or PV inputs 12 4 Incluine or PV inputs 13 1 24 Incluine or PV inputs 13 1 24 Incluine or PV inputs 141 15 1 24 Incluine or PV inputs 142 28 33 5.99 5.99 Incluine or PV inputs 16 14 7 4 4 Incluine or PV inputs 16 14 7 4 4 Incluine or	lodel	D350-M1	D700-M2	D1500-M4
Incluing power range, typical (W) 280 to 470+ 280 to 470+ 300 to 505+ tackimum input voltage (V) 6-60 FPV voltage range (V) 222 Information input voltage (V) 222 Information input voltage (V) 222 Information input voltage (V) 222 Information input voltage (V) 2550 Information input voltage (V) 240 Voltage range (V) 240 Voltage Voltage Voltage range (V) 240 Voltage Voltage Voltage range (V) 240 Voltage Voltage Voltag	Input Data (DC)			
todimum input vertage (V) 60 EPFT voltage range (V) 16-60 tadimum input sort circuit current (A) 11.5 tadimum input short circuit current (A) 15 tadimum input short circuit current (A) 15 tadimum input short circuit current (A) 550 tadimum continuous output power (VA) 550 tadimum continuous output power (VA) 349 tadimum continuous output power (VA) 344 tadimum continuous output current (A) 14.5 tadimum continuous output current (A) 14.5 tadimum continuous output current (A) 344 tadimum continuous output current (A) 14.5 tadimum continuous output current (A) 14.5 tadimum continuous output current (A) 14.8 tadimum current (A) 14.8 7 4 tadimum units per branch2 (10 AWG) 16 14 8 7 4 tadimum units per branch2 (10 AWG) 16 14 8 7 4 tadimum units per branch2 (10 AWG) 16 14 8 7 4	Number of PV inputs	1	2	4
IPPT voltage range (V) 16-60 Vart-up voltage (V) 22 daimum input current (A) 11.5 taxi-up voltage (V) 22 daimum input current (A) 11.5 taxi-up voltage (V) 350 voltage (V) 360 voltage (V) 260 voltage (V) 50 voltage (V) 50 voltage (V) 50 volta	Module power range, typical (W)	280 to 470+		300 to 505+
IMPT voltage range (V) 22 tadimum input current (A) 11.5 tadimum input short circuit current (A) 15 voltage range (V) 15 tadimum continuous output power (VA) 550 voltage range (V) 2.2 tadimum continuous output power (VA) 550 voltage range (V) 15 tadimum continuous output current (A) 1.45 tadimum continuous output voltage (V) 240 tadimum continuous output voltage (V) 211-264 183-228 tadimum continuous output voltage (V) -50 tadimum continuous output voltage (V) -50	Maximum input voltage (V)			
toaimum input current (A) 11.5 toaimum input short circuit current (A) 15 toaimum continuous output power (VA) 340 000 1500 1350 eak output power (VA) 340 0606 1438 1246 taaimum continuous output current (A) 1.45 1.68 2.90 2.400 208 2.400 208 2.400 208 2.400 208 2.400 208 2.400 208 2.400 2.80 2.400 2.80 2.400 2.80 2.400 2.80 2.400 2.80 2	MPPT voltage range (V)			
datamum input solarity (v) 10.3 taximum input solarity (v) 15 taximum input solarity (v) 350 velk output power (VA) 350 toximum input solarity (VA) 349 toximum input solarity (VA) 349 toximum continuous output power (VA) 349 toximum continuous output power (VA) 349 toximum continuous output current (A) 1.45 toximum continuous output current (A) 1.45 toximum continuous output current (A) 1.45 toximum continuous output voltage (V) 240 208 240 208 toximum units get franch (P) 240 208 240 208 240 208 toxination fragment/rangel (V) 211-264 183-228 211-264 183-228 315 ower factor (adjustable) >0.95.7 5 5 5 5 toxination fragment/rangel (V) 16 14 8 7 4 4 fficiency (%) 96.7 5 5 5 5 5 5 5 5 5 5 5 5 5	Start-up voltage (V)			
Active Active<	Maximum input current (A)			
Butput Data (AC) Image: Constraint of the second seco	Maximum input short circuit current (A)		15	
Control (Vis) Contread (Vis) Control (Vis) Control	Output Data (AC)			
faximum continuous output power (VA) 349 696 1438 1246 faximum continuous output current (A) 1.45 1.68 2.9 3.35 5.99 forminal output voltage(V) 211-264 183-228 211-264 183-228 211-264 183-228 forminal output voltage(V) 211-264 183-228 211-264 183-228 211-264 183-228 forminal output voltage(V) 201-264 183-228 211-264 183-228 211-264 183-228 forminal infequency/rangel (Hz) -0.09 defoult (0.8 lead to 0.8 log) - - - otal hormonic distortion -3% - - - - facimum units per branch2 (10 AWG) 16 14 8 7 4 4 Weighted efficiency (%) 96.7 EC peak efficiency (%) 99.8 - <td></td> <td>350</td> <td>700</td> <td>1500 1750</td>		350	700	1500 1750
Control Control <t< td=""><td></td><td></td><td></td><td></td></t<>				
Control output voltage(V) 1.20 1.7 0.33 0.77 0				
Iominal output voltage range1 (V) 211-264 183-228 210 210 211-264 210 211-264 211 211-264 211-264 211 211-264 211 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264 211-264				
iominal frequency/range1 (Hz) 60/55-65 ower factor (adjustable) -0.99 default (0.8 lead) to 0.8 log) stal harmonic distortion -3% taximum units per branch2 (10 AWG) 16 14 8 7 4 4 fficiency (%) 60 EC peak efficiency (%) 60 EC weighted efficiency (%) 96.7 EC weighted efficiency (%) 99.8 iominal MPPT efficiency (%) 99.8 ighttime power consumption (mW) -50 techanical Data 182 x164 x29.5 250 x170 x28 280 x176 x33 Keight (kg) 1.75 2.6 3.35 nclosure rating Outdoor NEMA 6 iomunication 2.4 GHz proprietary RF (Nordic) techanical Data Viet 1 × D) mm UB2 x164 x29.5 250 x170 x 28 280 x176 x33 Keight (kg) 1.75 2.6 3.35 eetures 0 iomunication 2.4 GHz proprietary RF (Nordic) tommunication 2.4 GHz proprietary RF (Nordic) tompliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 158, FCC Part 15C VRapid Shutdown of PV Systems				
