

SORTING BASED ON COLOR SORTING BASED ON MATERIAL LEADING SORTING SOLUTIONS COLOR SORTING SOLUTIONS





MSW TECHNOLOGY

HEFEI ANHUI CHINA

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Company | 公司

CSG is a brand of MSW Technology Group, CSG business unit focusing on optical sorting solutions, the Manufacturing Center is located in Hefei High-tech Development Zone of China. With an area of 100,000 square meters, 22,000 square meters of modern workshops and 25,000 square meters of scientific research buildings. Annual production capacity are more than 5000 sets Color Sorter

The dedicated R&D center bases itself in Hefei, a national science and education base, as a tactic to support the company's research and development efforts. The company has also established a R&D team composed of experienced engineers and headed by leading optoelectronic experts in China, who demonstrates strong capability in research and development, extraordinary innovative ideas, and pragmatic R&D initiatives. In particular, the company has been leading the rapid development and applications of color sorting technologies through cooperation with a U.S. manufacturer of color sorters.

In particular, the company has developed its AMD & CSG series of color sorters, for which the company received exclusive intellectual property rights, by applying its research and manufacturing experience accumulated over the past 30 years. These color sorters enable precise sorting operations for rise, coarse cereals, tea and special materials. Consequently, the company grasps more than 30% market share in Chinese market, and the products are successfully exported to the United States, Brazil, India, Indonesia, Southeast Asia and other countries and regions.

CSG core products are include sensor-based sorting equipment, which stands out globally for its high cost performance, including Al sorting equipment, color sorter, NIR sorting machine, X-ray sorting machine, and laser sorting machine. These products are widely used in grain processing, food industry, mining, resource recycling, energy and environmental protection, and other industries.

DEVELOPMENT HISTORY

发展历程

忆峥嵘岁月 中流击水,浪遏飞舟 扬起勇敢与智慧编织的风帆 成就全球领先智能分选设备供应商











大来 立足中国 服务全球 FUTURE

GLOBAL SORTING SOLUTIONS PROVIDER

12 2012-2015 (#)

"Contract, the word" corporate title again; "AAA Grade Cradit Enterprise" it was identified as "IPR advantagous enterprises in Anhiai Province". It was identified as "Heels IPR demonstration enterprises". Obtained 10 utility model patterns, a software corporation of the province of the



1 CHUTE / 64 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight		
M1	1 KW	0.5-1.5 T/H	TWO	99.99%	950X1550X1600	350kg		
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification							
Camera Pix			5400) Pixel				
Ejector			Super-High Spe	ed Matrix Eject	ors			
Light Source	LED RGB three-primary color model lighting systems							
CCD Sensor	TOSHIBA Micron-sized superior HD RGB							
Touch Screen:	HITAC	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



2 CHUTE / 128 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M2	1.2 KW	1-3 T/H	FOUR	99.99%	1250X1550X1600	450kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source	LED RGB three-primary color model lighting systems						
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



3 CHUTES / 192 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M3	2.6 KW	2-5 T/H	SIX	99.99%	1800X1650X2020	750kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source		LED F	RGB three-primary c	olor model ligh	nting systems		
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



4 CHUTES / 256 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M4	2.8 KW	3-6 T/H	EIGHT	99.99%	2170X1650X2020	900kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source		LED F	RGB three-primary o	olor model ligh	nting systems		
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACH	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)					

[►] Throughput in tons per hour depends on products.



5 CHUTES / 320 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight		
M5	3.2 KW	4-7 T/H	TEN	99.99%	2500X1650X2020	1050kg		
Sorting Mold	ng Mold Color identification / Size identification / Edge identification / Texture identification / Shape identification							
Camera Pix			540	0 Pixel				
Ejector			Super-High Spe	ed Matrix Ejec	tors			
Light Source		LED F	RGB three-primary c	olor model ligl	nting systems			
CCD Sensor	TOSHIBA Micron-sized superior HD RGB							
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)							

[▶] Throughput in tons per hour depends on products.



