**Projekt: „Słoneczna Żywiecczyzna”**

Grantodawca: Związek Międzygminny ds. Ekologii w Żywcu ul. Ks. Pr. St. Słonki 22, 34-300 Żywiec

Operator Projektu: ASCALOR Sp. z o.o. ul.Radawska 10, 37-522 Wiązownica

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| **LISTA nr 9 - URZĄDZEŃ SPEŁNIAJĄCYCH MINIMALNE PARAMETRY TECHNICZNE** |
| *miejsce na liście wynika wyłącznie z kolejności alfabetycznej* |
| *lista zawiera urządzenia zgłoszone do udziału w Projekcie Słoneczna Żywiecczyzna przez Wykonawców* |
| **PANELE FOTOWOLTAICZNE**   |  |  | | --- | --- | | ***PRODUCENT/NAZWA PANELI*** | ***TYP, MODEL*** | | **Aleo Solar** | X63L**333** | | **Bauer Solartechnik** | BS-6MHB5-EL; **330,335,340** | | **Bruk-Bet Solar** | BEM-**320** W BEM-**390** W | | **Canadian Solar** | CS3L-**355**MS CS3L-**360**MS CS3L-**365**MS  CS3L-**370**MS CS3L-**375**MS  CS3U **380**MS CS3U **385**MS CS3U **390**MS  CS3U **395**MS CS3U **400**MS  CS3N **400**MS CS3N **405**MS CS3N **410**MS  CS3N **415**MS CS3N **420**MS CS3N **425**MS | | **DAH Solar** | HCM72X9-**400**W HCM72X9-**405**W HCM72X9-**410**W HCM72X9-**415**W HCM60X9-**325**W HCM60X9-**330**W HCM60X9-**335**W HCM60X9-**340**W HCM60X9-**345**W | | **Dmegc Solar** | DM**325**G1-60HBW DM**330**G1-60HBW  DM**335**G1-60HBW DM**340**G1-60HBW | | **EcoDelta** | ECO-**325**M-60DHC black ECO-**330**M-60DHC black  ECO-**380**M-66SA ECO-**385**M-66SA ECO-**390**M-66SA  ECO-**395**M-66SA ECO-**400**M-66SA | | **EcoGreen Energy** | EGE-**320**M-60 | | **Empire Group** | EMP-**340**S60AH | | **Encor** | EC**360**M-6-120FB EC**370**M-6-120B | | **Enging** | EG-**340**M60-HD | | **EXE Solar** | A-HCM**330**/120 A-HCM**345**/120 | | **Heckert Solar** | Nemo 2.0 60M **305-330;** | | **Hyundai** | HiE-S**340**SG, HiE-S**345**SG, HiE-S**350**SG,  HiE-S**385**VG, HiE-S**390**VG, HiE-S**395**VG,  HiE-S**400**VG, HiE-S**405**VG | | **IBC** | **330**MS-HC **335**MS-HC **340**MS-HC | | **Jasolar** | JAM60S10-**340** JAM60S10-**340**/PR JAM60S10-**340**/MR  JAM60S10-**345**/MR/BF JAM60S20-**370**/MR/BF JAM60S20-**380**/MR-BF JAM60S20-**385**/MR-BF  JAM60S20-**365**/MR JAM60S20-**370**/MR  JAM60S20-**375**/MR JAM60S20-**380**/MR  JAM60S20-**385**/MR JAM60S20-**390**/MR  JAM72S20-**445**/MR JAM72S20-**450**/MR  JAM72S20-**455**/MR JAM72S20-**460**/MR  JAM72S20-**465**/MR JAM72S20-**470**/MR | | **Jiangsu SunLink PV Technology Co., Ltd** | **345** Mono | | **Jiangsu Sunport Power** | SPP**345**NHEH SPP**350**NHEH SPP**355**NHEH  SPP**360**NHEH SPP**365**NHEH SPP**370**NHEH  SPP**370**NHEH SPP**375**NHEH  SPP**445**NHJH SPP**450**NHJH SPP**455**NHJH  SPP**460**NHJH SPP**465**NHJH | | **JINKO Solar** | JKM**330**M-60H-V  JKM**390**M-72H JKM**395**M-72H JKM**400**M-72H  JKM**405**M-72H