ower factor (adjustable) >0.99 default (0.8 lead to 0.8 log) total harmonic distortion <3% taximum units per branch2 (10 AWG) 16 14 8 7 4 4 fficiency EC peak efficiency (%) 96.7 EC weighted efficiency (%) 99.8 tominal MPPT efficiency (%) 99.8 tighttime power consumption (mW) <50 techanical Data mblent temperature range (°C) -40 to +65 timensions (W × H × D) mm 182 x 164 x 29.5 250 x 170 x 28 280 x 176 x 33 feight (kg) 1.75 2.6 3.35 notal convection - no fans tectures terminal 2.4 GHz proprietary RF (Nordic) toominunication 2.4 GHZ proprietary RF (Nordic)		211 204 103-220		211 204 100 220
takinum units per branch2 (10 AWG) 16 14 8 7 4 4 fficiency EC peak efficiency (%) EC weighted efficiency (%) Ecweighted efficiency (%) Ecweighted efficiency (%) Bighttime power consumption (mW) etechanical Data mbient temperature range (°C) techanical Data techanical Data techanica		>0.		aa)
taximum units per branch2 (10 AWG) 16 14 8 7 4 4 fficiency 96.7 EC peak efficiency (%) 96.7 EC weighted efficiency (%) 96.5 Ighttime power consumption (mW) 97.8 Itechanical Data 97.4 mbient temperature range (°C) -40 to +65 immensions (W × H × D) mm 182 × 164 × 29.5 250 × 170 × 28 Veight (kg) 1.75 2.6 3.35 nolosure rating Outdoor NEMA 6 MULTATISE (CP ration - no fans ioommunication 2.4 GHz proprietary RF (Nordic) YA 24 ioommunication 2.4 GHz proprietary RF (Nordic) YA 26 ioommunication 2.4 GHz proprietary RF (Nordic) YA 24 ioonpliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 158,	otal harmonic distortion	-0.		-37
EC peak efficiency (%) 96.7 EC weighted efficiency (%) 96.5 lominal MPPT efficiency (%) 99.8 lighttime power consumption (mW) <50 Hechanical Data mbient temperature range (°C) -40 to +65 limensions (W × H × D) mm 182 × 164 × 29.5 250 × 170 × 28 280 × 176 × 33 keight (kg) 1.75 2.6 3.35 nclosure rating Outdoor NEMA 6 looling Natural convection - no fans eatures communication 2.4 GHz proprietary RF (Nordic) fonitoring Ves Varranty Up to 25 years loompliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown KDEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	1aximum units per branch2 (10 AWG)	16 14		4 4
EC weighted efficiency (%) 96.5 Iominal MPPT efficiency (%) 99.8 Iighttime power consumption (mW) <50 techanical Data mbient temperature range (°C) -40 to +65 Dimensions (W × H × D) mm 182 × 164 × 29.5 250 × 170 × 28 280 × 176 × 33 Veight (kg) 1.75 2.6 3.35 nclosure rating Outdoor NEMA 6 icooling Natural convection - no fans extures communication 2.4 GHz proprietary RF (Nordic) tonitoring Yes Varranty Up to 25 years icompliance UL1741, IEEE 1547, UL 1741 SA (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown of PV Systems	Efficiency			
Iominal MPPT efficiency (%) 99.8 lighttime power consumption (mW) <50	CEC peak efficiency (%)		96.7	
Itighttime power consumption (mW) <50	CEC weighted efficiency (%)		96.5	
techanical Data	Jominal MPPT efficiency (%)		99.8	
mbient temperature range (°C) immensions (W × H × D) mm 182 × 164 × 29.5 250 × 170 × 28 280 × 176 × 33 280 × 176 × 33 290 Y H H H H H H H H H H H H H H H H H H	Nighttime power consumption (mW)		<50	
Imbient temperature range (°C) -40 to +65 Vimensions (W × H × D) mm 182 x 164 x 29.5 182 x 164 x 29.5 250 x 170 x 28 280 x 176 x 33 Veight (kg) 1.75 2.6 3.35 Inclosure rating Outdoor NEMA 6 icooling Natural convection - no fans communication 2.4 GHz proprietary RF (Nordic) Arranty Up to 25 years Varranty UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Par	Mechanical Data			
veight (kg) 1.75 2.6 3.35 nclosure rating Outdoor NEMA 6 cooling Natural convection - no fans eatures Image: Communication communication 2.4 GHz proprietary RF (Nordic) tointoring Yes Varranty Up to 25 years compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	Ambient temperature range (°C)		-40 to +65	
Veight (kg) 1.75 2.6 3.35 Inclosure rating Outdoor NEMA 6 Natural convection - no fans Natural convection - no fans eatures Image: Communication communication 2.4 GHz proprietary RF (Nordic) fonitoring Yes Varranty Up to 25 years compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	Dimensions (W × H × D) mm	182 x 164 x 29.5	250 x 170 x 28	280 x 176 x 33
Implementation Natural convection - no fans eatures Implementation communication 2.4 GHz proprietary RF (Nordic) Aonitoring Yes Varranty Up to 25 years Compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	Weight (kg)	1.75	2.6	3.35
cooling Natural convection - no fans eatures Image: Communication in the communicatin the communication	Enclosure rating		Outdoor NEMA 6	
eatures Image: Communication Image: Commu	Cooling		Natural convection - no fan	S
Monitoring Yes Varranty Up to 25 years Compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	Features			
Monitoring Yes Varranty Up to 25 years Compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems	Communication	2	4 GHz proprietary RF (Nord	c)
Varranty Up to 25 years compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems EQUI	Monitoring			,
Compliance UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C DATE: 0 V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems EQUID	Varranty			
FCC Part 15B, FCC Part 15C DATE: C V Rapid Shutdown Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems SHEET	Compliance	UL 1741, IEEE 1547, UL 1741 SA		Vac), CSA C22.2 No. 107.1-16,
Rapid Shutdown of PV Systems EQUI			FCC Part 15B, FCC Part 15C	
	ν καρία shutdown			
	Refer to local requirements for exact number of micr	oinverters per branch.		
. Refer to local requirements for exact number of microinverters per branch.				
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2023 Power Center AN				
2023 Power Center racell is a registered trademark of Duracell U.S. Operations, Inc., used under license. All rights reserved. BURACELL POWER CENTER 11"				
2023 Power Center Iracell is a registered trademark of Duracell U.S. Operations, Inc., used under license. All rights reserved. DURACELL POWER CENTER SHEET				
023 Power Center AN				

