

MODULE CHARACTERISTICS		
MANUFACTURER		HELIENE
MODEL		156HC M10 NTPP SL
MAXIMUM POWER @ STC		640 W
MAXIMUM POWER VOLTAGE, Vmp		48.8 V
MAXIMUM POWER CURRENT, Imp		13.1 A
OPEN-CIRCUIT VOLTAGE, Voc		57.7 V
SHORT-CIRCUIT CURRENT, Isc		13.8 A
MAXIMUM SYSTEM VOLTAGE, Vmax		1500 V
MAXIMUM SERIES FUSE RATING		30.0 A
THERMAL PROPERTIES	Pmax COEFFICIENT (γ)	-0.300%
	Voc COEFFICIENT (β)	-0.250%
	Isc COEFFICIENT (α)	0.045%

INVERTER CHARACTERISTICS		
MANUFACTURER	YASKAWA SOLECTRIA SOLAR	YASKAWA SOLECTRIA SOLAR
MODEL	XGI 1500 225/225-600	XGI 1500 250/250-600
RATED AC POWER	225 kW	250 kW
MIN. MPPT VOLTAGE	860 V	860 V
MAX. MPPT VOLTAGE	1250 V	1250 V
MAX. DC INPUT VOLTAGE	1500 V	1500 V
AC OUTPUT VOLTAGE	600 V	600 V
AC OUTPUT CURRENT	216.5 A	240.6 A
MAX AC CABLE OUTPUT	2 (SETS) OF 600 KCMIL	

WEATHER STATION DATA	
JACKSONVILLE, IL	
2% AVERAGE HIGH TEMP	33.0 °C
20-YR EXTREME HIGH TEMP	39.1 °C
EXTREME LOW TEMP	-20.5 °C
SITE ELEVATION	
205 m (672 FT)	

OUTDOOR THERMAL EXPANSION		
CONDUIT	4" EXPANSION JOINT REQ'D ON CONTINUOUS SPANS OVER 'X' FT	4" EXPANSION JOINT ALLOWS SPAN OF 'X' FT
STEEL	25	406
ALUMINUM	13	206
PVC	6	94

VOLTAGE DROP SUMMARY		
SYSTEM	AVERAGE	MAX
DC SYSTEM - BLOCK 1	1.90%	3.22%
LVAC SYSTEM - BLOCK 1	0.14%	0.20%
DC SYSTEM - BLOCK 2	1.56%	2.27%
LVAC SYSTEM - BLOCK 2	0.13%	0.18%
MVAC	0.05%	0.05%

### SHEET NOTES:

1. CONDUCTOR LENGTHS INDICATED ARE APPROXIMATIONS. CONTRACTOR SHALL VERIFY ACTUAL LENGTHS ON SITE.
2. ALL UNDERGROUND CONDUITS SHALL BE PVC 40. IF A CONDUIT RUN EXCEEDS 100 FT, THE 90° UNDERGROUND ELBOWS AT THE PULLING END OF THE CIRCUIT SHALL BE IMC. ALL OTHER UNDERGROUND ELBOWS AND STUB UPS SHALL BE PVC 80, UON.

### KEYED NOTES:

- 1 MINIMUM (1) #2 AWG CU EGC SHALL BE INSTALLED PER COMBINER OUTPUT CONDUIT STUB-UP AND PER INVERTER DC INPUT CONDUIT STUB-UP.
- 2 CONDUIT SIZES AND QUANTITIES VARY. SEE SHEETS E-201 THRU E-204 FOR REFERENCE.