JKM**410**M-72H  JKM**390**M-72H-V JKM**395**M-72H-V JKM**400**M-72H-V JKM**405**M-72H-V JKM**410**M-72H-V  72MHC **530**W  72MHC **535**W  JKM**325**M-60H JKM**325**M-60H-V  JKM**330**M-60H JKM**330**M-60H-V  JKM**335**M-60H JKM**335**M-60H-V  JKM**340**M-60H JKM**340**M-60H-V  JKM**345**M-60H JKM**345**M-60H-V  JKM**385**M-6RL3 JKM**385**M-6RL3-V  JKM**390**M-6RL3 JKM**390**M-6RL3-V  JKM**395**M-6RL3 JKM**395**M-6RL3-V  JKM**400**M-6RL3 JKM**400**M-6RL3-V  JKM**405**M-6RL3 JKM**405**M-6RL3-V  JKM**430**M-6TL4 JKM**430**M-6TL4-V  JKM**435**M-6TL4 JKM**435**M-6TL4-V  JKM**440**M-6TL4 JKM**440**M-6TL4-V  JKM**445**M-6TL4 JKM**445**M-6TL4-V  JKM**450**M-6TL4 JKM**450**M-6TL4-V  JKM**455**M-7RL3 JKM**455**M-7RL3-V  JKM**460**M-7RL3 JKM**460**M-7RL3-V  JKM**465**M-7RL3 JKM**465**M-7RL3-V  JKM**470**M-7RL3 JKM**470**M-7RL3-V  JKM**475**M-7RL3 JKM**475**M-7RL3-V  MM**520**-72HLD-MB MM**525**-72HLD-MB  MM**530**-72HLD-MB MM**535**-72HLD-MB  MM**540**-72HLD-MB  MM**520**-72HLD-MBV MM**525**-72HLD-MBV  MM**530**-72HLD-MBV MM**535**-72HLD-MBV  MM**540**-72HLD-MBV  JKM**345**M-6TL3 JKM**350**M-6TL3  JKM**355**M-6TL3 JKM**360**M-6TL3  JKM**365**M-6TL3  JKM**345**M-6TL3-V JKM**350**M-6TL3-V  JKM**355**M-6TL3-V JKM**360**M-6TL3-V  JKM**365**M-6TL3-V  JKM**375**M-6RL3 JKM**380**M-6RL3  JKM**385**M-6RL3 JKM**390**M-6RL3  JKM**395**M-6RL3  JKM**375**M-6RL3-V JKM**380**M-6RL3-V  JKM**385**M-6RL3-V JKM**390**M-6RL3-V  JKM**395**M-6RL3-V  JKM**385**N-6RL3-B JKM**390**N-6RL3-B  JKM**395**N-6RL3-B JKM**440**N-6RL3-B  JKM**405**N-6RL3-B | | **KiotoSolar** | KPVMENEC **320**/**325/330**; | | **LG** | LG**340**N1K-V5 LG**335**N1K-V5 LG**330**N1K-V5  LG**325**N1K-V5 LG**355**N1C LG**350**N1C LG**345**N1C LG**340**N1C | | **LONGI** | LR4-72HPH **435**M    LR4-60HPH **360**M LR4-60HPH **365**M LR4-60HPH **370**M LR4-60HPH **375**M LR4-60HPH **380**M  LR4-60HPB **360**M  LR6-60OPH**-350**M LR6-60HPH **320**M    LR4-60HIH **350**M LR4-60HIH **355**M LR4-60HIH **360**M LR4-60HIH **365**M LR4-60HIH **370**M LR4-60HIH **375**M LR4-60HIH **380**M  LR5-72HBD **520**M LR5-72HBD **525**M LR5-72HBD **530**M LR5-72HBD **535**M LR5-72HBD **540**M LR5-72HBD **545**M | | **Longi Solar** | LR4-72HPH-**425**M LR4-72HPH-**430**M LR4-72HPH-**435**M LR4-72HPH-**440**M LR4-72HPH-**445**M LR4-72HPH-**450**M LR4-72HPH-**455**M | | **ML System** | ML-S6MF/T1**-330-**1002/1684;  ML-S6MF/T1-**400**-1004/2024;  ML-S6MF/T1-**375**-120;  ML-S6MF/T1-**400**-144  ML-S6MF/T1-**375**-144 (450W) | | **MPSolarGroup** | MP-M-**340**; MP-M-**345**; MP-M-**350** | | **PHONO SOLAR** | PS**330**M1-20/UH; PS**370**M4-20/UH  PS**375**M4-20/UH; PS**340**M3-20/UM  PS**435**M4-24/TH PS**435**M4H-24/TH PS**440**M4-24/TH PS**440**M4H-24/TH PS**445**M4-24/TH