Microinverters			Technical Data r PV Microinverters 700-M2/D1500-M4	CAROLII CONNECTION CAROLINA CONNE 422 HUFFMAN MIL SUITE 105, BURLIN
lodel	D350-M1	D700-M2	D1500-M4	NC 27215, UNITED PHONE: (336) 585
Input Data (DC)				PHONE: (330) 585
Number of PV inputs	1	2	4	
Module power range, typical (W)	280 to 470+	280 to 470+	300 to 505+	
Maximum input voltage (V)		60		SYSTEM INFO
MPPT voltage range (V)		16-60		(26) LONGI SOLAR
Start-up voltage (V)		22		LR5-54HABB-400M (13) DURACELL POWER C
Maximum input current (A)		11.5		SOLAR PV DUAL D700-M2
Maximum input short circuit current (A)		15		DC SYSTEM SIZE: 10.400 AC SYSTEM SIZE: 9.048 F
Output Data (AC)				REVISIONS
Output Data (AC)	350	700	1500 1350	DESCRIPTION DATE
Peak output power (VA) Maximum continuous output power (VA)	349	696	1438 1246	REVISION 05/05/20
Maximum continuous output power (VA)	1.45 1.68	2.9 3.35	5.99 5.99	REVISION 05/07/20
Nominal output voltage(V)	240 208	240 208	240 208	
Nominal output voltage (v)	211-264 183-228	211-264 183-228	211-264 183-228	Signature with Se
Nominal frequency/range1 (Hz)	211 201 103 220	60/55-65		
Power factor (adjustable)	>0	.99 default (0.8 lead to 0.8	lag)	
Total harmonic distortion		<3%	0.	
Maximum units per branch2 (10 AWG)	16 14	8 7	4 4	
Efficiency				
CEC peak efficiency (%)		96.7		PROJECT NAME & AD
CEC weighted efficiency (%)		96.5		
Nominal MPPT efficiency (%)		99.8		<u> </u>
Nighttime power consumption (mW)		<50		NCF
				30 Z A A E
Mechanical Data				RESIDEI RCH WA 1A, NC 27 307-0539
Ambient temperature range (°C)		-40 to +65		CH V CH V
Dimensions ($W \times H \times D$) mm	182 x 164 x 29.5	250 x 170 x 28	280 x 176 x 33) 3 P R R
Weight (kg)	1.75	2.6	3.35	
Enclosure rating		Outdoor NEMA 6		LEK ARIN 716)
Cooling		Natural convection - no far	IS	
				CIOL APEF AY VA 1.# : (7
				5 PAI
Features				MARK CIOLEK RESIDEN 15 PAPER BIRCH WAY FUQUAY VARINA, NC 275 PH.# : (716) 307-0539
Communication	2	.4 GHz proprietary RF (Norc	ic)	Ă Ù '
Monitoring		Yes		Σ ["]
Warranty		Up to 25 years		
Compliance		FCC Part 15B, FCC Part 15C		DATE: 05/07/20 SHEET NAME
PV Rapid Shutdown		and NEC-2020 Article 690.1		EQUIPMEI
	F	Rapid Shutdown of PV Syster	ns	
*1. Nominal voltage/frequency range can vary dependi	-			SPECIFICAT
 Refer to local requirements for exact number of mic 	roinverters per branch.			SHEET SIZE
02023 Power Center			DURACELL	ANSI B
Duracell is a registered trademark of Duracell U.	S. Operations, Inc., used under lic	ense. All rights reserved.	POWER CENTER	11" X 17'
				SHEET NUMBE
				PV-9

