

Sr. No.	5 HP, Submersible Requirement as per DNIT	Servotech Power Systems Pvt Ltd., Sonapat	Jain Irrigations, Jalgaon		Central Electronics Ltd.	
		1	2		3	
1	Solar PV Panels (4800 Wp)	4809 W, Make-TOPSUN ENERGY	Jain Irrigation (4965 Wp)	CEL(4737W)	CEL(4830W)	CEL(4737W)
2	Motor Pumpset type (5 HP with controller)	Make- OSWAL PUMPS	Make-Shakti	Make-Shakti	Make-Triveni	Make-Kirloskar
3	Pump Type	AC	AC	AC	AC	AC
4	Controller	Make- Servotech "SAARA"	Make- Jain Irrigations	Make-Shakti	Make-Chetan	Make-Kirloskar
5	Remote Monitoring System	Provided	Provided	Provided	Provided	Provided
6	Shut off Dynamic Head (70.0 meters)	70 m	170 m	70m	70 m	70
7	Water Output* (91,200 litres per day from a total head of 50 metres.	99430 liters at 50 m head	50084.38 liters at 100 m head	115100 liters at 50m head	106338 liters at 50m head	121233 liters at 50m head
8	Tracking	Manual	Continuous	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	20.08.2016 issued by TUV Rheinland	05.02.2016	27.05.16, TUV	12.04.17, NISE	08.03.16, NISE
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	240 W	310.31 Wp	296 W	300W	280W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	14.81%	15.97%	15.23%	Comply	15.30%
14	Fill factor should be more than 70%.	73.92%	75.90%	75.76%	Comply	75.17%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Comply, test report of Bharat Test House Pvt. Ltd., Sonapat submitted	Provided (manufacturer test report enclosed)	Provided	Provided	Not Provided
	REMARKS	--	Tested at 100 m head	Module capacity is less	--	1. Module capacity is less 2. IP54 not provided

Sr. No.	5 HP, Submersible	REIL, JAIPUR	Ethospow Pvt. Ltd., Gurgaon	Alpex Exports Pvt. Ltd., Rewari	Waree Energies Pvt. Ltd.			
		4	5	6	7			
1	Solar PV Panels (4800 Wp)	REIL (4968)	Ackh. Submitted	Alpex (5147W)	Waree(4896W)	Waree (4896W)	Waree (4896W)	
2	Motor Pumpset type (5 HP with controller)	Make-Shakti		Make-Shakti	Make-CRI	Make-Shakti	Make-Shakti	
3	Pump Type	AC		AC	AC	AC	AC	
4	Controller	Make-Shakti		Make-FUZI	M	Make-Waree	Make-Shakti	Make-Shakti

					a k e - W a r e e			
5	Remote Monitoring System	Provided		Provided	P r o v i d e d	Provided	Provided	Provided
6	Shut off Dynamic Head (70.0 meters)	100 m		95	2 5 m	110	100	100
7	Water Output* (91,200 litres per day from a total head of 50 metres.	89300 Liters at 70 m head		111890 liters at 50 m head	2 2 1 9 0 0 a t 2 0 m h e a d	66400 at 70m head	86613 at 70 m head	86613 at 70 m head
8	Tracking	Manual		Manual	M a n u a l	Manual	Continuous	Continuous
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	30.08.16 (TUV)		29.06.2016, NISE	1 6. 0 5.	29.08.16, TUV	15.03.2017, UL	15.03.2017, UL

					1 7, T U V			
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	155.26 W		300W	3 0 4 W	306W	306.4W	306.4W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/Standards.	Qualified		Qualified	Q u a l i f i e d	Qualified	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified		Qualified	Q u a l i f i e d	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15.61%		16.66%	1 5. 6 6 %	15.77%	15.57%	15.57%
14	Fill factor should be more than 70%.	75.55%		77.27%	7 6. 3 6 %	76.25%	76.25%	76.25%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided		Provided	P r o v i d e	Provided	Provided	Provided

