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Annex1：The electric data of Crystaline Module

Type Name or Model No.....	CHSM72M-HC-xxx (mono 144 cells)		CHSM60M-HC-xxx (mono 120 cells)	
Maximµm System Voltage [VDC]	1500		1500	
Rated Maximµm Power [W].....	390, 395, 400, 405, 410, 415, 420, 425, 430, 435, 440, 445, 450, 455	520, 525, 530, 535, 540, 545, 550,555,560,565, 570	325, 330,335, 340, 345,350, 355, 360, 365, 370,375, 380	585,590,595,600,605,610, 615
Rated Short Circuit Current [A].....	10.10, 10.17, 10.24, 10.31, 10.38, 10.45, 10.52, 11.03, 11.10, 11.16, 11.24, 11.30, 11.37, 11.44	13.34, 13.43, 13.52, 13.61, 13.72, 13.81, 13.90,13.98,14.07,14.16, 14.25	10.06,10.14,10.22,10.30, 10.38, 10.46,11.15, 11.21, 11.29, 11.35, 11.42, 11.49	18.37,18.42,18.47,18.52, 18.57,18.62,18.67
Rated Open Circuit Voltage [V].....	48.70, 48.98, 49.25, 49.53, 49.80, 50.06,50.32, 47.73, 47.99,48.25,48.50, 48.80,49.05,49.35	48.90, 49.10, 49.30, 49.50, 49.70, 49.90, 50.10,50.30,50.50,50.70, 50.90	41.03, 41.32, 41.61, 41.88, 42.16, 42.44, 39.80, 40.14, 40.41, 40.75, 41.05, 41.34,	40.90,41.10,41.30,41.50, 41.70,41.90,42.10
Operating rated curreng [A].....	9.56, 9.62, 9.68, 9.74, 9.80, 9.86, 9.92, 10.56, 10.63, 10.70, 10.77, 10.84, 10.89, 10.96	12.65, 12.72, 12.79, 12.86, 12.93, 13.00, 13.06, 13.13, 13.20, 13.26, 13.33	9.58, 9.66, 9.73, 9.80, 9.87, 9.94, 10.68, 10.75, 10.82, 10.89, 10.94, 11.01	17.31, 17.36, 17.40, 17.45, 17.50, 17.54, 17.58
Rated operating voltage [V].....	40.81, 41.07, 41.32, 41.59, 41.85, 42.11, 42.35, 40.25, 40.45, 40.65, 40.85, 41.05, 41.32, 41.51	41.09, 41.26, 41.43, 41.60, 41.76, 41.93, 42.10, 42.27, 42.44, 42.61, 42.77	33.93, 34.17, 34.44, 34.69, 34.96, 35.22, 33.24, 33.49, 33.73, 33.98, 34.28, 34.51	33.80, 34.00, 34.20, 34.40, 34.60, 34.80, 35.00
Tolerance of Rating Pmax / Isc / Voc [%].....	3 / 5 / 3		3 / 5 / 3	
Over-current protection rating[A]:	15/20	25	15/20	30
Classification (IEC 61730).....	Class II		Class II	
Fire rating.....	Type1		Type1	
Nominal Module operating temperature(NMOT).....	41℃		41℃	
Dimensions (l x w x h) [mm].....	2018x1002x40 (45/35/30) 2108x1048x40 (45/35/30) 2094×1038x40 (45/35/30) 2008x1002x35(30)	2256x1133x35/30 2279x1134x35/30 2278x1134x35/30	1692 x1002 x35/ 1684x1002x35 1765 x1048 x35/ 1755x1038x35	2172x1303 x35
Module area [m²].....	2.02/2.21/2.17/2.01	2.56/2.58	1.70/1.69/1.85/1.82	2.83
Min- creepage distance [mm].....	10.4		10.4	
Nµmber of solar cells	144		120	
Cells per bypass diode	48		40	
Serial/parallel connection of cells	SP		SP	
Coefficient of cells α [%/°C]	0.04%/℃		0.04%/℃	
Coefficient of cells β [%/°C]	-0.25%/℃		-0.25%/℃	

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	γ [%/°C]	-0.34%/℃		-0.34%/℃
Type Name or Model No.....		CHSM72M-GH-xxx (6" mono 144cells)		CHSM60M-GH-xxx (6" mono 120cells)
Maximum System Voltage [VDC]		1500		1500
Rated Maximum Power [W].....		385,390,395,400,405,410,415,420,425,430, 435,440,445,450		320,325,330,335,340,345,350,355,360,365,370,375
Rated Short Circuit Current [A].....		10.06 ,10.14 ,10.22 ,10.30, 10.38,10.46 ,10.54 ,10.62,10.97,11.06, 11.12,11.20,11.25,11.30		9.93 ,10.00 ,10.07 ,10.14,10.21,10.28, 10.35,11.06,11.12,11.20,11.25,11.30
Rated Open Circuit Voltage [V].....		47.70,47.88,48.06,48.24,48.60,48.68,48.96,48.43,48.60, 48.90,49.11,49.44,49.78		40.23 ,40.42,40.61,40.80,40.99,41.18,41.37,40.12, 40.47,40.74,41.11,41.48
Operating rated curreng [A].....		9.63, 9.70, 9.77, 9.84, 9.91, 9.98, 10.05, 10.12, 10.54, 10.59, 10.65, 10.70, 10.76, 10.82		9.49, 9.57, 9.65, 9.73, 9.81, 9.89, 9.97, 10.59, 10.65, 10.70, 10.76, 10.82
Rated operating voltage [V].....		39.98, 40.21, 40.44, 40.67, 40.89, 41.10, 41.31, 41.52, 40.32, 40.60, 40.85, 41.12, 41.36, 41.59		33.73, 33.97, 34.21, 34.44, 34.67, 34.90, 35.13, 33.52, 33.80, 34.11, 34.39, 34.66
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3		3 / 5 / 3
Over-current protection rating[A]:		25		25
Classification (IEC 61730).....		Class II		Class II
Fire rating.....		Type 4		Type 4
Nominal Module operating temperature(NMOT).....		41℃		41℃
Dimensions (l x w x h) [mm].....		2018 x1002 x40(35)		1692 x1002 x35
Module area [m²].....		2.02		1.70
Min- creepage distance [mm].....		10.4		10.4
Number of solar cells		144		120
Cells per bypass diode		48		40
Serial/parallel connection of cells		SP		S
Coefficient of cells	α[%/°C]	0.04%/℃		0.04%/℃
	β[%/°C]	-0.25%/℃		-0.25%/℃
	γ[%/°C]	-0.34%/℃		-0.34%/℃
Type Name or Model No.....		CHSM66M-HC-xxx (mono 132 cells)		
Maximum System Voltage [VDC]		1500		
Rated Maximum Power [W].....		410, 415,420	475,480, 485, 490, 495, 500,505	645,650,655,660,665,670,675
Rated Short Circuit Current [A].....		11.41, 11.49,11.60	13.31,13.41, 13.50, 13.60,	18.38,18.43,18.48,18.53,18.58,18.63,18.68

		13.71, 13.81,13.90	
Rated Open Circuit Voltage [V].....	44.89, 45.18,45.47	44.78,44.98, 45.18, 45.38, 45.58, 45.78,45.98	45.08,45.28,45.48,45.68,45.88,46.08,46.28
Operating rated curreng [A].....	10.92, 11.01, 11.09	12.62, 12.70, 12.78, 12.85, 12.92, 13.00, 13.07	17.32, 17.36, 17.41, 17.45, 17.50, 17.54, 17.58
Rated operating voltage [V].....	37.39, 37.57, 37.76	37.63, 37.79, 37.96, 38.13, 38.30, 38.47, 38.63	37.25, 37.45, 37.65, 37.85, 38.05, 38.23, 38.42
Tolerance of Rating Pmax / Isc / Voc [%].....	3 / 5 / 3		3 / 5 / 3
Over-current protection rating[A]:	20	25	30
Classification (IEC 61730).....	Class II		Class II
Fire rating.....	Type 1		Type 1
Nominal Module operating temperature(NMOT)	41℃		41℃
Dimensions (l x w x h) [mm].....	2096x1038x35(30)	2073x1133x35 2094x1134x35	2384x1303 x35
Module area [m²].....	2.18	2.35/2.37	3.11
Min- creepage distance [mm].....	10.4		10.4
Nµmber of solar cells	132		132
Cells per bypass diode	44		44
Serial/parallel connection of cells	SP		SP
Coefficient of cells α[%/°C]	0.04%/℃		0.04%/℃
Coefficient of cells β[%/°C]	-0.25%/℃		-0.25%/℃
Coefficient of cells γ[%/°C]	-0.34%/℃		-0.34%/℃
Type Name or Model No.....	CHSM78M-HC-xxx (mono 156 cells)		CHSM78M-HC-xxx (mono 156 cells)
Maximµm System Voltage [VDC]	1500		1500
Rated Maximµm Power [W].....	480,485,490,495,500		565,570,575,580,585,590,595,600,605
Rated Short Circuit Current [A].....	11.29,11.36,11.44,11.52,11.61		13.35,13.43,13.52,13.60,13.68,13.77,13.85,13.93,14.01
Rated Open Circuit Voltage [V].....	53.17,53.46,53.75,54.04,54.32		53.04,53.24,53.44,53.64,53.84,54.04,54.24,54.44,54.64
Operating rated	10.81, 10.88, 10.95, 11.03, 11.11		12.68, 12.74, 12.80, 12.87, 12.93, 12.99, 13.05, 13.11,