licroinverters			Technical Data PV Microinverters 700-M2/D1500-M4
odel	D350-M1	D700-M2	D1500-M4
put Data (DC)			
umber of PV inputs	1	2	4
lodule power range, typical (W)	280 to 470+	280 to 470+	300 to 505+
laximum input voltage (V)		60	
IPPT voltage range (V)		16-60	
art-up voltage (V)		22	
laximum input current (A)		11.5	
laximum input short circuit current (A)		15	
	750	700	1500 1750
eak output power (VA)	350 349	700	1500 1350 1438 1246
aximum continuous output power (VA)			
aximum continuous output current (A)	1.45 1.68	2.9 3.35	5.99 5.99
pminal output voltage(V)	240 208	240 208	240 208
ominal output voltage range1 (V)	211-264 183-228	211-264 183-228	211-264 183-228
pminal frequency/range1 (Hz)		60/55-65	
wer factor (adjustable)	>0.	99 default (0.8 lead to 0.8 l	ag)
al harmonic distortion		<3%	
iximum units per branch2 (10 AWG)	16 14	8 7	4 4
fficiency			
C peak efficiency (%)		96.7	
C weighted efficiency (%)		96.5	
minal MPPT efficiency (%)		99.8	
ighttime power consumption (mW)		<50	
echanical Data			
mbient temperature range (°C)		-40 to +65	
mensions ($W \times H \times D$) mm	182 x 164 x 29.5	250 x 170 x 28	280 x 176 x 33
eight (kg)	1.75	2.6	3.35
closure rating	1.75	Outdoor NEMA 6	3.35
poling		Natural convection - no fan	ç
John g	I	vataral convection - no ran	5
atures			
	_		· · ·
ommunication	2.	4 GHz proprietary RF (Nord	ic)
pnitoring		Yes	
arranty		Up to 25 years	
ompliance	UL 1741, IEEE 1547, UL 1741 SA		Vac), CSA C22.2 No. 107.1-16,
'Rapid Shutdown	Conforms with NFC-2017	FCC Part 15B, FCC Part 15C and NEC-2020 Article 690.12	
· · · · · · · · · · · · · · · · · · ·		apid Shutdown of PV System	
		apia shataowin or ny system	15
Nominal voltage/frequency range can vary dependir			
Refer to local requirements for exact number of micr	oinverters per branch.		
023 Power Center racell is a registered trademark of Duracell U.S	Operations Inc. used under lice	onse All rights reserved	
ideal is a registered trademark of Daracen 0.3	. Operations, me., used under nee	inse. All rights reserved.	POWER CENTER