	REMARKS	Tested at 70m head	--	--	d T e s t e d a t 2 0 m h e a d	Tested at 70m head	Tested at 70m head	Tested at 70m head
--	----------------	--------------------	----	----	--	--------------------	--------------------	--------------------

Sr. No.	5 HP, Submersible	Shakti Pumps		Lohia Sales	PV Powertech		
		8		9	10		
1	Solar PV Panels (4800 Wp)	Jyoti Tech Solar (4868.91W)	PV Power (4754.46 W)	Alpex (5158W)	PV Power tech (4917 W)	PV Powertech (4917 W)	PV Powertech (4917 W)
2	Motor Pumpset type (5 HP with controller)	Make-Shakti	Make-Shakti	Make-Shakti	Make-Shakti	Make-Shakti	Make-Shakti
3	Pump Type	AC	AC	AC	AC	AC	AC
4	Controller	Make-Shakti	Make-Shakti	Make-Shakti	Make-VRG	Make-VRG	Make-VRG
5	Remote Monitoring System	Provided	Provided	Not Observed	Provid	Provided	Provided

					ed		
6	Shut off Dynamic Head (70.0 meters)	70	70	70 m	45 m	100 m	70
7	Water Output* (91,200 litres per day from a total head of 50 metres.	106400 at 50 m head	120800 liters at 50 m head	126350 liters at 50 m head	22496 at 20 m head	80000 liters at 70 m head	116900 at 50 m head
8	Tracking	Manual	Manual	Manual	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	20.01.17, TUV	29.12.15, TUV	11.12.15, NISE	06.06.16, TUV	06.06.16, TUV	06.06.16, TUV
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	304.31 W	297.15	250 W	307 W	307 W	307 W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15.68%	15.33%	16.11%	15.87%	15.87%	15.87%
14	Fill factor should be more than 70%.	76.60%	75.13%	74.79%	76.14%	76.14%	76.14%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	Provided	Not Observed	Provided	Provided	Provided
	REMARKS	--	Module capacity is less	RMS and IP54 not observed	Tested at 20m head	Tested at 70m head	--

12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15%	15%	15.85%	15.85%	15.76%	15.76%	15.10%	15.10%	15%
14	Fill factor should be more than 70%.	76%	76%	76.12%	76.12%	74.23%	74.23%	75.72%	75.72%	76%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	IP55	Provided	Provided	Not Mentioned	Provided	Not Mentioned	Not Mentioned	Provided
	REMARKS	Tested at 70m head	Tested at 70m head IP55 Tested	--	--	1. IP54 not mentioned 2. RMS not mentioned	--	IP54 not mentioned	IP54 not mentioned	Tested at 70m head

Sr. No.	5 HP, Submersible	Premier Solar			Meera and Ceiko Pumps Pvt Ltd, Secunderabad			
		11			13			
1	Solar PV Panels (4800 Wp)	Premier Solar (5154W)		PV Power (4892.67 W)	PV Power (4892.67 W)	P V P o w e r (4 7 1 2 . 9	Sova (4804.19 W)	Sova (4804.19 W)

					3 W)		
2	Motor Pumpset type (5 HP with controller)	Make-Shakti	Make-Shakti	Make-Shakti	M a k e - R o t o m a g	Make-Shakti	Make-Shakti
3	Pump Type	AC	AC	AC	A C	AC	AC
4	Controller	Make-Shakti/Delta	Make-Meera & Ceiko	Make-Seimans	M a k e - R o t o m a g	Make-Seimans	Make-Seimans
5	Remote Monitoring System	Provided	Provided	Provided	P r o v i d e	Provided	Provided

					d		
6	Shut off Dynamic Head (70.0 meters)	80m	70	70	70	70	70
7	Water Output* (91,200 litres per day from a total head of 50 metres.	124445 liters at 50m head	82070 liters at 50 m head	123870 liters at 50 m head	124880 liters at 50 m head	124880 liters at 50 m head	124880 liters at 50 m head
					101040 liters at 50 m head		
8	Tracking	Continuous	Manual	Manual	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	21.03.16, UL	19.02.16, TUV	11.01.16, TUV	26.05.	14.08.15, TUV	14.08.15, TUV

