**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**

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| ***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**MSCS3U **380**MS CS3U **385**MS CS3U **390**MSCS3U **395**MS CS3U **400**MSCS3N **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 blackECO-**380**M-66SA ECO-**385**M-66SA ECO-**390**M-66SAECO-**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**/MRJAM60S10-**345**/MR/BF JAM60S20-**370**/MR/BF JAM60S20-**380**/MR-BF JAM60S20-**385**/MR-BFJAM60S20-**365**/MR JAM60S20-**370**/MR JAM60S20-**375**/MR JAM60S20-**380**/MR JAM60S20-**385**/MR JAM60S20-**390**/MRJAM72S20-**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**NHEHSPP**370**NHEH SPP**375**NHEHSPP**445**NHJH SPP**450**NHJH SPP**455**NHJHSPP**460**NHJH SPP**465**NHJH |
| **JINKO Solar** | JKM**330**M-60H-VJKM**390**M-72H JKM**395**M-72H JKM**400**M-72HJKM**405**M-72H JKM**410**M-72HJKM**390**M-72H-V JKM**395**M-72H-V JKM**400**M-72H-V JKM**405**M-72H-V JKM**410**M-72H-V72MHC **530**W72MHC **535**WJKM**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-VJKM**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-VJKM**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-VJKM**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-VMM**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-MBVJKM**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-VJKM**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-VJKM**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**MLR6-60OPH**-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**MLR5-72HBD **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**-144ML-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/UMPS**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**MRSM144-6-**395**M RSM144-6-**400**M RSM144-6-**405**M RSM144-6-**410**M RSM144-6-**415**MRSM120-6-**325**M RSM120-6-**330**M RSM120-6-**335**M RSM120-6-**340**M RSM120-6-**345**M RSM120-6-**350**MRSM132-6-**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**BMDGRSM144-6-**410**BMDG RSM144-6-**415**BMDG |
| **Saronic** | SR-**320**-60M; SR-**395**-144M; SR-**400-**144M; SR**-405**-144M; SR-**410**-144MSR-**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**-BMBSRP-**325**-BMB-HV SRP-**330**-BMB SRP-**330**-BMB-HVSRP-**335**-BMBSRP-**335**-BMB-HV SRP-**340**-BMB-HV SRP-**345**-BMB-HVSRP-**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**-120MSP**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/WnhSTP**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 hSTP**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/VfhSTP**530**S-C72/Vmh STP**535**S-C72/Vmh STP**540**S-C72/Vmh STP**545**S-C72/Vmh STP**550**S-C72/VmhSTP**390**S-C54/Umhb STP**395**S-C54/Umhb STP**400**S-C54/Umhb STP**405**S-C54/Umhb STP**410**S-C54/UmhbSTP**390**S-C54/Umh STP**395**S-C54/Umh STP**400**S-C54/Umh STP**405**S-C54/Umh STP**410**S-C54/UmhSTP**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**WVertex S Backsheet TSM-DE09.05 **380**WVertex S Backsheet TSM-DE09.05 **385**WVertex S Backsheet TSM-DE09.05 **390**WVertex 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**WAVitovolt 300 M**385**WGVitovolt 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**/MZXM6-NHLDD144-**430**W ZXM6-NHLDD144-**435**W ZXM6-NHLDD144-**440**W ZXM6-NHLDD144-**445**WZXM6-NHLDD144-**450**W ZXM6-NHLDD144-**455**WZXM7-SHLDD108-**390**W ZXM7-SHLDD108-**395**WZXM7-SHLDD108-**400**W ZXM7-SHLDD108-**405**WZXM7-SHLDD108-**410**W ZXM6-NHLDD120-**350**W ZXM6-NHLDD120-**355**W ZXM6-NHLDD120-**360**W ZXM6-NHLDD120-**365**W ZXM6-NHLDD120-**370**W |
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| **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 / T25S700 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-SMOD 3000TL3-X; MOD 4000TL3-X; MOD 5000TL3-X; MOD 6000TL3-X ;MOD 7000TL3-XMIC 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-3,68KTLSUN2000-2KTL-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-SSR3-4K-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-G2HYD10KTL-3PH 3F1100TL-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-TX3-9.0-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 |

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**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 ModSolar Log 250 + licznik PRO380 Mod ***Urządzenia dopuszczone przez ZMGE w Żywcu*** |
| **HEWALEX** | System G432 Opti-Ener ***Urządzenia dopuszczone przez ZMGE w Żywcu*** |