DC SOURCE CIRCUIT CABLE SCHEDULE AND CALCULATIONS - BLOCK 1																																									
GENERAL			CONDUCTOR DETAILS				EGC DETAILS		RACEWAY DETAILS						MODULE					OCPD / TERMINATION AMPACITY					FREE AIR AMPACITY					RACEWAY AMPACITY					VOLTAGE DROP CALCULATIONS						
CABLE ID	FROM	TO	QTY	SIZE	MATERIAL	INSULATION	SIZE	MATERIAL	QTY	SIZE	TYPE	MAX CONDUCTORS PER CONDUIT	FILL (%)	TYPE	SIZE (W)	MAX ISC (A)	MAX ISC x 125% (A)	OCPD RATING (A)	90°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	MODULES PER STRING	AVG. ONE-WAY CABLE LENGTH (FT)	MAX ONE-WAY CABLE LENGTH (FT)	OPERATING CURRENT (Imp @ STC)	OPERATING VOLTAGE (Vmp @ STC)	IN-STRING VOLTAGE DROP (%)	AVG. TOTAL VOLTAGE DROP (%)	MAX TOTAL VOLTAGE DROP (%)						
STR 1.01-XX	STR 1.01-XX	CB-1.01	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	145	360	13.1	1121.7	0.56%	0.98%	1.60%						
STR 1.02-XX	STR 1.02-XX	CB-1.02	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	105	317	11.1	1121.7	0.56%	0.98%	0.99%						
STR 1.03-XX	STR 1.03-XX	CB-1.03	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	184	335	13.3	1121.7	0.56%	1.09%	0.53%						
STR 1.04-XX	STR 1.04-XX	CB-1.04	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	177	330	13.1	1121.7	0.56%	1.06%	1.52%						
STR 1.05-XX	STR 1.05-XX	CB-1.05	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	172	330	13.1	1121.7	0.56%	1.06%	1.52%						
STR 1.06-XX	STR 1.06-XX	CB-1.06	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	155	310	13.1	1121.7	0.56%	1.01%	1.46%						
STR 1.07-XX	STR 1.07-XX	CB-1.07	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	172	325	13.1	1121.7	0.56%	1.06%	1.50%						
STR 1.08-XX	STR 1.08-XX	CB-1.08	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	161	330	13.1	1121.7	0.56%	1.03%	1.52%						
STR 1.09-XX	STR 1.09-XX	CB-1.09	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	146	270	13.1	1121.7	0.56%	0.98%	1.34%						
STR 1.10-XX	STR 1.10-XX	CB-1.10	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	248	370	13.1	1121.7	0.56%	1.28%	1.63%						
																												AVERAGE DC VD		1.04%											
																												MAXIMUM DC VD		1.63%											

DC SOURCE CIRCUIT CABLE SCHEDULE AND CALCULATIONS - BLOCK 2																																								
GENERAL			CONDUCTOR DETAILS				EGC DETAILS		RACEWAY DETAILS						MODULE					OCPD / TERMINATION AMPACITY					FREE AIR AMPACITY					RACEWAY AMPACITY				VOLTAGE DROP CALCULATIONS						
CABLE ID	FROM	TO	QTY	SIZE	MATERIAL	INSULATION	SIZE	MATERIAL	QTY	SIZE	TYPE	MAX CONDUCTORS PER CONDUIT	FILL (%)	TYPE	SIZE (W)	MAX ISC (A)	MAX ISC x 125% (A)	OCPD RATING (A)	90°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	MODULES PER STRING	AVG. ONE-WAY CABLE LENGTH (FT)	MAX ONE-WAY CABLE LENGTH (FT)	OPERATING CURRENT (Imp @ STC)	OPERATING VOLTAGE (Vmp @ STC)	IN-STRING VOLTAGE DROP (%)	AVG. TOTAL VOLTAGE DROP (%)	MAX TOTAL VOLTAGE DROP (%)					
STR 2.01-XX	STR 2.01-XX	CB-2.01	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	132	210	13.1	1121.7	0.56%	0.94%	1.17%					
STR 2.02-XX	STR 2.02-XX	CB-2.02	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	186	295	13.1	1121.7	0.56%	1.10%	1.41%					
STR 2.03-XX	STR 2.03-XX	CB-2.03	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	132	210	13.1	1121.7	0.56%	1.10%	1.59%					
STR 2.04-XX	STR 2.04-XX	CB-2.04	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	186	295	13.1	1121.7	0.56%	1.18%	1.59%					
STR 2.05-XX	STR 2.05-XX	CB-2.05	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	180	350	13.1	1121.7	0.56%	1.08%	1.57%					
STR 2.06-XX	STR 2.06-XX	CB-2.06	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	150	245	13.1	1121.7	0.56%	0.99%	1.27%					
STR 2.07-XX	STR 2.07-XX	CB-2.07	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	177	305	13.1	1121.7	0.56%	1.07%	1.44%					
STR 2.08-XX	STR 2.08-XX	CB-2.08	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	131	235	13.1	1121.7	0.56%	0.94%	1.24%					
STR 2.09-XX	STR 2.09-XX	CB-2.09	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	156	240	13.1	1121.7	0.56%	1.01%	1.26%					
STR 2.10-XX	STR 2.10-XX	CB-2.10	2	#10 AWG	COPPER	PV 2KV	#6 AWG	COPPER	1	1-1/2"	PVC 40	8	26%	CONDUIT	640	16.70	20.87	25	40	55	0.97	0.50	26.8	40	0.97	0.70	27.3	23	136	220	13.1	1121.7	0.56%	0.95%	1.20%					
																												AVERAGE DC VD		1.04%										
																												MAXIMUM DC VD		1.72%										