licroinverters			Technical Data PV Microinverters 700-M2/D1500-M4	CONNECT CAROLINA CON 422 HUFFMAN SUITE 105, BUF
odel	D350-M1	D700-M2	D1500-M4	NC 27215, UNIT PHONE: (336) 5
nput Data (DC)				
Number of PV inputs	1	2	4	
1odule power range, typical (W)	280 to 470+	280 to 470+	300 to 505+	
laximum input voltage (V)		60		
PPT voltage range (V)		16-60		SYSTEM II (26) LONGI SC
art-up voltage (V)		22		LR5-54HABB-4
aximum input current (A)		11.5		(13) DURACELL POW
aximum input short circuit current (A)		15		SOLAR PV DUAL D700 DC SYSTEM SIZE: 10
				AC SYSTEM SIZE: 9.
tput Data (AC)				REVISIO
ak output power (VA)	350	700	1500 1350	DESCRIPTION E
	349	696		REVISION 05/0
aximum continuous output power (VA)			1438 1246	REVISION 05/0
aximum continuous output current (A)	1.45 1.68	2.9 3.35	5.99 5.99	REVISION 030
minal output voltage(V)	240 208	240 208	240 208	
minal output voltage range1 (V)	211-264 183-228	211-264 183-228	211-264 183-228	Signature wit
minal frequency/range1 (Hz)		60/55-65		
wer factor (adjustable) al harmonic distortion	>0.	99 default (0.8 lead to 0.8 l <3%	agj	
ximum units per branch2 (10 AWG)	16 14	8 7	4 4	
ficiency				
C peak efficiency (%)		96.7		PROJECT NAME &
Cweighted efficiency (%)		96.5		
minal MPPT efficiency (%)		99.8		<u>ы Ц Ц с</u>
ghttime power consumption (mW)		<50		NCE
echanical Data				
nbient temperature range (°C)		-40 to +65		
mensions (W \times H \times D) mm	182 x 164 x 29.5	250 x 170 x 28	280 x 176 x 33	RCH A, NCH
	1.75	2.6	3.35	
'eight (kg) nclosure rating	1.75	2.0 Outdoor NEMA 6	5.55	EK F
oling		Natural convection - no fans	c	
oning	I	Natural convection - no runs	5	
atures				
ommunication	2	4 GHz proprietary RF (Nordi		MARK 15 FUQL
pnitoring	2.4	Yes	~	₹ L
arranty		Up to 25 years		≥ ¯
	I II 17/1 IFEE 15/7 I II 17/1 CA		Vac) CSA C22 2 No. 107 1 14	
mpliance		FCC Part 15B, FCC Part 15C	Vac), CSA C22.2 No. 107.1-16,	DATE: 05/0 SHEET NA
Rapid Shutdown	Conforms with NEC-2017	and NEC-2020 Article 690.12	and CEC-2021 Sec 64-218	
	R	apid Shutdown of PV System	าร	EQUIPM
Nominal voltage/frequency range can vary dependir	a on local requirements			SPECIFIC
Refer to local requirements for exact number of micr				SHEET S
·				
				ANSI
023 Power Center racell is a reaistered trademark of Duracell U.S	. Operations <u>Inc.</u> , used underlice	ense. All rights reserved		
023 Power Center racell is a registered trademark of Duracell U.S	. Operations, Inc., used under lice	ense. All rights reserved.	DURACELL' POWER CENTER	11" X
	. Operations, Inc., used under lice	ense. All rights reserved.		11" X
	. Operations, Inc., used under lice	ense. All rights reserved.		ANSI 11" X SHEET NUM PV-