					1 6 · T U V		
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	322 W	305.79	305.79	2 9 3 · 9 3	300.26	300.26
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Q u a l i f i e d	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Q u a l i f i e d	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	16.50%	15.76%	15.76%	1 5 · 1 8 %	15.65%	15.65%
14	Fill factor should be more than 70%.	75.70%	75.10%	75.10%	7 5 · 3	76.25%	76.25%

					4 %		
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Not tested (However it has also been mentioned in the test report that the VFD of Shakti make is IP54)	Provided	Provided	P r o v i d e d	Provided	Provided
	REMARKS	Controller mentioned as Shakti and Delta in the test report	Discharge is less	--	M o d u l e c a p a c i t y i s l e s s	--	--

Sr. No.	5 HP, Submersible	Captain Polyplast	Arya Green Power Pvt Ltd	Novus Green		Savan Electronics	Ecozen Solutions Pvt. Ltd.	
		14	15	16		18	19	
1	Solar PV Panels (4800 Wp)	Ackh. Submitted	Topsun (5070.02)	PV Power (4801.83 W)	Icon Sola	PV Power (4937.64)	Access Solar (4936.74 W)	Icon Solar (4933W)

					r (474 1 W)			
2	Motor Pumpset type (5 HP with controller)		Make-Duke Plasto	Make-PSG	Make-PSG	Make-VRG Energy	Make-CRI	Make-Flacon
3	Pump Type		AC	AC	AC	AC	AC	AC
4	Controller		Make-Hermes Technologies	Make-Novus Green	Make-Novus Green	Make-VRG Energy	Make-Savan Electronics	Make-Ecozen
5	Remote Monitoring System		Provided	Provided	Provided	Not Provided	Provided	Provided
6	Shut off Dynamic Head (70.0 meters)		100	70	70	70	110 m	120 m
7	Water Output* (91,200 litres per day from a total head of 50 metres.		74200 liters at 70 m head	98730 liters at 50 m head	93400 liters at 50m head	104600 liters at 50 m head	66.035 at 70m head	70982 liters at 70 m head
8	Tracking		Manual	Manual	Manual	Manual	Continuous	Continous
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.		23.06.16, TUV	11.05.15, TUV	15.02.17, TUV	01.09.15, TUV	24.05.16, UL	15.06.17, UL
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak		253.5	240.09 W	296.32 W	246.88	246.83	308W
11	Modules supplied with the SPV water pumping systems should have		Qualified	Qualified	Qualified	Qualified	Qualified	Qualified

	certificate as per IEC 61215 specifications or equivalent National or International/ Standards.							
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.		Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%		15.59%	14.83%	15.26%	15.22%	14.77%	15.40%
14	Fill factor should be more than 70%.		75.94%	75.42%	75.24%	75.71%	73.87%	76%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection		Provided	Provided	Provided	Not Provided	Not Tested	Provided
	REMARKS	--	Tested at 70m head	--	Module capacity is less	RMS & IP54 not provided	1. Tested at 70m head 2. IP54 not tested	Tested at 70m head

Sr. No.	5 HP, Submersible	Gautam Solar Pvt Ltd, New Delhi	Uratom Solar (I) Pvt Ltd	TATA Solar Power
		21	23	24
1	Solar PV Panels (4800 Wp)	Gautam (4802 W)	Navita (5807 W)	Tata (4801.79) Tata (4823.55 W)
2	Motor Pumpset type (5 HP with controller)	Make-Gautam	Make-falcon	Make-Shakti Make-