COMBINER BOX OUTPUT CABLE SCHEDULE - BLOCK-1																														
GENERAL			CONDUCTOR DETAILS					EGC DETAILS		RACEWAY DETAILS				MODULE		TERMINATION AMPACITY				RACEWAY / DIRECT BURIED AMPACITY			VOLTAGE DROP CALCULATIONS							
CABLE ID	FROM	TO	QTY	SIZE	MATERIAL	INSULATION	SIZE	MATERIAL	QTY	SIZE	TYPE	FILL (%)	TYPE	COMBINER RATING (A)	SIZE (W)	# OF PARALLEL STRINGS	MAX ISC (A)	MAX ISC x 125% (A)	90°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	MODULES PER STRING	ONE-WAY LENGTH (FT)	COMBINER OUTPUT VD (%)	AVG STR & HAR VD (%)	COMBINER + AVG STR & HAR VD (%)	MAX STR & HAR VD (%)	COMBINER + MAX STR & HAR VD (%)
DC-1-01	CB-1.01	INV-1.01	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	1090	1.62%	0.98%	2.60%	1.60%	3.22%
DC-1-02	CB-1.02	INV-1.02	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	995	1.0%	0.98%	2.27%	0.96%	2.40%
DC-1-03	CB-1.03	INV-1.03	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	905	1.28%	1.09%	2.32%	1.81%	2.81%
DC-1-04	CB-1.04	INV-1.04	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	605	0.86%	1.06%	1.92%	1.52%	2.37%
DC-1-05	CB-1.05	INV-1.05	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	540	0.80%	1.06%	1.86%	1.52%	2.32%
DC-1-06	CB-1.06	INV-1.06	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	445	0.66%	1.01%	1.67%	1.46%	2.12%
DC-1-07	CB-1.07	INV-1.07	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	380	0.54%	1.06%	1.60%	1.50%	2.04%
DC-1-08	CB-1.08	INV-1.08	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	315	0.45%	1.03%	1.47%	1.52%	1.96%
DC-1-09	CB-1.09	INV-1.09	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	250	0.35%	0.98%	1.34%	1.34%	1.70%
DC-1-10	CB-1.10	INV-1.10	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	415	0.59%	1.28%	1.87%	1.63%	2.22%
TOTAL STRINGS																203														
																								AVERAGE	1.90%	MAXIMUM	3.22%			