curreng [A].....			13.18
Rated operating voltage [V].....		44.41, 44.58, 44.75, 44.92, 45.12	44.57, 44.74, 44.91, 45.08, 45.25, 45.41, 45.58, 45.75, 45.92
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 1	Type 1
Nominal Module operating temperature(NMOT)		41℃	41℃
Dimensions (l x w x h) [mm].....		2266 x 1038 x 35	2465 x 1134 x 35
Module area [m²].....		2.352	2.8
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		120	156
Cells per bypass diode		52	52
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.04%/℃	0.04%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.34%/℃	-0.34%/℃
Type Name or Model No.....		CHSM60M-HC-xxx (mono 120 cells)	CHSM60N-HC-xxx (mono 120 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		430,435,440,445,450,455,460,465,470,475	450,455,460,465,470,475,480, 485, 490,495,500,505
Rated Short Circuit Current [A].....		13.27,13.38,13.48,13.59,13.71,13.81,13.91,13.98,14.10, 14.20	13.60,13.71,13.81,13.91,14.01,14.11,14.21, 14.31, 14.37,14.45,14.53,14.60
Rated Open Circuit Voltage [V].....		40.65,40.85,41.05,41.25,41.45,41.65,41.85,42.05,42.25, 42.45	41.35,41.55,41.75,41.95,42.15,42.35,42.55, 42.75,42.95,43.15,43.35,43.55
Operating rated curreng [A].....		12.59, 12.67, 12.76, 12.84, 12.92, 13.00, 13.08, 13.16, 13.24, 13.32	12.95, 13.03, 13.11, 13.19, 13.27, 13.35, 13.42, 13.50, 13.58, 13.65, 13.73, 13.80
Rated operating voltage [V].....		34.16, 34.33, 34.50, 34.66, 34.83, 35.00, 35.17, 35.34, 35.50, 35.67	34.75, 34.92, 35.08, 35.25, 35.42, 35.59, 35.76, 35.92, 36.09, 36.26, 36.43, 36.60
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3

Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 1	Type 4
Nominal Module operating temperature(NMOT).....		41℃	41±2℃
Dimensions (l x w x h) [mm].....		1903x1134x30/35	1903x1134x30/35
Module area [m²].....		2.16	2,16
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		120	120
Cells per bypass diode		40	40
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.04%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.34%/℃	-0.29%/℃
Type Name or Model No.....		CHSM54M-HC-xxx (mono 108 cells)	CHSM54M-GH-xxx (mono 108 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		390,395,400,405,410,415,420,425	390,395,400,405
Rated Short Circuit Current [A].....		13.40,13.52,13.65,13.76,13.88,13.99,14.10,14.21	13.33,13.43,13.54,13.66
Rated Open Circuit Voltage [V].....		36.60,36.80,37.00,37.20,37.40,37.60,37.80,38.00	36.80,37.00,37.20,37.40
Operating rated curreng [A].....		12.68, 12.77, 12.86, 12.96, 13.05, 13.13, 13.22, 13.31	12.61, 12.70, 12.80, 12.89
Rated operating voltage [V].....		30.76, 30.92, 31.09, 31.26, 31.43, 31.60, 31.76, 31.93	30.92, 31.09, 31.26, 31.43
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	30
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 1	Type 4
Nominal Module operating temperature(NMOT).....		41℃	41℃
Dimensions (l x w x h) [mm].....		1708 x 1133 x 30/35	1708 x 1133 x 30mm

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Module area [m²]		1.94	1.94
Min- creepage distance [mm]		10.4	10.4
Number of solar cells		108	108
Cells per bypass diode		36	36
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.04%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.34%/℃	
Type Name or Model No.		CHSM72M-GH-xxx (mono 144cells)	CHSM72M-TH-xxx (mono 144 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W]		515, 520, 525, 530, 535, 540, 545	385,390,395,400,405,410,415
Rated Short Circuit Current [A]		13.28, 13.32, 13.40, 13.48, 13.57, 13.66,13.75	10.05,10.13,10.21,10.29,10.37,10.45,10.53
Rated Open Circuit Voltage [V]		48.90, 49.10, 49.30, 49.50, 49.70, 49.90, 50.10	47.80,47.98,48.16,48.34,48.52,48.70,48.88
Operating rated curreng [A]		12.53, 12.60, 12.67, 12.74, 12.81, 12.88, 12.95	9.57, 9.64, 9.71, 9.78, 9.85, 9.92, 9.99
Rated operating voltage [V]		41.09, 41.26, 41.43, 41.60, 41.76, 41.93, 42.10	40.23, 40.46, 40.69, 40.92, 41.13, 41.34, 41.55
Tolerance of Rating Pmax / Isc / Voc [%]		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		30	25
Classification (IEC 61730)		Class II	Class II
Fire rating		Type 4	Type 4
Nominal Module operating temperature(NMOT)		41℃	41℃
Dimensions (l x w x h) [mm]		2256x1133x35mm 2285x1134x35mm 2278x1134x35mm	2018 x1002 x40(35)
Module area [m²]		2.56 / 2.59	2.02
Min- creepage distance [mm]		10.4	10.4
Number of solar cells		144	144
Cells per bypass diode		48	48
Serial/parallel connection of cells		SP	SP

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Coefficient of cells	α[%/°C]	0.04%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.34%/℃	
Type Name or Model No.....		CHSM55M-HC-xxx (mono 110 cells)	CHSM50M-HC-xxx (mono 100 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		530,535,540,545,550,555,560,565	480,485,490,495,500,505,510,515
Rated Short Circuit Current [A].....		18.25,18.31,18.37,18.43,18.49,18.55,18.61,18.67	18.22,18.27,18.32,18.37,18.42,18.47,18.52,18.57
Rated Open Circuit Voltage [V].....		37.09,37.32,37.55,37.78,38.01,38.24,38.49,38.75	33.68,33.68,34.08,34.28,34.48,34.68,34.88,35.08
Operating rated curreng [A].....		17.18, 17.23, 17.29, 17.35, 17.41, 17.46, 17.51, 17.56	17.15, 17.20, 17.25, 17.31, 17.36, 17.41, 17.46, 17.51
Rated operating voltage [V].....		30.85, 31.06, 31.26, 31.42, 31.62, 31.80, 32.04, 32.22	28.01, 28.21, 28.41, 28.61, 28.81, 29.01, 29.21, 29.42
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		30	30
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 1	Type 1
Nominal Module operating temperature(NMOT).....		41℃	41℃
Dimensions (l x w x h) [mm].....		2384*1096*35	2172*1096*35
Module area [m²].....		2.613	2.38
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		110	100
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.04%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.34%/℃	
Type Name or Model No.....		CHSM66N-HC-xxx (mono 132 cells)	CHSM60N-HC-xxx (mono 120 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		655,660,665,670,675,680,685,690,695	595,600,605,610,615,620,625,630,635