6 CHUTES / 384 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight		
M6	3.6 KW	5-8 T/H	TWELVE	99.99%	2850X1650X2020	1250kg		
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification							
Camera Pix			540	0 Pixel				
Ejector			Super-High Spe	ed Matrix Ejec	tors			
Light Source		LED F	RGB three-primary c	olor model ligh	nting systems			
CCD Sensor	TOSHIBA Micron-sized superior HD RGB							
Touch Screen:	HITACH	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[▶] Throughput in tons per hour depends on products.



7 CHUTES / 448 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight		
M7	4.1 KW	6-1.0 T/H	FOURTEEN	99.99%	3150X1650X2180	1400kg		
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification							
Camera Pix			540	0 Pixel				
Ejector			Super-High Spe	ed Matrix Ejec	tors			
Light Source		LED F	RGB three-primary c	olor model ligh	nting systems			
CCD Sensor	TOSHIBA Micron-sized superior HD RGB							
Touch Screen:	HITACH	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



8 CHUTES / 512 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M8	4.5 KW	7-1.2 T/H	SIXTEEN	99.99%	3460X1650X2180	1600kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source		LED F	RGB three-primary c	olor model ligh	nting systems		
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



10 CHUTES / 640 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M10	5.5 KW	7-20 T/H	TWENTY	99.99%	4100X1650X2180	2000kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source		LED F	RGB three-primary c	olor model ligh	nting systems		
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACH	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)					

[▶] Throughput in tons per hour depends on products.



12 CHUTES / 768 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

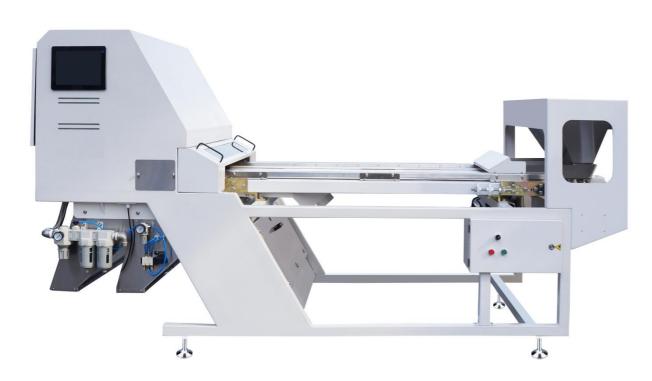
SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
M12	6 KW	10-20 T/H	Twenty Four	99.99%	5000X2000X2300	2900Kg	
Sorting Mold	Old Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source	LED RGB three-primary color model lighting systems						
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



300 WIDTH / 64 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
B300	2 KW	1-3 T/H	TWO	99.99%	2750X980X1530	700kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			5400) Pixel			
Ejector			Super-High Spe	ed Matrix Eject	ors		
Light Source	LED RGB three-primary color model lighting systems						
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



600 WIDTH / 128 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight	
B600	2.5 KW	2-5 T/H	FOUR	99.99%	2750X1280X1530	800kg	
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification						
Camera Pix			540	0 Pixel			
Ejector			Super-High Spe	ed Matrix Ejec	tors		
Light Source		LED I	RGB three-primary c	olor model ligh	nting systems		
CCD Sensor	TOSHIBA Micron-sized superior HD RGB						
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)						

[►] Throughput in tons per hour depends on products.



1200 WIDTH / 256 CHANNELS





- > Multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight			
B1200	4.8 KW	3-8 T/H	EIGHT	99.99%	9.99% 2750X1950X1580				
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification								
Camera Pix	5400 Pixel								
Ejector	Super-High Speed Matrix Ejectors								
Light Source	LED RGB three-primary color model lighting systems								
CCD Sensor	TOSHIBA Micron-sized superior HD RGB								
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)								

[►] Throughput in tons per hour depends on products.