PS**445**M4H-24/TH PS**450**M4-24/TH PS**450**M4H-24/TH PS**455**M4-24/TH PS**455**M4H-24/TH | | **Q.CELLS** | Q.PEAK DUO BLK-G8 **340-350**;Q.PEAK DUO BLK-G9+ **330**; Q.PEAK DUO BLK-G9+ **335**; Q.PEAK DUO BLK-G9+ **340**; Q.PEAK DUO BLK-G9+ **345**;  Q.PEAK DUO ML-G9 **370**; Q.PEAK DUO ML-G9 **375**; Q.PEAK DUO ML-G9 **380**; Q.PEAK DUO ML-G9 **385**; Q.PEAK DUO ML-G9 **390**; Q.PEAK DUO ML-G9 **395;**  Q.PEAK DUO-G5 **320-330**;  Q.PEAK DUO-G6 **340-355**;Q.PEAK DUO-G6 **350**;  Q.PEAK DUO-G7 **325-335**;Q.PEAK DUO-G7 **335**;  Q.PEAK DUO-G8 **340-360**; | | **REC** | REC**360**AA; REC**365**AA; REC**370**AA; REC**375**AA; REC**380**AA; REC **320**NP; REC**325**NP; REC**330**NP; | | **Renevo** | HET-**370**M60AH  EMP-**340**S60AH | | **Risen** | RSM144-6-**380**M RSM144-6-**385**M RSM144-6-**390**M  RSM144-6-**395**M RSM144-6-**400**M RSM144-6-**405**M  RSM144-6-**410**M RSM144-6-**415**M  RSM120-6-**325**M RSM120-6-**330**M RSM120-6-**335**M  RSM120-6-**340**M RSM120-6-**345**M RSM120-6-**350**M  RSM132-6-**360**M RSM132-6-**365**M RSM132-6-**370**M  RSM132-6-**375**M RSM132-6-**380**M  RSM144-6-**390**BMDG RSM144-6-**395**BMDG  RSM144-6-**400**BMDG RSM144-6-**405**BMDG  RSM144-6-**410**BMDG RSM144-6-**415**BMDG | | **Saronic** | SR-**320**-60M; SR-**395**-144M; SR-**400-**144M;  SR**-405**-144M; SR-**410**-144M  SR-**355**-120M SR-**360**-120M  SR-**365**-120M SR-**370**-120M | | **Selfa** | SV120M.5(3)**-335**; SV120M.5(3)-**330;**  SV120M.3.2-**360;** SV120M.3.2-**365;** SV120M.3.2-**370**  SV108M.3-**400** | | **Seraphim** | SRP-**325**-BMB  SRP-**325**-BMB-HV SRP-**330**-BMB SRP-**330**-BMB-HV  SRP-**335**-BMB  SRP-**335**-BMB-HV SRP-**340**-BMB-HV SRP-**345**-BMB-HV  SRP-**360**-BMB-HV SRP-**365**-BMB-HV SRP-**370**-BMB-HV SRP-**375**-BMB-HV | | **SHARP** | NU-BA**385** NU-BA**380**  NU-JB**395**  NU-JC**320**B NU-JC**330** NU-JC**360**B NU-JC**370**  NU-JD**439** NU-JD**445** | | **Sinosola** | SA**355**-120M; SA**360**-120 M; SA**365**-120 M;  SA**370**-120M; SA**320**-120M; SA**325**-120M; SA**330**-120M; SA**335**-120M; SA**340**-120M; SA**345**-120M | | **Solar Fabrik** | Mono S3 **365**W; Mono S3 **370**W; Mono S3 **375**W;  Mono S2 **330**W; Mono S2 **335**W; Mono S2 **340**W; | | **Sunergy USA WORKS LLC** | SUN**340**-60M-HF | | **Sunpro** | **340** HieFF Twin RA-L | | **Sunpro Power** | SP**365**-120M SP**370**-120M SP**375**-120M  SP**440**-144M SP**445**-144M SP**450**-144M | | **Sunport Power** | SPP**345**NHEH SPP**350**NHEH SPP**355**NHEH SPP**360**NHEH | | **SUNTECH** | HyPro STP**335**S-325S -A60/Wfh;  HIPro STP**330**S-A60/Wnh  STP**320**S-A60/Wnhb; STP**325**S-A60/Wnhb;  STP**330**S-A60/Wnhb; STP**335**S-A60/Wnhb;  STP**340**S-A60/Wnhb ;  