COMBINER BOX OUTPUT CABLE SCHEDULE - BLOCK-2																																				
GENERAL			CONDUCTOR DETAILS					EGC DETAILS		RACEWAY DETAILS					MODULE	TERMINATION AMPACITY					RACEWAY / DIRECT BURIED AMPACITY					VOLTAGE DROP CALCULATIONS										
CABLE ID	FROM	TO	QTY	SIZE	MATERIAL	INSULATION	SIZE	MATERIAL	QTY	SIZE	TYPE	FILL (%)	TYPE	COMBINER RATING (A)	SIZE (W)	# OF PARALLEL STRINGS	MAX ISC (A)	MAX ISC x 125% (A)	90°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	MODULES PER STRING	ONE-WAY LENGTH (FT)	COMBINER OUTPUT VD (%)	AVG STR & HAR VD (%)	COMBINER + AVG STR & HAR VD (%)	MAX STR & HAR VD (%)	COMBINER + MAX STR & HAR VD (%)						
							1																													
DC-2-01	CB-2-01	INV-2-01	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	145	0.22%	0.94%	1.16%	1.17%	1.38%						
DC-2-02	CB-2-02	INV-2-02	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	100	0.15%	1.10%	1.25%	1.41%	1.56%						
DC-2-03	CB-2-03	INV-2-03	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	130	0.18%	1.13%	1.32%	1.59%							
DC-2-04	CB-2-04	INV-2-04	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	21	350.67	438.33	560	560	0.97	0.80	436.7	23	185	0.27%	1.18%	1.45%	1.72%	1.99%						
DC-2-05	CB-2-05	INV-2-05	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	205	0.29%	1.08%	1.37%	1.57%	1.86%						
DC-2-06	CB-2-06	INV-2-06	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	545	0.77%	0.99%	1.76%	1.27%	2.04%						
DC-2-07	CB-2-07	INV-2-07	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	380	0.54%	1.07%	1.61%	1.44%	1.98%						
DC-2-08	CB-2-08	INV-2-08	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	625	0.88%	0.94%	1.82%	1.24%	2.13%						
DC-2-09	CB-2-09	INV-2-09	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	620	0.88%	1.01%	1.89%	1.26%	2.13%						
DC-2-10	CB-2-10	INV-2-10	2	(2) SETS OF 350 KCMIL	ALUMINUM	PV 2KV	#2 AWG	COPPER	1	4"	PVC 80	25%	STUB-UP	600	640	20	333.97	417.46	560	560	0.97	0.80	436.7	23	755	1.07%	0.95%	2.02%	1.20%	2.27%						
TOTAL STRINGS																203																				
																	AVERAGE														1.56%	MAXIMUM				2.27%

MAXIMUM CURRENT

PER 2020 NEC 690.8(A)(1)(2), THE CALCULATED MAXIMUM CURRENT OF THE PV SYSTEM WAS DETERMINED USING NREL SYSTEM ADVISOR MODEL (SAM) SOFTWARE AND SITE SPECIFIC SATELLITE WEATHER DATA FOR THE PAST 27 YEARS [1998-2024] TO DETERMINE THE MAXIMUM 3-HOUR AVERAGE SHORT-CIRCUIT CURRENT. BOTH FRONT AND REAR-SIDE IRRADIANCE WERE CONSIDERED. BELOW IS A SUMMARY OF THE RESULTS.

HELIENE 640W:

- MAX TOTAL IRRADIANCE: 1153.56 W/m<sup>2</sup>
- MAX SHORT-CIRCUIT CURRENT: 16.37 A
- SAFETY FACTOR: 2%
- DESIGN MAX CURRENT: 16.70 A

MAXIMUM VOLTAGE

PER 2020 NEC 690.7(A)(3), THE CALCULATED MAXIMUM VOLTAGE OF THE PV SYSTEM WAS DETERMINED USING NREL SYSTEM ADVISOR MODEL (SAM) SOFTWARE AND SITE SPECIFIC SATELLITE WEATHER DATA FOR THE PAST 27 YEARS [1998-2024] TO DETERMINE THE MAXIMUM SYSTEM VOLTAGE. BOTH FRONT AND REAR-SIDE IRRADIANCE WERE CONSIDERED. BELOW IS A SUMMARY OF THE RESULTS.

HELIENE 640W:

- STRING LENGTH: 23
- MAX OPEN-CIRCUIT VOLTAGE: 1450.36 V
- SAFETY FACTOR: 2%
- DESIGN MAX VOLTAGE: 1479.37 V

## DESIGN COORDINATOR



# KNOBELSDORFF

25701 370TH STREET  
GOODHUE, MN 55027

**PROJECT**

**138883 CEMETERY  
SUN, LLC**

24638 ADAMS RD,  
FREDERICK, IL 62639  
40.089020°, -90.442132°

**ENGINEER**



**STELLAVISE**  
SOLAR ENGINEERING

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**SEAL**



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## REVISIONS

#	DESCRIPTION	DATE
0	IFC	02/06/2026
1	IFC R1	02/27/2026

**ISSUED FOR CONSTRUCTION**  
FEBRUARY 27, 2026

138883 CEMETERY  
SUN, LLC  
FREDERICK, IL, 62639

***SHEET TITLE***

## CABLE SCHEDULE & CALCULATIONS

**SHEET NO**

# E-501