					Shakti
3	Pump Type	AC	AC	AC	AC
4	Controller	Make-Gautam	Make-Uratom	Make-Fuzi Electric	Make-Shakti
5	Remote Monitoring System	Provided	Not Provided	Provided	Provided
6	Shut off Dynamic Head (70.0 meters)	70	70	70 m	70 m
7	Water Output* (91,200 litres per day from a total head of 50 metres.	106290 liters at 50 m head	102070 liters at 50 m head	118400 liters at 50 m head	122010 Liters at 50 m head
8	Tracking	Manual	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	20.1.17, TUV	14.03.16,NISE	24.03.16, TUV	11.12.15, TUV
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	300.12	250	300W	301 W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15.66%	15.84%	15.10%	15.17%
14	Fill factor should be more than 70%.	75.10%	74.42%	76.00%	76.21%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	Not Provided	Provided	Provided
	REMARKS	--	RMS & IP54 not provided	--	--

Sr. No.	5 HP, Submersible	VRG Energy India	RBP Energy India Pvt Ltd, Raipur	SR Corporate Consultants	GK Energy	SWELECT ENERGY LIMITED	Sunrise Technology
		26	27	28	29	30	31
1	Solar PV Panels (4800 Wp)	PV Power Tech (4993 W)	Icon (4942.3 W)	Icon Solar (4716.1 W)	PV Power Tech. (4831 W)	Test Reprot in the name of HHV Solar systems submitted	Sunrise (5083 W) tested at Sunrise
2	Motor Pumpset type (5 HP with controller)	Make-VRG	Make-Shakti	Make-Shakti	Make-Kirloskar		Make-Shakti
3	Pump Type	AC	AC	AC	AC		AC
4	Controller	Make-VRG	Make-Ecozen	Make-Ecogen	Make-Kirloskar		Make-Shakti
5	Remote Monitoring System	Provided	Provided	Provided	Provided		Not Mentioned
6	Shut off Dynamic Head (70.0 meters)	100 m	70	100 m	90 m		76 m
7	Water Output* (91,200 litres per day from a total head of 50 metres.	116314 liters at 50 m head	76289.8 liters at 70 m head	67171 liters at 70 m	64290 liters at 70 m head		107204 at 50m head
8	Tracking	Continous	Continious	Continous	Continous		Electronic
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	24.12.15, UL	29.09.16 UL	29.02.16, UL	05.11.16, UL		30.11.16, EQDC, Gandhinagar
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	249.65 W	308.9	294.7 W	301W		250W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified		Not Mentioned
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified		Not Mentioned
13	The efficiency of the PV modules should be minimum 14%	15.40%	15.88%	15.10%	15.44%		14.92%
14	Fill factor should be more than 70%.	75.08%	76.87%	75.00%	76.29%		76.82%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Not Tested	Provided	Not Tested	Provided		Not Mentioned
	REMARKS	IP54 not tested	Tested at 70m head	1. Module capacity is less. 2. Tested at 70m head	Tested at 70m head	RMS, IEC compliance & IP54 not mentioned	

Sr. No.	5 HP, Submersible	Ritika Systems Pvt. Ltd.	Green Ripples Pvt. Ltd.	AVI Appliances	Rawmate Solutions	Green World Solarware	Sri Savitr Solar Pvt. Ltd.	
		34	35	36	38	39	40	
1	Solar PV Panels (4800 Wp)	Ritika (5209.67)	Icon Solar (4683 W)	Goldi Green (4982 W)	Icon (4981 W)	PV Power Tech. (4898 W)	PV Power Tech.(4898 W)	Sri Savitr Solar (4867 W)
2	Motor Pumpset type (5 HP with controller)	Make-Duke Plasto	Make-Shakti	Make-Falcon Pumps	Make-Shakti	Make-Kirloskar	Make-Shakti	Make-Suguna
3	Pump Type	AC	AC	AC	AC	AC	AC	AC
4	Controller	Make-Hermes Technologies	Make-Ecotron	Make-Hermes Technologies	Ecozen Solutions	Make-Kirloskar	Make-Ecozen	Make-ABB
5	Remote Monitoring System	Provided	Provided	Provided	Provided	Not Observed	Provided	Provided
6	Shut off Dynamic Head (70.0 meters)	70m	95	70m	100 m	90 m	90 m	70 m
7	Water Output* (91,200 litres per day from a total head of 50 metres.	131100 liters at 50 m head	73266 liters at 70m head	131100 liters at 50 m head	79687 liters at 70 m head	68804 m at 70m head	84927 liters at 70m head	97600 liters at 50 m head
8	Tracking	Manual	continuous	Manual	Continuous	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	15.02.16, TUV	29.03.16, UL	21.03.17, TUV	08.11.16, UL	01.01.16, NISE	11.04.16, NISE	27.01.17, TUV
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	306W	292 W	311 W	311 W	300 W	300W	243.35 W
11	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15.92%	15%	16.09%	16.10%	15.76%	15.76%	14.78%
14	Fill factor should be more than 70%.	76.13%	74.90%	75.95%	77%	74.81%	74.81%	74.42%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	Not tested	Provided	Provided	Not Observed	Provided	Provided