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Rated Short Circuit Current [A].....		17.64,17.72,17.80,17.88,17.96,18.03,18.11,18.19,18.27	17.60,17.68,17.77,17.85,17.94,18.02,18.10,18.19,18.27
Rated Open Circuit Voltage [V].....		46.36,46.56,46.76,46.96,47.17,47.37,47.57,47.78,47.98	42.21,42.41,42.61,42.82,43.02,43.22,43.43,46.63,43.83
Operating rated curreng [A].....		17.03, 17.08, 17.14, 17.19, 17.24, 17.30, 17.35, 17.40, 17.46	16.99, 17.05, 17.11, 17.17, 17.23, 17.28, 17.34, 17.40, 17.46
Rated operating voltage [V].....		38.47, 38.64, 38.81, 38.97, 39.14, 39.31, 39.48, 39.65, 39.82	35.03, 35.20, 35.36, 35.53, 35.70, 35.87, 36.04, 36.21, 36.38
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		30	30
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Dimensions (l x w x h) [mm].....		2384x1303 x35	2172 x 1303 x 35
Module area [m²].....		3.11	2.83
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		132	120
Serial/parallel connection of cells		44	40
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	
Type Name or Model No.....		CHSM78N-HC-xxx (mono 156 cells)	CHSM72N-HC-xxx (mono 144 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		585,590,595,600,605,610,615,620,625,630,635,640,645,650,655	550,555,560,565,570,575, 580,585,590,595,600,605
Rated Short Circuit Current [A].....		13.54,13.62,13.70,13.78,13.86,13.95,14.03,14.11,14.19,14.27,14.35,14.43,14.51,14.59,14.67	13.70,13.80,13.90,14.00,14.10,14.20, 14.30,14.40,14.50,14.60,14.69,14.79
Rated Open Circuit Voltage [V].....		54.02,54.22,54.42,54.62,54.82,55.02,55.22,55.42,55.62,55.82,56.02,56.22,56.42,56.62,56.82	50.25,50.40,50.55,50.70,50.85,51.00, 51.15,51.30,51.45,51.60,51.75,51.90
Operating rated curreng [A].....		13.10, 13.17, 13.23, 13.29, 13.35, 13.42, 13.48, 13.54, 13.60, 13.66, 13.72, 13.77, 13.83, 13.89, 13.95	13.13, 13.21, 13.29, 13.37, 13.45, 13.53, 13.61, 13.68, 13.76, 13.84, 13.91, 13.99
Rated operating voltage [V].....		44.64, 44.81, 44.98, 45.14, 45.31, 45.47, 45.64, 45.80, 45.97, 46.13, 46.30, 46.46, 46.63, 46.79, 46.96	41.88, 42.00, 42.13, 42.25, 42.38, 42.50, 42.63, 42.75, 42.88, 43.00, 43.13, 43.25
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25

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Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Dimensions (l x w x h) [mm].....		2465x1134 x35	2278x1134x35/30
Module area [m²].....		2.80	2.58
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		156	144
Cells per bypass diode		52	48
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	
Type Name or Model No.....		CHSM54N-HC-xxx (mono 108 cells)	CHSM60M-TH-xxx (mono 120 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		405,410,415,420,425,430,435, 440,445,450,455	320,325,330,335,340,345
Rated Short Circuit Current [A].....		13.54, 13.65, 13.76, 13.87, 13.98, 14.09, 14.19, 14.30, 14.41, 14.51, 14.62	9.86 ,9.93 ,10.00 ,10.07 ,10.14 ,10.21
Rated Open Circuit Voltage [V].....		37.40, 37.60, 37.80, 38.00, 38.20, 38.40, 38.60, 38.80, 39.00, 39.20, 39.40	40.44 ,40.63 ,40.82 ,41.01 ,41.20,41.39
Operating rated curreng [A].....		12.89, 12.98, 13.06, 13.15, 13.24, 13.33, 13.41, 13.49, 13.58, 13.66, 13.74	9.44, 9.52, 9.60, 9.68, 9.76, 9.84
Rated operating voltage [V].....		31.43, 31.60, 31.76, 31.93, 32.10, 32.27, 32.44, 32.61, 32.77, 32.94, 33.11	33.91, 34.15, 34.39, 34.62, 34.85, 35.08
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Dimensions (l x w x h) [mm].....		1722x1134 x30/35	1692 x1002 x35
Module area [m²].....		1.95	1.70
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		108	12O

Cells per bypass diode		36	40
Nominal Module operating temperature(NMOT)		41±2℃	41℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.04%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.34%/℃
Type Name or Model No.....		CHSM72RN-HC-xxx (mono 144 cells)	CHSM54RN-HC-xxx (mono 108 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		590,595,600,605,610,615,620	450,455,460,465
Rated Short Circuit Current [A].....		14.50,14.56,14.65,14.71,14.79,14.86,14.94	14.73,14.83,14.94,15.04
Rated Open Circuit Voltage [V].....		51.00,51.20,51.40,51.60,51.80,52.00,52.20	38.50,38.70,38.90,39.10
Operating rated curreng [A].....		13.77, 13.83, 13.89, 13.95, 14.01, 14.07, 14.13	13.91, 13.99, 14.07, 14.15
Rated operating voltage [V].....		42.86, 43.03, 43.19, 43.36, 43.53, 43.70, 43.87	32.35, 32.52, 32.69, 32.86
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Nominal Module operating temperature(NMOT).....		41±2℃	41±2℃
Dimensions (l x w x h) [mm].....		2384x1134x35/30 2382x1134x35/30 2380x1134x35/30	1800x1134 x30/35
Module area [m²].....		2.70	2.04
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		144	108
Cells per bypass diode		48	36
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃

	γ[%/°C]	-0.29%/℃	-0.29%/℃	
Type Name or Model No.....		CHSM66RN-HC-xxx (mono 132 cells)	CHSM72M(BLH)-HC-xxx (mono 144 cells)	CHSM72M(BL)-HC-xxx (mono 144 cells)
Maximμm System Voltage [VDC]		1500	1500	1000
Rated Maximμm Power [W].....		595,600,605,610,615,620,625,630,635	520, 525, 530, 535, 540, 545	
Rated Short Circuit Current [A].....		16.06, 16.12, 16.18, 16.24, 16.30, 16.36, 16.42, 16.48, 16.54	13.34, 13.43, 13.52, 13.61, 13.72, 13.81	
Rated Open Circuit Voltage [V].....		47.23, 47.43, 47.64, 47.84, 48.04, 48.24, 48.44, 48.64, 48.84	48.90, 49.10, 49.30, 49.50, 49.70, 49.90	
Operating rated curreng [A].....		14.91, 14.97, 15.03, 15.09, 15.15, 15.21, 15.27, 15.33, 15.30	12.65, 12.72, 12.79, 12.86, 12.93, 13.00	
Rated operating voltage [V].....		39.91, 40.08, 40.26, 40.43, 40.60, 40.77, 40.93, 41.10, 41.51	41.09, 41.26, 41.43, 41.60, 41.76, 41.93	
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3	
Over-current protection rating[A]:		30	25	
Classification (IEC 61730).....		Class II	Class II	
Fire rating.....		Type 4	Type 35	
Nominal Module operating temperature(NMOT).....		41±2℃	41℃	
Dimensions (l x w x h) [mm].....		2382x1134x35/30	2278x1134x35/30	
Module area [m²].....		2.70	2.58	
Min- creepage distance [mm].....		10.4	10.4	
Nμmber of solar cells		132	144	
Cells per bypass diode		44	48	
Serial/parallel connection of cells		SP	SP	
Coefficient of cells	α[%/°C]	0.043%/℃	0.04%/℃	
	β[%/°C]	-0.25%/℃	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	-0.34%/℃	
Type Name or Model No.....		CHSM54RNs-HC-xxx (mono 108 cells)	CHSM54RNs(BLH)-HC	CHSM54RNs(BL)-HC
Maximμm System Voltage [VDC]		1500	1500	1000
Rated Maximμm Power [W].....		430,435,440,445,450,455,460,465	425,430,435,440,445,450,455	
Rated Short Circuit Current [A].....		14.00,14.09,14.18,14.26,14.35,14.44,14.52,14.60	13.83,13.92,14.01,14.10,14.19,14.28,14.36	

Rated Open Circuit Voltage [V].....		38.40,38.60,38.80,39.00,39.20,39.40,39.60,39.80	38.40,38.60,38.80,39.00,39.20,39.40,39.60
Operating rated curreng [A].....		13.33, 13.41, 13.49, 13.58, 13.66, 13.74, 13.82, 13.90	13.06, 13.15, 13.23, 13.31, 13.40, 13.48, 13.56
Rated operating voltage [V].....		32.27, 32.44, 32.61, 32.77, 32.94, 33.11, 33.28, 33.45	32.54, 32.71, 32.88, 33.05, 33.22, 33.39, 33.56
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Nominal Module operating temperature(NMOT).....		41±2℃	41±2℃
Dimensions (l x w x h) [mm].....		1762x1134x30/35	1762x1134x30/35
Module area [m²].....		2.00	2.00
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells		108	108
Cells per bypass diode		36	36
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM72RN(BLH)-HC-xxx (mono 144 cells)	CHSM54RN(BLH)-HC-xxx (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		580,585,590,595,600,605	435,440,445,450
Rated Short Circuit Current [A].....		14.29, 14.36, 14.44, 14.51, 14.59, 14.65	14.41,14.52,14.62,14.73
Rated Open Circuit Voltage [V].....		50.80, 51.00, 51.20, 51.40, 51.60, 51.80	37.90,38.10,38.30,38.50
Operating rated curreng [A].....		13.59, 13.65, 13.71, 13.78, 13.84, 13.90	13.66, 13.74, 13.83, 13.91
Rated operating voltage [V].....		42.69, 42.86, 43.03, 43.19, 43.36, 43.53	31.85, 32.02, 32.18, 32.35
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25

Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Nominal Module operating temperature(NMOT).....		41±2℃	41±2℃
Dimensions (l x w x h) [mm].....		2384x1134x35/30 2382x1134x35/30	1800x1134 x30/35
Module area [m²].....		2.70	2.04
Min- creepage distance [mm].....		10.4	10.4
Nµmber of solar cells		144	108
Cells per bypass diode		48	36
Serial/parallel connection of cells		SP	SP
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM72N(BLH)-HC-xxx (mono 144 cells)	CHSM54N(BLH)-HC-xxx (mono 108 cells)
Maximµm System Voltage [VDC]		1500	1500
Rated Maximµm Power [W].....		545,550,555,560,565,570,575,580	410,415,420,425,430,435,440
Rated Short Circuit Current [A].....		13.32, 13.38, 13.45, 13.51, 13.57, 13.63, 13.70, 13.76	13.65,13.76,13.87,13.98,14.09,14.19,14.30
Rated Open Circuit Voltage [V].....		51.37, 51.58, 51.79, 52.00, 52.21, 52.42, 52.62, 52.83	37.60,37.80,38.00,38.20,38.40,38.60,38.80
Operating rated curreng [A].....		12.83, 12.88, 12.93, 12.97, 13.02, 13.07, 13.12, 13.16	12.98, 13.06, 13.15, 13.24, 13.33, 13.41, 13.49
Rated operating voltage [V].....		42.48, 42.71, 42.93, 43.16, 43.39, 43.61, 43.83, 44.06	31.60, 31.76, 31.93, 32.10, 32.27, 32.44, 32.61
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	3 / 5 / 3
Over-current protection rating[A]:		25	25
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 4	Type 4
Dimensions (l x w x h) [mm].....		2278x1134x35/30	1722x1134 x30/35
Module area [m²].....		2.58	1.95
Min- creepage distance [mm].....		10.4	10.4

Number of solar cells		144	108
Cells per bypass diode		48	36
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM66N-GH-xxx (mono 132 cells)	
Maximum System Voltage [VDC]		1500	
Rated Maximum Power [W].....		675,680,685,690,695,700,705,710	
Rated Short Circuit Current [A].....		17.68, 17.75, 17.82, 17.89, 17.97, 18.04, 18.11, 18.19	
Rated Open Circuit Voltage [V].....		47.81, 47.96, 48.11, 48.26, 48.41, 48.56, 48.71, 48.86	
Operating rated curreng [A].....		16.86, 16.93, 17.00, 17.07, 17.14, 17.21, 17.28, 17.35	
Rated operating voltage [V].....		40.03, 40.16, 40.29, 40.42, 40.55, 40.68, 40.81, 40.94	
Tolerance of Rating Pmax / Isc / Voc [%].....		3 / 5 / 3	
Over-current protection rating[A]:		30	
Classification (IEC 61730).....		Class II	
Fire rating.....		Type 4	
Dimensions (l x w x h) [mm].....		2384x1303 x35	
Module area [m²].....		3.11	
Min- creepage distance [mm].....		10.4	
Number of solar cells		132	
Cells per bypass diode		44	
Nominal Module operating temperature(NMOT)		41±2℃	
Coefficient of cells	α[%/°C]	0.043%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	

Pmp ~ Ima are measured under STC (irradiance = 1000 mW/cm^2 , AM = 1.5, and cell temperature = 25°C)

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Annex2：The electric data of Bifacial PV Module

Type Name or Model No.....	CHSM72M(DG)/F-BH-xxx (mono 144cells)		CHSM60M(DG)/F-BH-xxx (mono 120cells)	
Maximum System Voltage [VDC]	1500		1500	
Rated Maximum Power [W].....	365, 370, 375, 380, 385, 390, 395, 400, 405, 410, 415,420,425,430,435, 440,445,450	515, 520, 525, 530, 535,540,545,550,555, 560	305, 310, 315, 320, 325, 330,335,340,345,350,355, 360,365,370,375	580,585,590,595, 600,605,610
Rated Short Circuit Current [A].....	9.74, 9.82, 9.90, 9.98, 10.06, 10.14, 10.22, 10.30, 10.38, 10.46, 10.54,10.90,10.97,11.06, 11.12,11.20,11.25,11.30,	13.28, 13.32, 13.40, 13.48, 13.57, 13.66, 13.75,13.84,13.89, 13.98	9.72, 9.79, 9.86,9.93, 10.00, 10.07, 10.14, 10.21,10.92,10.99, 11.06,11.12,11.20, 11.25,11.30	18.21,18.26, 18.31,18.36, 18.41,18.46, 18.51
Rated Open Circuit Voltage [V].....	46.98, 47.16, 47.34, 47.52, 47.70, 47.88, 48.06, 48.24, 48.42, 48.60, 48.78,48.17, 48.43,48.60,48.90, 49.11,49.44,49.78	48.90, 49.10, 49.30, 49.50, 49.70, 49.90, 50.10,50.30,50.50, 50.70	39.66, 39.85, 40.04, 40.23, 40.42, 40.61, 40.80,40.99,39.49, 39.81,40.12,40.47, 40.74,41.11,41.48	40.90,41.10, 41.30,41.50, 41.70,41.90, 42.10
Operating rated curreng [A].....	9.34, 9.42, 9.49, 9.56, 9.63, 9.70, 9.77, 9.84, 9.91, 9.98, 10.05, 10.12, 10.54, 10.59, 10.65, 10.70, 10.76, 10.82	12.53, 12.60, 12.67, 12.74, 12.81, 12.88, 12.95, 13.01, 13.08, 13.14	9.25, 9.33, 9.41, 9.49, 9.57, 9.65, 9.73, 9.81, 9.89, 9.97, 10.59, 10.65, 10.70, 10.76, 10.82	17.16, 17.21, 17.26, 17.30, 17.34, 17.39, 17.44
Operating rated curreng [A].....	39.08, 39.30, 39.52, 39.75, 39.98, 40.21, 40.44, 40.67, 40.89, 41.10, 41.31, 41.52, 40.32, 40.60, 40.85, 41.12, 41.36, 41.59	41.09, 41.26, 41.43, 41.60, 41.76, 41.93, 42.10, 42.27, 42.44, 42.61	32.98, 33.23, 33.48, 33.73, 33.97, 34.21, 34.44, 34.67, 34.90, 35.13, 33.52, 33.80, 34.11, 34.39, 34.66	33.80, 34.00, 34.20, 34.40, 34.61, 34.80, 35.00
Tolerance of Rating Pmax / Isc / Voc [%].....	3.5 / 5 / 3.5		3.5 / 5 / 3.5	
Over-current protection rating[A]:	20	25	20	35
Classification (IEC 61730).....	Class II		Class II	
Fire rating.....	Type 29		Type 29	
Pollution degree.....	I		I	
Dimensions (l x w x h) [mm].....	2012x992x6mm/ 2032x1004x6mm/ 2018x998x30mm/ 2038x1010x30mm/ 2131x1052x30mm/ 2094x1038x30mm/ 2036x1002x30mm/ 2031x1008x30mm	2256x1133x35mm 2285x1134x35mm	1690x992x6mm/ 1708x1004x6mm 1696x998x30mm/ 1714x1010x30mm/ 1791x1052x30mm/ 1755x1038x30mm/ 1704x1008x30mm	2172x13033x35/40
Module area [m²].....	2.00/ 2.04/ 2.01/ 2.06/ 2.24/ 2.17/ 2.05	2.56 / 2.59	1.68/ 1.71/ 1.69/ 1.73/ 1.88/ 1.82/ 1.72	2.83
Min- creepage distance [mm].....	10.4		10.4	
Number of solar cells	144		120	