licroinverters			Technical Data r PV Microinverters 700-M2/D1500-M4	CAROLINA CONN 422 HUFFMAN M SUITE 105, BURL
lodel	D350-M1	D700-M2	D1500-M4	NC 27215, UNITED PHONE: (336) 58
nput Data (DC)				
Number of PV inputs	1	2	4	
Module power range, typical (W)	280 to 470+	280 to 470+	300 to 505+	
Maximum input voltage (V)		60		SYSTEM INF
1PPT voltage range (V)		16-60		(26) LONGI SOLA
tart-up voltage (V)		22		LR5-54HABB-400
laximum input current (A)		11.5		(13) DURACELL POWER (SOLAR PV DUAL D700-M:
laximum input short circuit current (A)		15		DC SYSTEM SIZE: 10.400
				AC SYSTEM SIZE: 9.048
Dutput Data (AC)				REVISIONS
eak output power (VA)	350	700	1500 1350	DESCRIPTION DATE
laximum continuous output power (VA)	349	696	1438 1246	REVISION 05/05/20
1aximum continuous output power (VA)	1.45 1.68	2.9 3.35	5.99 5.99	REVISION 05/07/20
Jominal output voltage(V)	240 208	240 208	240 208	
lominal output voltage (v)	211-264 183-228	240 208 208 208	211-264 183-228	
Iominal frequency/range1 (Hz)	211-204 103-220	60/55-65	211-204 103-220	Signature with S
ower factor (adjustable)	>0	99 default (0.8 lead to 0.8		
otal harmonic distortion	-0.	<3%	log)	
1aximum units per branch2 (10 AWG)	16 14	8 7	4 4	
fficiency				
EC peak efficiency (%)		96.7		PROJECT NAME & A
EC weighted efficiency (%)		96.5		
ominal MPPT efficiency (%)		99.8		<u> </u>
lighttime power consumption (mW)		<50		1CE
				8 39 39 EN
lechanical Data				SIDEN 4 WAY NC 27
		10		
Ambient temperature range (°C)	10014400 5	-40 to +65	200 174 77	RCH A, A, A 307
Dimensions (W × H × D) mm	182 x 164 x 29.5	250 x 170 x 28	280 x 176 x 33	
Veight (kg)	1.75	2.6	3.35	ARIN 16)
nclosure rating		Outdoor NEMA 6	-	LEK ARI 716
Cooling		Natural convection - no fan	S	CIOL :: ():
eatures				
	-		:-)	MARK 15 PLQL
Communication	2.	4 GHz proprietary RF (Nord	IC)	
Ionitoring		Yes		E "
Varranty		Up to 25 years		
ompliance	UL 1741, IEEE 1547, UL 1741 SA	(240 Vac), CA Rule 21 (240 FCC Part 15B, FCC Part 15C	Vac), CSA C22.2 No. 107.1-16,	DATE: 05/07/20 SHEET NAME
V Rapid Shutdown	Conforms with NEC-2017	and NEC-2020 Article 690.12	2 and CEC-2021 Sec 64-218	
	R	apid Shutdown of PV Syster	ns	EQUIPME
Nominal voltage/frequency range can vary dependir	na on local requirements			SPECIFICAT
. Refer to local requirements for exact number of micr				SHEET SIZE
				ANSI B
2023 Power Center	Operations loc used updat lier	anse All rights recorded		11" X 17
uracell is a registered trademark of Duracell U.S	<u></u>	ense. An rights reserved.	POWER CENTER	
				SHEET NUMBE
				PV-9