	REMARKS		1. Module capacity is less. 2. Tested at 70m head		Tested at 70m head	1. MS & IP54 not observed 2. Tested at 70m head	Tested at 70m head	--
--	----------------	--	--	--	--------------------	--	--------------------	----

7.5 HP, Submersible	Jain Irrigation		PV Powertech	Claro Energy Pvt. Ltd.			Topsun Solar	Sunrise Technology	AVI Appliances	
Requirment as per DNIT	2		10	12			20	31	36	
Solar PV Panels (6750 Wp)	Jain Irrigation (6937.1 W)		Alpex (6996.48 W)	Premeir Solar (6752W)	PV Power Tech.(7113 W)	Acknowledement submitted	Topsun (8068.5 W)	PV Power Tech (7745.6 W)	Sunrise (7619 W) tested at Sunrise	Goldi Green (7081 W)
Motor Pumpset type (7.5 HP with controller)	Shakti		Shakti	Make-Shakti	Make-Shakti			Make- Duke	Make-Shakti	Make-Falcon

						I c o n P u m p s			
Pump Type	AC	AC	AC	AC		A C	AC	AC	AC
Controller	ABB	Shakti	Make-Shakti	Make-Analogics		M a k e - H e r m e s	Make-VRG	Make-Shakti	Make-Hermes
Remote Monitoring System	Provided	Provided	Provided	Provided		P r o v i d e d	Provided	Not mentioned	Provided
Shut off Dynamic Head (100.0 meters)	97 m	100 m	150 m	70 m		1 2 5 m	130 m	119 m	100 m
Water Output* (87,750 litres per day from a total head of 70 metres.)	155156 liters at 50 m head	110105 at 70 m head	75700 liters at 100m head	161120 liters at 50 m head		1 2 7 0 0 0 l i t e r s a t 7	122671 liters at 70 m head	109155 liters at 70 m head	101040 at 70 m head

						0			
						m			
						h			
						e			
						a			
						d			
						M			
Tracking	Continuous	Manual	Electronic	Manual		a	Continuous	Electronic	Manual
						n			
						u			
						a			
						l			
Test Certificate(s) should have been issued on or after 22nd May, 2015.	04.02.2016, UL	07.09.2015, TUV	03.11.16, TUV	24.05.16, TUV		2	17.08.16, UL	12.12.16, EQDC, G. Nagar	21.03.17, TUV
						.			
						0			
						6			
						.			
						1			
						6			
						,			
						T			
						U			
						V			
The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	247.7 W	249.87 W	306W	296 W		3	258.1 W	250W	321 W
						1			
						0			
						W			
Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified	Qualified		Q	Qualified	Not mentioned	Qualified
						u			
						a			
						l			
						i			
						f			
						e			
						d			
Modules must	Qualified	Qualified	Qualified	Qualified		Q	Qualified	Not	Qualified

qualify to IEC 61730 Part I and II for safety qualification testing.						u a l i f i e d		mentioned	
The efficiency of the PV modules should be minimum 14%	15.10%	15.51%	15.74%	15.27%		1 6 . 0 5 %	15.50%	14.49%	16.67%
Fill factor should be more than 70%.	75.40%	75.27%	76.42%	75.44%		7 6 . 2 8 %	76.30%	76.49%	76.50%
The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	Provided	Provided	IP55		P r o v i d e d	Not Tested	Not mentioned	Provided
REMARKS	Tested at 50m head	--	Tested at 100m head	Tested at 50m head and shut off head is less	--	- -	IP54 not tested	RMS, IEC compliance & IP54 not mentioned	--