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Cells per bypass diode		48		40
Serial/parallel connection of cells		SP		SP
Nominal Module operating temperature(NMOT)		41℃		41℃
Coefficient of cells	α[%/°C]	0.04%/℃		0.04%/℃
	β[%/°C]	-0.25%/℃		-0.25%/℃
	γ[%/°C]	-0.34%/℃		-0.34%/℃
Type Name or Model No.....		CHSM72M(DGT)/F-BH-xxx (mono 144 cells)		CHSM60M(DGT)/F-BH-xxx (mono 120 cells)
Maximum System Voltage [VDC]		1500		1500
Rated Maximum Power [W].....		355, 360, 365, 370, 375, 380, 385, 390, 395, 400, 405, 410,415,420,425, 430,435,440	505,510,515,520,525, 530,535,540,545,550, 555,560	295, 300, 305, 310, 315, 320, 325, 330, 335,340,345,350,355,360,365,370
Rated Short Circuit Current [A].....		9.57, 9.65, 9.73, 9.81, 9.89, 9.97, 10.05, 10.13, 10.21, 10.29,10.37,10.45, 10.53,10.61, 10.92,10.98, 11.07,11.16	13.28,13.29,13.30, 13.31,13.32,13.41, 13.50,13.59,13.68, 13.77,13.86,13.94	9.51, 9.58, 9.65, 9.72, 9.79, 9.86, 9.93, 10.00, 10.07, 10.14,10.21,10.28,11.12,11.18,11.27,11.34
Rated Open Circuit Voltage [V].....		46.72, 46.90, 47.08, 47.26, 47.44, 47.62, 47.80, 47.98, 48.16, 48.34,48.52,48.70,48.88,4 9.06,49.08,49.38, 49.55,49.72	48.90,49.10,49.30, 49.50,49.70,49.90, 50.10,50.30,50.50, 50.70,50.90,51.10	39.49, 39.68, 39.87, 40.06, 40.25, 40.44, 40.63, 40.82, 41.01,41.20,41.39,41.58,40.26,40.61,40.84,41.14
Operating rated curreng [A].....		9.13, 9.21, 9.28, 9.36, 9.43, 9.50, 9.57, 9.64, 9.71, 9.78, 9.85, 9.92, 9.99, 10.06, 10.48, 10.54, 10.61, 10.68	12.29, 12.36, 12.43, 12.50, 12.57, 12.64, 12.71, 12.78, 12.84, 12.91, 12.98, 13.04	9.03, 9.12, 9.20, 9.28, 9.36, 9.44, 9.52, 9.60, 9.68, 9.76, 9.84, 9.92, 10.68, 10.74, 10.81, 10.87
Operating rated curreng [A].....		38.90, 39.12, 39.34, 39.55, 39.77, 40.00, 40.23, 40.46, 40.69, 40.92, 41.13, 41.34, 41.55, 41.76, 40.55, 40.80, 41.00, 41.20	41.09, 41.26, 41.43, 41.60, 41.76, 41.93, 42.10, 42.27, 42.44, 42.61, 42.77, 42.94	32.67, 32.92, 33.16, 33.41, 33.66, 33.91, 34.15, 34.39, 34.62, 34.85, 35.08, 35.31, 33.24, 33.52, 33.77, 34.04
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5		3.5 / 5 / 3.5
Over-current protection rating[A]:		20	25	20
Classification (IEC 61730).....		Class II		Class II
Fire rating.....		Type 29		Type 29
Pollution degree.....		I		I
Dimensions (l x w x h) [mm].....		2018x998x30mm/ 2038x1010x30mm/ 2094x1038x30mm/ 2131x1052 x 30mm	2256x1133x35mm 2278 x1134*35mm 2285x1134x35mm	1696x998x30mm/ 1714x1010x30mm/ 1791x1052x30mm/ 1755x1038x30mm/

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Module area [m²].....	2.00/ 2.04/ 2.01/ 2.06/ 2.24/ 2.17/ 2.05	2.56/2.59	1.68/ 1.71/ 1.69/ 1.73/ 1.88/ 1.82/ 1.72	
Min- creepage distance [mm].....	10.4		10.4	
Number of solar cells	144		120	
Cells per bypass diode	48		40	
Serial/parallel connection of cells	SP		SP	
Nominal Module operating temperature(NMOT)	41℃		41℃	
Coefficient of cells	α[%/°C]	0.04%/℃		0.04%/℃	
	β[%/°C]	-0.25%/℃		-0.25%/℃	
	γ[%/°C]	-0.34%/℃		-0.34%/℃	
Type Name or Model No.....	CHSM66M(DGT)/F-BH-xxx (mono 132 cells)		CHSM66M(DG)/F-BH-xxx (mono 132 cells)	
Maximum System Voltage [VDC]	1500		1500	
Rated Maximum Power [W].....	460,470,475,480,485,490,495,500,505,510,515		470,475, 480, 485, 490, 495,500,505,510,515	635,640,645,650,655,660, 665,670,675
Rated Short Circuit Current [A].....	12.89,12.99,13.09,13.18,13.28,13.38,13.47,13.57, 13.67,13.76,13.85,13.95		13.17,13.27, 13.37, 13.46, 13.56, 13.65,13.75,13.83, 13.90,13.98	18.17,18.22,18.27,18.32, 18.37,18.42,18.47,18.52, 18.57
Rated Open Circuit Voltage [V].....	44.78,44.98,45.18,45.38,45.58,45.78,45.98,46.18, 46.38,46.58,46.78,46.98		44.78,44.98, 45.18, 45.38, 45.58, 45.78,45.98,46.18, 46.38,46.58	44.89,45.09,45.29,45.49, 45.69,45.89,46.09,46.29, 46.49
Operating rated curreng [A].....	12.23, 12.30, 12.38, 12.46, 12.53, 12.61, 12.68, 12.76, 12.83, 12.90, 12.97, 13.04		12.49, 12.57, 12.64, 12.72, 12.79, 12.87, 12.94, 13.01, 13.09, 13.16	17.13, 17.17, 17.21, 17.26, 17.30, 17.34, 17.38, 17.42, 17.46
Operating rated curreng [A].....	37.63, 37.79, 37.96, 38.13, 38.30, 38.47, 38.63, 38.80, 38.97, 39.14, 39.31, 39.48		37.63, 37.79, 37.96, 38.13, 38.30, 38.47, 38.63, 38.80, 38.97, 39.14	37.08, 37.28, 37.48, 37.68, 37.88, 38.08, 38.28, 38.48, 38.68
Tolerance of Rating Pmax / Isc / Voc [%].....	3.5 / 5 / 3.5		3.5 / 5 / 3.5	
Over-current protection rating[A]:	25		30 (with junction box: CHS2x)	35 (with junction box: CHS2x)
Classification (IEC 61730).....	Class II		Class II	Class II
Fire rating.....	Type 29		Type 29	Type 29
Pollution degree.....	I		I	I
Dimensions (l x w x h) [mm].....	2073 x1133 x35mm /2100 x1134 x35mm		2073x1133x35mm/ 2100x1134x35mm	2384 x 1303 x 35/40
Module area [m²].....	2.35 / 2.38		2.35 / 2.38	3.11
Min- creepage distance [mm].....	10.4		10.4	10.4

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Number of solar cells		132	132	132
Cells per bypass diode		44	44	44
Serial/parallel connection of cells		SP	SP	SP
Nominal Module operating temperature(NMOT)		41℃	41℃	41℃
Coefficient of cells	α[%/°C]	0.04%/℃	0.04%/℃	0.04%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.34%/℃	-0.34%/℃	-0.34%/℃
Type Name or Model No.....		CHSM54M(DG)/F-BH-xxx (mono 108 cells)	CHSM78M(DG)/F-BH-xxx (mono 156 cells)	
Maximum System Voltage [VDC]		1500	1500	
Rated Maximum Power [W].....		385,390,395,400,405,410,415,420	580,585,590,595,600,605	
Rated Short Circuit Current [A].....		13.21,13.33,13.43,13.54,13.66,13.77,13.88,13.99	13.58,13.66,13.75,13.83,13.91,13.98	
Rated Open Circuit Voltage [V].....		36.60,36.80,37.00,37.20,37.40,37.60,37.80,38.00	53.86,54.06,54.26,54.46,54.66,54.86	
Operating rated curreng [A].....		12.52, 12.61, 12.70, 12.80, 12.89, 12.98, 13.06, 13.15	12.82, 12.88, 12.94, 13.00, 13.06, 13.12	
Operating rated curreng [A].....		30.76, 30.92, 31.09, 31.26, 31.43, 31.60, 31.76, 31.93	45.26, 45.43, 45.60, 45.76, 45.93, 46.10	
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	30	
Classification (IEC 61730).....		Class II	Class II	
Fire rating.....		Type 29	Type 29	
Pollution degree.....		I	I	
Dimensions (l x w x h) [mm].....		1708 x 1133 x 30/35 1722*1134*30/35	2465 x 1134 x 35	
Module area [m²].....		1.94/1.95	2.80	
Min- creepage distance [mm].....		10.4	10.4	