The Respect Your Roof Deserves

When integrating with a home, solar attachments must be dependable for the lifetime of the rooftop. Due to recent innovations, many asphalt shingles have bonded courses. A mount that protects without the need to pry shingles can really speed things up.

Halo UltraGrip[™] (HUG[™]) is here to respect the roof. Its Halo is a cast-aluminum barrier that encases the UltraGrip, our industrial-grade, foam-and-mastic seal. This allows HUG to accelerate the installation process and provide the utmost in waterproofing protection. Give your roof a HUG.™



UltraGrip[™] Seal Technology HUG UltraGrip utilizes a state-of-theart seal design that uses a unique, foam-and-mastic combination. The foam-backed adhesive provides an entirely new flashing system that conforms and adheres to every nook and cranny of composition shingles, filling gaps and shingle step-downs (up to 1/8" in height).

QuickMount[®] HUG

Multi-Tiered Waterproofing HUG utilizes a multi-tiered stack of

components to provide revolutionary waterproofing protection. The Halo castaluminum, raised-perimeter foundation

surrounds the UltraGrip base-a foam-

backed mastic seal combination that prevents water intrusion by adhering

and sealing with the shingle surface.

Halo UltraGrip™ is part

of the QuickMount®

roduct line.

Tech Brief

Adaptive, Rafter-Friendly Installation



Hit the rafter? Good to go! When you find a rafter, you can move on. Only 2 RD Structural Screws are needed.

The rafter-mounted

tested and rated to

uplift and 368 (lbs)

support 1004 (lbs) of

HUG has been

of lateral load.



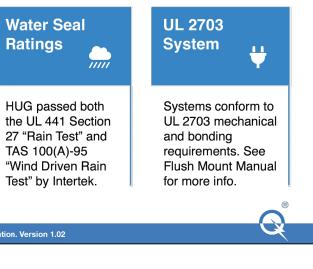
Miss the rafter? Try it again. Place another screw to the left or right. If rafter is found, install 3rd and final screw.