	10 HP, Submersible	Jain Irrigations	Shakti Pumps	Lohia Sales	P r e m e i r S o l a	Claro Energy Pvt. Ltd.	Topsun Solar
--	---------------------------	-------------------------	---------------------	--------------------	---	-------------------------------	---------------------

	Requirment as per DNIT	2	8	9	r 1 1	12	20		
1	Solar PV Panels (9000 Wp)	Jain Irrigation, 9313.3 Wp,	Jain Irrigation, 9313.3 Wp,	Mundra Solar (9088.97 W)	P Acknowledement submitted	Premeir Solar (9207W)	PV Power Tech. (9205 W)	Icon Solar (8965.25 W)	Topsun (10540 W)
2	Motor Pumpset type (10 HP with controller)	Shakti	Shakti	Shakti	S h	Shakti	Make-Shakti	Make-PGS	Make-Falcon
3	Pump Type	AC	AC	AC	A C	AC	AC	AC	AC
4	Controller	ABB	ABB	Shakti	S h	Shakti	Make-Schneider	Make-Novus Green	Make-Hermes
5	Remote Monitoring System	Provided	Provided	Provided	P r	Provided	Provide d	Provided	Provided
6	Shut off Dynamic Head (100.0 meters)	150 m	150 m	100 m	1 0	150 m	70 m	116	110
7	Water Output* (117000 litres per day from a total head of 70 metres.)	102114.1 liters at 100 m head	143065 lit. at 70 m head	148900 liters at 70m head	1 4	115500 liters at 100m head	196000 liters at 50 m head	123811 at 70m head	190900 at 70 m head
8	Tracking	Continuous	Continuous	Manual	M	Electronic	Manual	Manual	Manual
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	07.10.2016, UL	21.10.2016	11.04.2017, TUV	0 2	03.11.16, TUV	18.03.16, TUV	18.04.17, SiTarc	21.06.16, TUV
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	310 W	310.4 W	302.97 W	3 0	306 W	306 W	298.84 W	310W
11	Modules supplied with the SPV	Qualified	Qualified	Qualified	Q u	Qualified	Qualifie d	Qualified	Qualified

	water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/Standards.								
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified
13	The efficiency of the PV modules should be minimum 14%	15.81%	15.81%	15.46%	15.75%	15.81%	15.42%	16.05%	
14	Fill factor should be more than 70%.	75.83%	75.83%	75.47%	76.36%	75.80%	76.01%	76.25%	
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Provided	Provided	Provided	Provided	IP 65	Provided	Provided	
	REMARKS	Tested at 100m head	--	--	--	--	IP65 tested	Modules are of less wattage	--

	2HP, Surface	Central Electronics Ltd.	Shakti Pumps	Premeir Solar	Novus Green	RBP Energy India Pvt Ltd, Raipur	Rotomag Motors and Controls
	Requirment as per DNIT	3	8	11	16	27	33
1	Solar PV Panels (1800 Wp)	CEL(1785 W)	PV Power Tech. (1775 W)	Premier Solar (1939 W)	Acknowledgement Submitted, SiTarc	Acknowledgement submitted	Premier Solar (1946 W)
2	Motor Pumpset type (2HP)	Make-Rotomag	Make-Shakti	Make-Rotomag			Make-Rotomag
3	Pump Type	DC	DC	DC			DC
4	Controller	Make-Rotomag	Make-Shakti	Make-Rotomag			Make-Rotomag
5	Shut off Dynamic Head (12.0 meters)	12m	12 m	21 m			21 m
6	Water Output* (180,000 litres per day from a total head of 10 metres.)	185132 liters at 10m head	187666 liters at 10 m head	194487 liters at 10 m head			196920 at 10m head
7	Tracking	Manual	Manual	Manual			Manual
8	Test Certificate(s) should have been issued on or after 22nd May, 2015.	29.04.16, NISE	11.04.2016, NISE	25.03.16, SiTarc			25.03.16, SiTarc
9	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	300 W	300W	323W			324 W
10	Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards.	Qualified	Qualified	Qualified			Qualified
11	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified			Qualified