Number of solar cells		108	156
Cells per bypass diode		36	52
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41℃	41℃
Coefficient of cells	α[%/°C]	0.04%/℃	0.04%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.34%/℃	-0.34%/℃
Type Name or Model No.....		CHSM60M(DG)/F-BH-xxx (mono 120 cells)	
Maximum System Voltage [VDC]		1500	
Rated Maximum Power [W].....		430,435,440,445,450,455,460,465	
Rated Short Circuit Current [A].....		13.24,13.33,13.43,13.54,13.64,13.74,13.85,13.95	
Rated Open Circuit Voltage [V].....		40.85,41.05,41.25,41.45,41.65,41.85,42.05,42.25	
Operating rated curreng [A].....		12.53, 12.61, 12.69, 12.78, 12.86, 12.94, 13.02, 13.10	
Operating rated curreng [A].....		34.33, 34.50, 34.66, 34.83, 35.00, 35.17, 35.34, 35.50	
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	
Classification (IEC 61730).....		Class II	
Fire rating.....		Type 29	
Pollution degree.....		I	
Dimensions (l x w x h) [mm].....		1903x1134x35/30	
Module area [m²].....		2.14/2.16	
Min- creepage distance [mm].....		10.4	
Number of solar cells		120	
Cells per bypass diode		40	
Serial/parallel connection of cells		SP	
Nominal Module operating temperature(NMOT)		41℃	
Coefficient	α[%/°C]	0.04%/℃	

of cells	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.34%/℃	
Type Name or Model No.....		CHSM55M(DG)/F-BH-xxx	CHSM50M(DG)/F-BH-xxx
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		525,530,535,540,545,550,555,560,565	475,480,485,490,495,500,505,510,515
Rated Short Circuit Current [A].....		18.14,18.19,18.24,18.29, 18.34,18.39,18.44,18.49,18.54	18.08,18.14,18.20,18.26,18.32,18.38,18.44,18.50,18.56
Rated Open Circuit Voltage [V].....		37.10,37.32,37.54,37.76,37.98, 38.20,38.42,38.64,38.86	33.58,33.38,33.98,34.20,34.42,34.64,34.86,35.08,35.30
Operating rated curreng [A].....		17.05, 17.10, 17.14, 17.19, 17.24, 17.29, 17.34, 17.39, 17.44	17.05, 17.10, 17.15, 17.20, 17.25, 17.30, 17.35, 17.41, 17.46
Operating rated curreng [A].....		30.81, 31.03, 31.22, 31.43, 31.63, 31.83, 32.02, 32.22, 32.42	27.91, 28.11, 28.31, 28.51, 28.71, 28.91, 29.11, 29.31, 29.51
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		35	35
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		2384 x1096 x 35	2172 x1096 x 35
Module area [m²].....		2.61	2.38
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells		110	100
Cells per bypass diode		44/22/44	40/20/40
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41℃	41℃
Coefficient of cells	α[%/°C]	0.04%/℃	0.04%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃

	γ[%/°C]	-0.34%/℃	-0.34%/℃
Type Name or Model No.....		CHSM66N(DG)/F-BH-xxx (mono 132 cells)	CHSM60N(DG)/F-BH-xxx (mono 120 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		655,660,665,670,675,680,685,690,695,700,705,710,715,720,725,730,735	590,595,600,605,610,615,620,625,630
Rated Short Circuit Current [A].....		17.91,17.96,18.02,18.07,18.12,18.18,18.23,18.28,18.33,18.38,18.43,18.48,18.53,18.58,18.63,18.67,18.72	17.41,17.50,17.58,17.67,17.75,17.83,17.92,18.00,18.08
Rated Open Circuit Voltage [V].....		46.57,46.77,46.97,47.17,47.37,47.57,47.77,47.97,48.17,48.37,48.57,48.77,48.97,49.17,49.37,49.57,49.77	42.20,42.40,42.60,42.81,43.01,43.21,43.41,43.62,43.82
Operating rated curreng [A].....		16.95,17.00,17.06,17.11,17.17,17.22,17.28,17.33,17.38, 17.44, 17.49,17.54,17.59,17.64,17.69,17.70,17.75	16.85, 16.91, 16.97, 17.03, 17.09, 17.15, 17.21, 17.27, 17.32
Operating rated curreng [A].....		38.65,38.82,38.99,39.15,39.32,39.48,39.65,39.82,39.98,40.15,40.31,40.48,40.65,40.81,40.98,41.24,41.41	35.02, 35.19, 35.36, 35.52, 35.69, 35.86, 36.03, 36.20, 36.37
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		35	35
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		2384 x 1303 x 35	2172 x 1303 x 35
Module area [m²].....		3.11	2.83
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells		132	120
Cells per bypass diode		44	40
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	
	β[%/°C]	-0.25%/℃	

	γ[%/°C]	-0.29%/℃		
Type Name or Model No.....		CHSM78N(DG)/F-BH-xxx (mono 156 cells)	CHSM72N(DG)/F-BH-xxx (mono 144 cells)	CHSM72N(DG)(BLH)/F-BH-xxx (mono 144 cells)
Maximum System Voltage [VDC]		1500	1500	
Rated Maximum Power [W].....		580,585,590,595,600,605,610,615,620,625,630, 635,640,645,650,655	550,555,560,565,570,575, 580,585, 590,595,600,605	550,555,560,565,570,575, 580,585
Rated Short Circuit Current [A].....		13.37,13.46,13.54,13.62,13.70,13.78,13.87,13.95, 14.03,14.11,14.19,14.27,14.35,14.43,14.51,14.59	13.76,13.84,13.93,14.02,14.10,14.19,14.28,14.36, 14.45,14.53,14.61,14.70	13.76,13.84,13.93,14.02,14.10,14.19,14.28,14.36
Rated Open Circuit Voltage [V].....		54.21,54.41,54.61,54.81,55.01,55.21,55.41,55.61,55.81,56.01,56.21,56.41,56.61,56.81,57.01,57.21	50.10,50.30,50.50,50.70,50.90,51.10,51.30,51.50, 51.70,51.90,52.10,52.30	50.10,50.30,50.50,50.70,50.90,51.10,51.30,51.50
Operating rated curreng [A].....		12.95, 13.01, 13.07, 13.14, 13.20, 13.26, 13.32, 13.38, 13.44, 13.50, 13.56, 13.62, 13.68, 13.74, 13.80, 13.86	13.06, 13.13, 13.20, 13.26, 13.33, 13.39, 13.45, 13.52, 13.58, 13.64, 13.70, 13.77	13.06, 13.13, 13.20, 13.26, 13.33, 13.39, 13.45, 13.52
Operating rated curreng [A].....		44.80, 44.97, 45.13, 45.30, 45.46, 45.63, 45.79, 45.96, 46.12, 46.29, 46.45, 46.62, 46.79, 46.95, 47.12, 47.26	42.10, 42.27, 42.44, 42.61, 42.77, 42.94, 43.11, 43.27, 43.45, 43.61, 43.78, 43.95	42.10, 42.27, 42.44, 42.61, 42.77, 42.94, 43.11, 43.27
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	30	
Classification (IEC 61730).....		Class II	Class II	
Fire rating.....		Type 29	Type 29	
Pollution degree.....		I	I	
Dimensions (l x w x h) [mm].....		2465 x 1134 x 35	2278 x 1134 x 35	
Module area [m²].....		2.80	2.58	
Min- creepage distance [mm].....		10.4	10.4	
Number of solar cells.....		156	144	
Cells per bypass diode.....		52	48	
Serial/parallel connection of cells		SP	SP	
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃	
Coefficient of cells	α[%/°C]	0.043%/℃		

	β[%/°C]	-0.25%/℃		
	γ[%/°C]	-0.29%/℃		
Type Name or Model No.....		CHSM54N(DG)/F-BH-xxx (mono 108 cells)	CHSM54N(DG)(BLH)/F-BH-xxx (mono 108 cells)	CHSM60N(DG)/F-BH-xxx (mono 120 cells)
Maximum System Voltage [VDC]		1500		1500
Rated Maximum Power [W].....		405,410,415,420,425, 430,435,440,445,450, 455	405,410,415,420,425, 430	450,455,460,465,470,475,480,485,490,495,500,505
Rated Short Circuit Current [A].....		13.53,13.65,13.76,13.87 ,13.98,14.08,14.19, 14.30,14.41,14.51,14.62	13.53,13.65,13.76, 13.87,13.98,14.08	13.60,13.71,13.81,13.91,14.01,14.11,14.21,14.31,14.41, 14.51,14.60,14.70
Rated Open Circuit Voltage [V].....		37.50,37.70,37.90,38.10 ,38.30,38.50,38.70,38.9 0,39.10,39.30,39.50	37.5,37.70,37.90, 38.10,38.30,38.50	41.45,41.65,41.85,42.05,42.25,42.45,42.65,42.85,43.05, 43.25,43.45,43.65
Operating rated curreng [A].....		12.85, 12.94, 13.03, 13.12, 13.20, 13.29, 13.38, 13.46, 13.54, 13.63, 13.71	12.85, 12.94, 13.03, 13.12, 13.20, 13.29	12.92, 13.00, 13.08, 13.16, 13.24, 13.32, 13.39, 13.47, 13.54, 13.62, 13.69, 13.77
Operating rated curreng [A].....		31.51, 31.68, 31.85, 32.02, 32.18, 32.35, 32.52, 32.69, 32.86, 33.03, 33.19	31.51, 31.68, 31.85, 32.02, 32.18, 32.35	34.83, 35.00, 35.17, 35.34, 35.50, 35.67, 35.84, 36.01, 36.18, 36.34, 36.51, 36.68
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5		3.5 / 5 / 3.5
Over-current protection rating[A]:		30		30
Classification (IEC 61730).....		Class II		Class II
Fire rating.....		Type 29		Type 29
Pollution degree.....		I		I
Dimensions (l x w x h) [mm].....		1722 x 1134 x 30/35		1722 x 1134 x 30/35
Module area [m²].....		1.95		2.16
Min- creepage distance [mm].....		10.4		10.4
Number of solar cells.....		108		120
Cells per bypass diode.....		36		40
Serial/parallel connection of cells		SP		SP