STP**320**S-A60/Wfhb; STP**325**S-A60/Wfhb  STP**330**S-A60/Wfhb; STP**335**S-A60/Wfhb;  STP**340**S-A60/Wfhb;  STP**320**S-20/Wfh h  STP**350**S-B60/Wnh; STP**355**S-B60/Wnh;  STP**360**S-B60/Wnh; STP**365**S-B60/Wnh;  STP**370**S-B60/Wnh; STP**375**S-B60/Wnh;  STP**395**S-A72/Vfh; STP**400**S-A72/Vfh; STP**405**S-A72/Vfh  STP**530**S-C72/Vmh STP**535**S-C72/Vmh  STP**540**S-C72/Vmh STP**545**S-C72/Vmh  STP**550**S-C72/Vmh  STP**390**S-C54/Umhb STP**395**S-C54/Umhb  STP**400**S-C54/Umhb STP**405**S-C54/Umhb  STP**410**S-C54/Umhb  STP**390**S-C54/Umh STP**395**S-C54/Umh  STP**400**S-C54/Umh STP**405**S-C54/Umh  STP**410**S-C54/Umh  STP**440**S-B72/Vnh STP**445**S-B72/Vnh  STP**450**S-B72/Vnh STP**455**S-B72/Vnh  STP**460**S-B72/Vnh | | **Sunrise Energy** | SR-M660 **325**HL; SR-M660 **330**HL; SR-M660 **335**HL;  SR-M660 **340**HL | | **Suzhou Talesun Solar** | TP6H60M-**320** TP6H60M-**325** TP6H60M-**330**  TP6H60M-**335** TP6H60M-**340** | | **Talesun** | TP6L60M-**355** TP6L60M-**360** TP6L60M-**365**  TP6L60M-**370** TP6L60M-**375** | | **TrinaSolar** | TSM-**325** DE06M.08(II) TSM-**330** DE06M.08(II)  TSM-**335** DE06M.08(II) TSM-**340** DE06M.08(II)  TSM-**345** DE06M.08(II) TSM-**360** DE08M.08(II)  TSM-**365** DE08M.08(II) TSM-**370** DE08M.08(II)  TSM-**375** DE08M.08(II) TSM-**380** DE08M.08(II)  Vertex S TSM-DE09.08 **390**W  Vertex S TSM-DE09.08 **395**W  Vertex S TSM-DE09.08 **400**W  Vertex S TSM-DE09.08 **405**W  Vertex S Backsheet TSM-DE09.05 **380**W  Vertex S Backsheet TSM-DE09.05 **385**W  Vertex S Backsheet TSM-DE09.05 **390**W  Vertex S Backsheet TSM-DE09.05 **395**W | | **Ulica solar** | UL-**355**M-120; UL-**360**M-120; UL-**365**M-120;  UL-**370**M-120; UL-**375**M-120;  UL-**405**M-144; UL-**410**M-144; UL-**415**M-144;  UL-**435**M-144; UL-**440**M-144; UL-**445**M-144;  UL-**450**M-144; | | **Viessmann** | Vitovolt 300 M**335**WA, M**340**WA  Vitovolt 300 M**385**WG  Vitovolt M**390**WG | | **Winaico** | WST-**325**M6 WST-**330**M6 WST-**370**MG WST-**375**MG | | **ZnshineSolar** | ZXM6-NHLDD144-**390**/M ZXM6-NHLDD144-**395**/M ZXM6-NHLDD144-**400**/M ZXM6-NHLDD144-**405**/M ZXM6-NHLDD144-**410**/M ZXM6-NHLDD144-**415**/M  ZXM6-NHLDD144-**430**W ZXM6-NHLDD144-**435**W  ZXM6-NHLDD144-**440**W ZXM6-NHLDD144-**445**W  ZXM6-NHLDD144-**450**W ZXM6-NHLDD144-**455**W  ZXM7-SHLDD108-**390**W ZXM7-SHLDD108-**395**W  ZXM7-SHLDD108-**400**W ZXM7-SHLDD108-**405**W  ZXM7-SHLDD108-**410**W  ZXM6-NHLDD120-**350**W ZXM6-NHLDD120-**355**W ZXM6-NHLDD120-**360**W ZXM6-NHLDD120-**365**W ZXM6-NHLDD120-**370**W | |  |  | | **INWERTER** | | | ***PRODUCENT/NAZWA*** | ***TYP, MODEL*** | | **ABB** | Trio 5.8TL-Outd Trio 7.5TL-Outd Trio 8.5TL-Outd | | **Afore** | BNT003KTL; BNT004KTL; BNT005KTL; BNT006KTL; BNT008KTL; BNT010KTL | | **FoxESS** | T3 / T4 / T5 / T6 / T8 / T10/ T12 / T15 / T17 / T20 / T25  S700 S1000 S1500 S2000 S2500 S3000 | | **FRONIUS** | PRIMO 3.0-1-3.6-1; SYMO 3.0-3-S-10.0-3-M; | | **Growatt** | 1500S; 2000S; 3000S;  3000TL3-S; 4000TL3-S; 5000TL3-S; 6000TL3-S;7000TL3-S; 8000TL3-S; 9000TL3-S; 10000TL3-S; 11000TL3-S  MOD 3000TL3-X; MOD 4000TL3-X; MOD 5000TL3-X;  MOD 6000TL3-X ;MOD 7000TL3-X  MIC 1000TL-X MIC 1500TL-X MIC 2000TL-X  MIC 2500 TL-X MIC 3000 TL-X | | **Huawei** | SUN2000 KTL-M0/M1 3.0-10 KW;  SUN2000 KTL-3-M0; SUN2000 KTL-4-M0;  SUN2000 KTL-5-M0; SUN2000 KTL-6-M0;  SUN2000 KTL-8-M0; SUN2000 KTL-10-M0;  SUN2000 KTL-12-M0; SUN2000 KTL-15-M0;  SUN2000 KTL-17-M0; SUN2000 KTL-20-M0;  SUN2000L-2KTL; SUN2000L-3KTL; SUN2000L-3,68KTL  SUN2000-2KTL-L1; SUN2000-3KTL-L1;  SUN2000-3,68KTL-L1 | | **Hypontech** | HPT-3000, HPT-4000, HPT-5000, HPT-6000,  HPT-8000, HPT-10000 | | **Renac** | R1-1K1-SS, R1-1K6-SS, R1-2K2-SS  R1-2K7-SS, R1-3K3-SS, R1-3K7-SS  R3-4K-DT, R3-5K-DT, R3-6K-DT, R3-8K-DT  R3-10K-DT, R3-12K-DT, R3-15K-DT | | **Selfa** | SFT 4.0, SFT 5.0, SFT 6.0, SFT 8.0, SFT 10.0  SFT 12.0, SFT 15.0, SFT 17.0, SFT 20.0 | | **SMA** | Sunny Tripower 3.0; Sunny Tripower 4.0;  Sunny Tripower 5.0; Sunny Tripower 6.0;  Sunny Tripower 8,0; Sunny Tripower 10,0;  Sunny Boy 1,5; Sunny Boy 2,0, Sunny Boy 2,5 | | **Sofar** | 3,3KTL-X; 4,4KTL-X; 5,5KTL-X; 6,6KTL-X;  8,8KTL-X; 11KTL-X; 12KTL-X;  3KTLM-G2 3,6KTLM-G2  HYD10KTL-3PH 3F  1100TL-G3 1600TL-G3 2200TL-G3  2700TL-G3 3000TL-G3 3300TL-G3 | | **SolarEdge** | SE3K, SE4K, SE5K, SE6K, SE7K, SE8K, SE9K, SE10K; SE12,5K, SE15K, SE16K, SE17K,  SE2200H, SE3000H, SE3500H, SE3680H | | **Solax Power** | X3-4.0-T, X3-5.0-T, X3-6.0-T, X3-7.0-T, X3-8.0-T  X3-9.0-T, X3-10.0-T  X3-4.0-S, X3-5.0-S | | **Solis** | Solis-1P2,5K-4G; Solis-1P3K-4G; Solis-1P3,6K-4G;  Solis-3P3K-4G; Solis-3P4K-4G; Solis-3P5K-4G;  Solis-3P6K-4G; Solis-3P8K-4G; Solis-3P9K-4G;  Solis-3P10K-4G;  S5-GR1P2K-M; S5-GR1P2,5K-M; S5-GR1P3K-M;  S5-GR1P3,6K-M | | **Steca** | StecaGrid 4213 StecaGrid 5513 StecaGrid 7013 StecaGrid 8513 StecaGrid 10013;  StecaGrid 3213 StecaGrid 4013 StecaGrid 5013 StecaGrid 6013 | |

**TERMINAL DOSTĘPOWY**

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| ***PRODUCENT/NAZWA*** | ***TYP, MODEL*** |
| **MCD ELECTRONICS** | DH-MWT-20 + DHMWL-20.  ***Urządzenie rekomendowane przez ZMGE w Żywcu*** |
| **PV-MONITOR** | SYSTEM 3F+3F; 1F+3F; 1F+1F,  ***Urządzenia dopuszczone przez ZMGE w Żywcu*** |
| **SOLAR-LOG** | Solar Log Base 15 + Pro 380 mod  Solar Log 50 + licznik PRO380 Mod  Solar Log 250 + licznik PRO380 Mod  ***Urządzenia dopuszczone przez ZMGE w Żywcu*** |
| **HEWALEX** | System G432 Opti-Ener  ***Urządzenia dopuszczone przez ZMGE w Żywcu*** |