12	The efficiency of the PV modules should be minimum 14%	15.31%	15.33%	16.54%			16.63%
13	Fill factor should be more than 70%.	75.80%	75.01%	76%			75.74%
14	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	Not Provide	Provided	Provided			Provided
	REMARKS	1. Module capacity is less 2. IP54 not provided	Module capacity is less	--	--	--	--

	2HP,Submersible	Central Electronics Ltd.	Shakti Pumps	Claro Energy Pvt. Ltd.	Novus Green			Savan Electronics	TATA Power	Rotomag Motors and Controls	
	Requirement as per DNIT	3	8	12	16			18	24	33	
1	Solar PV Panels (1800 Wp)	CEL (1789W)	PV Power Tech. (1789.45)	Premier Solar (1807 W)	PV Power Tech. (1807 W)	PV Power Tech. (1842 W)	Icon Solar (1811 W)	Access Solar (1840.18 W)	TATA (1821.74 W)	Acknowledgement submitted	Premier Solar (180 W)
2	Motor Pumpset type (2HP with controller)	Make-Lorentz	Make-Shakti	Make-Rotomag	Make-Shakti	Make-Rotomag	Make-Shakti	Make-Suguna Motors and Pumps with built in controller	Make-Rotomag		Make-Rotomag
3	Pump Type	DC	DC	DC	DC	DC	DC	DC	DC		DC
4	Controller	Make-Lorentz	Make-Shakti	Make-Rotomag	Make-Shakti	Make-Rotomag	Make-Shakti	Make-Suguna Pumps with built in controller	Make-Rotomag		Make-Rotomag
5	Remote Monitoring System	Provided	Provided	Provided	Provided	Provided	Provided	Not Provided	Provided		Provided
6	Shut off Dynamic Head (45.0 m)	45	45 m	45 m	45 m	45	55 m	50 m	45 m		60 m
7	Water Output* (63,000 litres per day from a total head of 30 m.	71200 liters at 30m head	73750 liters at 30m head	63200 liters at 30m head	64780 liters at 30 m head	64500 liters at 30m head	71539 at 30 m head	67375 at 30m head	63800 liters at 30 m head		64338 at 30 m head
8	Tracking	Manual		Manual	Manual	Manual	Continuous	Continuous	Manual		Continuous
9	Test Certificate(s) should have been issued on or after 22nd May, 2015.	20.11.15, TUV	18.02.2016, TUV	30.12.15, TUV	18.03.16, TUV	17.10.16, TUV	19.06.17, UL	21.04.2017, UL	09.03.17, TUV		07.01.2015, UL
10	The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak	298W	298 W	301W	301 W	307 W	301.86 W	306.69 W	303.62 W		300.85 W
11	Modules supplied with the SPV water pumping systems should	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified		Qualified

	have certificate as per IEC 61215 specifications or equivalent National or International/Standards.										
12	Modules must qualify to IEC 61730 Part I and II for safety qualification testing.	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified		Qualified
13	The efficiency of the PV modules should be minimum 14%	15.32%	15.39%	15.50%	15.52%	15.82%	15.54%	15.49%	15.28%		15.48%
14	Fill factor should be more than 70%.	75.10%	74.84%	77.05%	75.05%	75.95%	79.69%	75.70%	76.56%		76.55%
15	The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection	IP65	Provided	Provided	Provided	Provided	Provided	Not Tested	Provided		Not Tested
	REMARKS	1. Modules capacity is less 2. IP65 tested	Module capacity is less	--	--	--	--	1. RMS not provided 2. IP54 not tested	--	--	1. test report issued before 22.05.15 2. IP54 not tested