Nominal Module operating temperature(NMOT)		41±2℃	41±2℃	
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃	
	β[%/°C]	-0.25%/℃	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	-0.29%/℃	
Type Name or Model No.....		CHSM72RN(DG)/F-BH-xxx (mono 144 cells)	CHSM54RN(DG)/F-BH-xxx (mono 108 cells)	
Maximum System Voltage [VDC]		1500	1500	
Rated Maximum Power [W].....		590,595,600,605,610,615,620	445,450,455	495,500,505,510,515,520, 525,530
Rated Short Circuit Current [A].....		14.50, 14.56, 14.65, 14.71,14.79,14.86,14.94	14.62,14.73,14.83	15.43, 15.52, 15.61, 15.70, 15.79, 15.82, 15.93, 16.04
Rated Open Circuit Voltage [V].....		51.00,51.20,51.40,51.60,51.80,52.00,52.20	38.30,38.50,38.70	40.72, 40.89, 41.05, 41.21, 41.37, 41.39, 41.49, 41.59
Operating rated curreng [A].....		13.77, 13.83, 13.89, 13.95, 14.01, 14.07, 14.13	13.83, 13.91, 13.99	14.61, 14.70, 14.79, 14.87, 14.96, 15.10, 15.21, 15.32
Operating rated curreng [A].....		42.86, 43.03, 43.19, 43.36, 43.53, 43.70, 43.87	32.18, 32.35, 32.52	33.88, 34.02, 34.15, 34.29, 34.42, 34.44, 34.52, 34.60
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	30	
Classification (IEC 61730).....		Class II	Class II	
Fire rating.....		Type 29	Type 29	
Pollution degree.....		I	I	
Dimensions (l x w x h) [mm].....		2384 x 1134 x 35/30 2382 x 1134 x 35/30 2380 x 1134 x 35/30	1800 x 1134 x 35/30	1961x1134x30
Module area [m²].....		2.70	2.04	2.22
Min- creepage distance [mm].....		10.4	10.4	
Number of solar cells.....		144	108	
Cells per bypass diode.....		48	36	
Serial/parallel connection of cells		SP	SP	

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Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM48N(DGT)/F-BH-xxx (mono 96 cells)	CHSM66RN(DG)/F-BH-xxx (mono 132 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		360,365,370,375,380,385,390	585,590,595,600,605,610,615,620,625,630,635,640,6445, 650
Rated Short Circuit Current [A].....		13.37,13.41,13.44,13.47,13.51,13.57,13.64	15.53,15.61,15.70,15.78,15.86,15.94,16.02, 16.11,16.19, 16.27, 16.35, 16.42, 16.50, 16.58
Rated Open Circuit Voltage [V].....		33.83,34.12,34.41,34.70,34.98,35.26,35.53	47.99,48.14,48.29,48.44,48.59,48.74,48.89, 49.04,49.19, 49.34, 49.42, 49.57, 49.72, 49.87
Operating rated curreng [A].....		12.73, 12.79, 12.86, 12.93, 12.99, 13.06, 13.13	14.38, 14.46, 14.54, 14.62, 14.69, 14.77, 14.84, 14.92, 14.99, 15.07, 15.17, 15.24, 15.32, 15.39
Operating rated curreng [A].....		28.29, 28.53, 28.77, 29.01, 29.25, 29.48, 29.71	40.67, 40.80, 40.92, 41.05, 41.18, 41.31, 41.43, 41.56, 41.69, 41.82, 41.86, 41.99, 42.11, 42.24
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		30	35
Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		2278 x 1134 x 35/30	2382x1134x35/30
Module area [m²].....		2.58	2.70
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells.....		96	132
Cells per bypass diode.....		32	44
Serial/parallel connection of cells		SP	SP

Nominal Module operating temperature(NMOT)		41±2℃	41±2℃	
Coefficient of cells	α[%/°C]	0.043%/℃		
	β[%/°C]	-0.25%/℃		
	γ[%/°C]	-0.29%/℃		
Type Name or Model No.....		CHSM48M(DGT)/F-BH-xxx (mono 96 cells)	CHSM72N(DGT)/F-BH-xxx (mono 144 cells)	CHSM72N(DGT)(BLH)/F-BH-xxx (mono 144 cells)
Maximum System Voltage [VDC]		1500	1500	
Rated Maximum Power [W].....		340,345,350,355,360,365,370	550,555,560,565,570, 575,580,585,590,595,600	550,555,560,565,570, 575,580,585
Rated Short Circuit Current [A].....		13.44,13.46,13.51,13.53,13.58,13.61,13.64	13.72,13.81,13.89,13.98, 14.07,14.15,14.24,14.32, 14.41,14.49,14.58	13.72,13.81,13.89,13.98, 14.07,14.15,14.24,14.32
Rated Open Circuit Voltage [V].....		32.14,32.45,32.69,32.98,33.22,33.50,33.77	50.30,50.50,50.70,50.90, 51.10,51.30,51.50,51.70, 51.90,52.10,52.30	50.30,50.50,50.70,50.90, 51.10,51.30,51.50,51.70
Operating rated curreng [A].....		12.67, 12.74, 12.82, 12.89, 12.97, 13.05, 13.12	13.01, 13.08, 13.14, 13.21, 13.27, 13.34, 13.40, 13.47, 13.53, 13.59, 13.65	13.01, 13.08, 13.14, 13.21, 13.27, 13.34, 13.40, 13.47
Operating rated curreng [A].....		26.84, 27.08, 27.30, 27.54, 27.76, 27.97, 28.20	42.27, 42.44, 42.61, 42.77, 42.94, 43.11, 43.28, 43.45, 43.61, 43.78, 43.95	42.27, 42.44, 42.61, 42.77, 42.94, 43.11, 43.28, 43.45
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	30	
Classification (IEC 61730).....		Class II	Class II	
Fire rating.....		Type 29	Type 29	
Pollution degree.....		I	I	

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Dimensions (l x w x h) [mm].....		2278 x 1134 x 35/30	2278 x 1134 x 35/30	
Module area [m²].....		2.58	2.58	
Min- creepage distance [mm].....		10.4	10.4	
Number of solar cells.....		96	144	
Cells per bypass diode.....		32	48	
Serial/parallel connection of cells		SP	SP	
Nominal Module operating temperature(NMOT)		41℃	41±2℃	
Coefficient of cells	α[%/°C]	0.04%/℃	0.043%/℃	
	β[%/°C]	-0.25%/℃	-0.25%/℃	
	γ[%/°C]	-0.34%/℃	-0.29%/℃	
Type Name or Model No.....		CHSM60N(DGT)/F-BH-xxx (mono 120 cells)	CHSM54N(DGT)/F-BH-xxx (mono 108 cells)	CHSM54N(DGT)(BLH)/F-BH-xxx (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500	
Rated Maximum Power [W].....		450,455,460,465,470,475,480,485,490,495,500	405,410,415,420,425,430, 435,440,445,450	
Rated Short Circuit Current [A].....		13.56,13.66,13.76,13.86,13.96,14.04,14.13,14.21, 14.29,14.37,14.44	13.48,13.59,13.70,13.81,13.92,14.01,14.10,14.19, 14.28,14.37	
Rated Open Circuit Voltage [V].....		41.65,41.85,42.05,42.25,42.45,42.65,42.85,43.05, 43.25,43.45,43.65	37.70,37.90.38.10,38.30,38.50,38.70,38.90,39.10, 39.30,39.50	
Operating rated curreng [A].....		12.86, 12.94, 13.02, 13.10, 13.18, 13.25, 13.33, 13.41, 13.48, 13.56, 13.63	12.78, 12.87, 12.96, 13.05, 13.14, 13.22, 13.31, 13.39, 13.47, 13.56	
Operating rated curreng [A].....		35.00, 35.17, 35.34, 35.50, 35.67, 35.84, 36.01, 36.18, 36.34, 36.51, 36.68	31.68, 31.85, 32.02, 32.18, 32.35, 32.52, 32.69, 32.86, 33.03, 33.19	
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	30	
Classification (IEC 61730).....		Class II	Class II	

Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		1903x1134x30 1908x1134x30	1722 x 1134 x 30
Module area [m²].....		2.16	1.95
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells.....		120	108
Cells per bypass diode.....		40	36
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM72N(DG)/F-HC-xxx (mono 144 cells)	CHSM54RNs(DG)/F-HC-xxx (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		550,555,560,565,570.575.580,585	430,435,440,445,450,455,460
Rated Short Circuit Current [A].....		13.39,13.49,13.59,13.69,13.79,13.89,13.98,14.08	14.00,14.09,14.18,14.26,14.35,14.44,14.52
Rated Open Circuit Voltage [V].....		51.40,51.55,51.70,51.85,52.00,52.15,52.30,52.45	38.40,38.60,38.80,39.00,39.20,39.40,39.60
Operating rated curreng [A].....		12.73, 12.81, 12.89, 12.97, 13.04, 13.12, 13.20, 13.27	13.33, 13.41, 13.49, 13.58, 13.66, 13.74, 13.82
Operating rated curreng [A].....		43.19, 43.32, 43.45, 43.57, 43.70, 43.82, 43.95, 44.08	32.27, 32.44, 32.61, 32.77, 32.94, 33.11, 33.28
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		25	30

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Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		2278 x 1134 x 35/30	1762 x 1134 x 35/30
Module area [m²].....		2.58	2.00
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells.....		144	108
Cells per bypass diode.....		48	1762 x 1134 x 35/30
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM54RNs(DG)/F-BH-xxx (mono 108 cells)	CHSM54RNs(DG)(BLH)/F-BH-xxx (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		430,435,440,445,450,455,460	425,430,435,440,445,450,455,460
Rated Short Circuit Current [A].....		14.00,14.09,14.18,14.26,14.35,14.44,14.52	13.83,13.92,14.01,14.10,14.19,14.28,14.36,14.45
Rated Open Circuit Voltage [V].....		38.40,38.60,38.80,39.00,39.20,39.40,39.60	38.40,38.60,38.80,39.00,39.20,39.40,39.60,39.80
Operating rated curreng [A].....		13.33, 13.41, 13.49, 13.58, 13.66, 13.74, 13.82	13.06, 13.15, 13.23, 13.31, 13.40, 13.48, 13.56, 13.64
Operating rated curreng [A].....		32.27, 32.44, 32.61, 32.77, 32.94, 33.11, 33.28	32.54, 32.71, 32.88, 33.05, 33.22, 33.39, 33.56, 33.73
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		30	30

ASTRONERGY

Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		1762 x 1134 x 35/30	1762 x 1134 x 35/30
Module area [m²].....		2.04	2.04
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells.....		108	108
Cells per bypass diode.....		36	36
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM54RNs(DGT)/F-BH-xxx (mono 108 cells)	CHSM54RNs(DGT)(BLH)/F-BH-xxx (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		430,435,440,445,450,455,460	425,430,435,440,445,450,455,460
Rated Short Circuit Current [A].....		13.92,14.01,14.10,14.19,14.28,14.36,14.45	13.83,13.92,14.01,14.10,14.19,14.28,14.36,14.45
Rated Open Circuit Voltage [V].....		38.60,38.80,39.00,39.20,39.40,39.60,39.80	38.40,38.60,38.80,39.00,39.20,39.40,39.60,39.80
Operating rated curreng [A].....		13.15, 13.23, 13.31, 13.40, 13.48, 13.56, 13.64	13.06, 13.15, 13.23, 13.31, 13.40, 13.48, 13.56, 13.64
Operating rated curreng [A].....		32.71, 32.88, 33.05, 33.22, 33.39, 33.56, 33.73	32.54, 32.71, 32.88, 33.05, 33.22, 33.39, 33.56, 33.73
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		30	30

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Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		1762 x 1134 x 35/30	1762 x 1134 x 35/30
Module area [m²].....		2.00	2.00
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells.....		108	108
Cells per bypass diode.....		36	36
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM54M(DGT)/F-BH-xxx (mono 108 cells)	CHSM54RN(DGT)(BLH)/F-BH (mono 108 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		385,390,395,400,405, 410, 415, 420	495,500,505,510,515,520,525
Rated Short Circuit Current [A].....		13.29,13.40,13.52,13.65,13.76, 13.87, 13.99, 14.10	15.56, 15.65, 15.74, 15.83, 15.87, 15.98, 16.09
Rated Open Circuit Voltage [V].....		36.40,36.60,36.80,37.00,37.20, 37.40, 37.60, 37.80	40.38, 40.54, 40.70, 40.87, 40.90, 41.00, 41.10
Operating rated curreng [A].....		12.59, 12.68, 12.77, 12.86, 12.96, 13.05, 13.13, 13.22	14.75, 14.84, 14.93, 15.02, 15.13, 15.24, 15.35
Operating rated curreng [A].....		30.59, 30.76, 30.92, 31.09, 31.26, 31.43, 31.60, 31.76	33.56, 33.69, 33.83, 33.96, 34.04, 34.12, 34.21
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		30	30

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Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		1708 x 1133 x 30/35 1722*1134*30/35	1961x1134x30
Module area [m²].....		1.94/1.95	2.22
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells		108	108
Cells per bypass diode		36	36
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM48RN(DG)/F-BH-xxx (mono 96 cells)	CHSM48RN(DGT)(BLH)/F-BH (mono 96 cells)
Maximum System Voltage [VDC]		1500	1500
Rated Maximum Power [W].....		440,445,450,455,460,465,470	440,445,450,455,460,465
Rated Short Circuit Current [A].....		15.47, 15.57, 15.68, 15.78, 15.88, 15.98, 15.99	15.45, 15.56, 15.66, 15.76, 15.79, 15.89
Rated Open Circuit Voltage [V].....		36.09, 36.25, 36.42, 36.58, 36.74, 36.90,36.92	36.14, 36.30, 36.46, 36.62, 36.64, 36.74
Operating rated curreng [A].....		14.64, 14.74, 14.83, 14.93, 15.03, 15.13, 15.28	14.62, 14.72, 14.82, 14.91, 15.07, 15.19
Operating rated curreng [A].....		30.06, 30.20, 30.33, 30.47, 30.60, 30.73, 30.75	30.10, 30.24, 30.37, 30.51, 30.52, 30.60
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	3.5 / 5 / 3.5
Over-current protection rating[A]:		30	30

ASTRONERGY

Classification (IEC 61730).....		Class II	Class II
Fire rating.....		Type 29	Type 29
Pollution degree.....		I	I
Dimensions (l x w x h) [mm].....		1762x1134x30	1762x1134x30
Module area [m²].....		2.00	2.00
Min- creepage distance [mm].....		10.4	10.4
Number of solar cells		96	96
Cells per bypass diode		32	32
Serial/parallel connection of cells		SP	SP
Nominal Module operating temperature(NMOT)		41±2℃	41±2℃
Coefficient of cells	α[%/°C]	0.043%/℃	0.043%/℃
	β[%/°C]	-0.25%/℃	-0.25%/℃
	γ[%/°C]	-0.29%/℃	-0.29%/℃
Type Name or Model No.....		CHSM48RN(DG)(BLH)/F-BH (mono 96 cells)	
Maximum System Voltage [VDC]		1500	
Rated Maximum Power [W].....		440,445,450,455,460,465	
Rated Short Circuit Current [A].....		15.40, 15.50, 15.61, 15.71, 15.81, 15.84	
Rated Open Circuit Voltage [V].....		36.26, 36.42, 36.59, 36.75, 36.91, 36.93	
Operating rated curreng [A].....		14.55, 14.65, 14.75, 14.85, 14.94, 15.10	
Operating rated curreng [A].....		30.24, 30.38, 30.51, 30.65, 30.78, 30.80	
Tolerance of Rating Pmax / Isc / Voc [%].....		3.5 / 5 / 3.5	
Over-current protection rating[A]:		30	

Classification (IEC 61730).....		Class II	
Fire rating.....		Type 29	
Pollution degree.....		I	
Dimensions (l x w x h) [mm].....		1762x1134x30	
Module area [m²].....		2.00	
Min- creepage distance [mm].....		10.4	
Number of solar cells		96	
Cells per bypass diode		32	
Serial/parallel connection of cells		SP	
Nominal Module operating temperature(NMOT)		41±2℃	
Coefficient of cells	α[%/°C]	0.043%/℃	
	β[%/°C]	-0.25%/℃	
	γ[%/°C]	-0.29%/℃	

Pmp ~ Ima are measured under STC (irradiance = 1000 mW/cm² , AM = 1.5, and cell temperature = 25°C)