1200 WIDTH / 512 CHANNELS





- > Double Layer multipurpose optical sorting system
- > Rugged and durable, 5-year warranty
- > The machine can connect to the Internet via WIFI, allowing remote office and remote debugging.
- > Super-high Speed Matrix Ejectors, lifespan can reach 10 billion times
- > CCD sensor and camera imported from Japan, with a resolution of up to 5400
- > Easy to operate, can capture foreign objects with photos, Al automatically sorting impurity.

SPECIFICATION	Power	Capacity	Camera Number	Accuracy	Size (mm)	Weight			
DB1200	5 KW	3-10 T/H	SIXTEEN	99.99%	3400X2050X2500	1900kg			
Sorting Mold	Color identification / Size identification / Edge identification / Texture identification / Shape identification								
Camera Pix	5400 Pixel								
Ejector	Super-High Speed Matrix Ejectors								
Light Source	LED RGB three-primary color model lighting systems								
CCD Sensor	TOSHIBA Micron-sized superior HD RGB								
Touch Screen:	HITACHI 10.4 inch operation screen system (Remote debugging after connecting to WIFI)								

[►] Throughput in tons per hour depends on products.

MULTILAYER COLOR SORTER



TS-V型三层茶叶色选机 THREE-DECKED COLOR SORTER



备注:以绿茶分选为例说明,其他茶叶根据实际要求而定。

Note: the green tea sorting as an example, other tea according to the actual requirements of the

三、产品参数 TECHNOLOGY PARAMETERS

产品型号 Model	农业机械 编号 Noe	产量 (kg/h) Output	帶世比(坏:好) carryover rafe (bodigood)	选净率 (%) Accuary	电源电压 (v/Hz) Votage	功率(Kw) Power	Mpa) Air pressure	(L/min.) Consumption	机器重量 (Kg) Weight	外型尺寸 (mm) Dimensions
T3VS6	6CSX-384	<600) 5:1	> 99%	380V 50Hz	5.5-6.5	0.6-0.8	<5000	2650	2676×2530×2950

备注:以上色选参数以含杂3%绿茶为例,产量将根据原料含杂率不同而有所不同;同时主机外接电压为AC380/50HZ(三相五芯线)。 Note: the above parameters to contain mised I'll geen that on as an example, the output will be based on the raw material with different rate of different, of the same time, the man executed violage of AC3650FQ (three-phase five wile).

技术特点 TECHNICAL CHARACTERISTICS



1 一体化机电设计

DESIGN OF MECHANICAL-ELECTRICAL INTEGRATION 分选箱和电气箱一体化设计使得整机机械结构更加稳定。 提高机器使用寿命,维护更加简单。

The integration of sorting cabinet and electrical cabinet results in a more stable overall mechanical structure, prolonging the service life of the machine and making the maintenance much easier.



02 引入风冷散热系统

UTILIZATION OF AIR COOLING SYSTEM 解决LED光源因长时间使用导致温度高、损耗大、寿命短 等问题,确保LED光源恒温下持久耐用。

This system settles the problems of high temperature, heavy energy loss, light source instability, and short service lite which are caused by a longtime-woking LED light source. In addition, the system ensures an endurable light source used in a constant temperature.



15 行业内独创分料系统

THE ORIGINAL MATERIAL DISTRIBUTING SYSTEM IN THE INDUSTRY 最新设计"桥"式分料器,碳音低、抖动小、振动量大、 分料更均匀。解决了行业内分料器分料不均匀、产量跟 不上的难题。

The latest-designed Bridge-type material-distributor is featured with low noise, low litter amplitude, high vibration frequency; and more even softing, setting the problems of uneven sorting and underproduction, which are often seen in currently-used material-distributor material.



14 独立分选模式

INDEPENDENT SORTING MODE

一层、二层即可以独立设置色选或形选也可以独立设置形 选+色选任意组合模式.三层提供精选模式方案。不同需求、 自由组合、任意选配。

One layer, two layer that can be independently set color or shape can also be independently set up to choose a combination of color and color mode, there layer to posible a selection mode. Different needs, they combination, arbitrary selection.