Trusted Strength & Less Hassle



Structural capacities of HUG[™] were reviewed in many load directions, with racking rail running cross-slope or up-slope in relation to roof pitch.

 No prying shingles No roof nail interference No pilot holes necessary • No sealant (in most cases) No butyl shims needed



TAS 100(A)-95



Triple Rated & Certified to Respect the Roof[™] UL 2703, 441 (27) TAS 100(A)-95



Rafter & Deck Mounting Options Mount HUG to the roof rafters, the roof deck, or both with our custom-engineered RD (rafter-or-deck) Structural Screw. The RD Structural Screw anchors HUG to the roof with an EPDM sealing washer, completing the stack of waterproofing barriers. See packside for more installation information.

X

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Parts are designed

and certified for

compliance with

the International

Building Code &

ASCE/SEI-7.

Tech Brief



If more than 3 screws miss the rafter, secure six screws to deck mount it.

For further details, see the HUG certification letters for attaching to rafters and decking.

IronRidge designed the HUG, in combination with the RD Structural Screw to streamline installs, which means the following:

SYSTEM INFO. (26) LONGI SOLAR LRS-54HABB-400M (13) DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V) DC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 9.048 KWAC REVISION 05/05/2025 A REVISION 05/07/2025 B SIGNATURE WITH Seal PROJECT NAME & ADDRESS PROJECT NAME & ADDRESS PROJECT NAME & ADDRESS SIGNATURE (11) (11) (11) (11) (11) (11) (11) (11	CAROLINA CONNECTIONS CAROLINA CONNECTIONS 422 HUFFMAN MILL ROAD, SUITE 105, BURLINGTON, NC 27215, UNITED STATES PHONE: (336) 585-1314					
(26) LONGI SOLAR LRS-54HABB-400M (13) DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V) DC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 9.048 KWAC DESCRIPTION DATE REV REVISION 05/07/2025 A REVISION 05/07/2025 B SIgnature with Seal Signature with Seal PROJECT NAME & ADDRESS B DATE: 05/07/2025 SHEET NAME EQUIPMENT SPECIFICATION SHEET SIZE AN SI B 11" X 17" SHEET NUMBER	SYSTEM I	NFO.				
(13) DURACELL POWER CENTER SOLAR PV DUAL D700-M2 (240V) DC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 9.048 KWAC REVISION 05/05/2025 A REVISION 05/07/2025 B Signature with Seal Signature with Seal PROJECT NAME & ADDRESS BLCH MAX, Solar SS SIGNAL POR SS SIGNAL SCALE SHEET NAME EQUIPMENT SPECIFICATION SHEET SIZE AN SI B 11" X 17" SHEET NUMBER	(26) LONGI S	OLAR				
DC SYSTEM SIZE: 10.400 KWDC AC SYSTEM SIZE: 9.048 KWAC REVISION 05/05/2025 A REVISION 05/07/2025 B Signature with Seal PROJECT NAME & ADDRESS BRCH MAY, Y 12 DATE: 05/07/2025 SHEET NAME EQUIPMENT SHEET NAME EQUIPMENT SHEET SIZE AN SI B 11" X 17" SHEET NUMBER	(13) DURACELL POW	ER CENT				
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REVISION 05/05/2025 A REVISION 05/07/2025 B Signature with Seal PROJECT NAME & ADDRESS PROJECT NAME & ADDRESS OUTONO SHEET NAME EQUIPMENT SHEET NAME EQUIPMENT SHEET SIZE AN SI B 11" X 17" SHEET NUMBER			REV			
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SHEET NAME EQUIPMENT SPECIFICATION SHEET SIZE ANSI B 11" X 17" SHEET NUMBER	MARK CIOLEK RESIDENCE 15 PAPER BIRCH WAY, FUQUAY VARINA, NC 27526	Email: mciolek2@qmail.com				
SPECIFICATION SHEET SIZE ANSI B 11" X 17" SHEET NUMBER						
SHEET SIZE ANSI B 11" X 17" SHEET NUMBER	-					
11" X 17" SHEET NUMBER						
	11" X ⁻	11" X 17"				