55 独特宽体分选室设计

UNIQUE DESIGN OF BROADENING SORTING CHAMBER解决了茶叶因气流回旋而造成选别不净的问题,提高了

产量、降低分选过程中茶叶破碎率。

This design can solve the problem of partial tea sorting caused by switing air, increase the output and reduce the crashed rate during the couse of tea sorting.



O PARIS

独创自喷式吹嘴和阀门驱动模式,响应速度快、打击更精 准、带出比小、产量大、同时有效减少20%耗气量。

The original blowing nazle, tagether with the valve-driven mode, helps to accelerate theresponse speed, stills more accurately, reduce the material

accelerate theresponse speed, stille more accurately, reduce the materi taking-out ratio, increase the output, as well as decrease gas consumption by 20%.



07 图像采集系统

IMAGE ACQUISITION SYSTEM

全球顶级定制工业CCD传感器及色透机专用镇头,高清 断成像技术,拍照采集被选茶叶图像,可对被选茶叶中 不同颜色和形状的茶叶进行定义颜色。最小分辨率范围 在0.08mm²,可对微小病斑、针头黑点进行信号叠加放 大处理。

Customized world class industrial CCD sensor and color softer unique comes with the function of high defention image technology and photo collection technology, are capabled defining different color and shape in good tea the smallest size above 0.08mm/can enlarge the signal of small observational social and thry black and.



08 光源系统

LIGHT SOURCE

最新独创智能LED无影式令光源系统设计,具有发光率高 使用寿命更长、抗干扰性更强,同时识别更容易,判断更 轻松、选别更精准等特点,满足多种茶叶360度形选和色 选要求。

The lotter original intelligent LID shadow-hee cold light source system design,boats its high luminance, long life-service, high arti-interference, besides, is featured by easier identification and/udgment, more accountly choice and gradults, satisfying multiply requirements of singpe andocion chosen in all sepects for the



09 一体化设计

INTEGRATED DESIGN

三层、四层V型结构、一体化组合,便捷安装和日常维护 满足不同客户分选需求。

The three layer, four layer V structure, integration, convenient installation and daily maintenance to meet the needs of different customers.



■ V型分选组合

V TYPESORTING COMBINATION

可将前置分选箱分选后的废料,可至后置分选箱进行反选 一次分选完成成品和争模,色选精度更高、破碎率更低、 操作更加便捷。

Can be used to soff the pre-soffing box of warte, can be back to the rear of the soffing box, a soffing to complete the finaned product and the net, the color selection of higher accuracy, lower crushing rate, more convenient operation.

TS-V型四层茶叶色选机 FOUR-DECKED COLOR SORTER



二、T4VS6分选示意图 SORTING SKETCH MAP



三、产品参数 TECHNOLOGY PARAMETERS

产品型号 Model	农业机械 编号 Noe	产量 (kg/h) Output	開出比(坏:好) corryover rate (bod:good)	选净率 (%) Accuary	电源电压 (v/Hz) Votage	功率(Kw) Power	作原压力 (Mpa) Ar pressure	(L/min) Consumption	机器重量 (Kg) Weight	外型尺寸 (mm) Dimensions
T4VS6	6CSX-384	<800) 5:1	> 99%	380V 50Hz	6.8-8.6	0.6-0.8	<5400	3286	2676×2530×3432

备注:以上色选参数以含杂3%绿茶为例,产量将根据原料含杂率不同而有所不同;同时主机外接电压为AC380/50HZ(三相五芯线)。
Note: the above parameters to contain mixed 3% green fea as an example, the output will be based on the law material with different late of different, at the same firme, the many enterind viotage of AC380.50HZ three charges few every.



COLOR SORTER GROUP

Leading optical sorting solutions provider

Color sorting / Shape sorting / Size sorting / Material sorting / Al sorting

MSW Technology