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Guangzhou Jingyi Photoelectric Technology Co., Ltd

Testing center

# Testing report

SN: 892032JYS2507117001

Description	diffuse plate
Model	500*500mm

## Testing report overview

Description	diffuse plate				
Testing company	Guangzhou Jingyi Photoelectric Technology Co., Ltd	Tel	020-66376621		
Address	F1 Building, Najin Science and Technology Park, No. 39 Ruihe Road, Huangpu District, Guangzhou	Zip code	510700		
Testing date	2025/7/11	Qty	1		
Produce company	Guangzhou Jingyi Photoelectric Technology Co., Ltd				
Testing environment	Temp: 25°C	Humidity: 40%			
Testing address	F1 Building, Najin Science and Technology Park, No. 39 Ruihe Road, Huangpu District, Guangzhou				
Testing basis	<ul style="list-style-type: none"><li>➤ JJF 1232-2009 《Calibration specification for reflectance measurement》</li><li>➤ ASTM</li></ul>				

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Testing conclusion	<p>Parameter indicator testing for the diffuse reflection target board is as follows:</p> <p>Uniformity range: +/-1.5%</p> <p>Testing has confirmed that the indicator requirements are satisfied, as detailed in "Chapter 2 Test Results".</p> <p>Acceptance test result: Passed.</p>		
Operator	Liao shengquan	2025/7/11	 <p>Guangzhou Jingyu Optoelectronics Technology Co., Ltd. (Inspection seal) http://www.gzjygtd.com</p>

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# Chapter 1 Pass criterion

## 1.1 Testing pass criterion

According to the severity level and number of failed items found during the detection, if all the following conditions are met, the testing result is passed, otherwise, the testing result is failed.

- An error with severity level 1 does not exist;
- Number of errors with severity level 2  $\leq 2$ ;
- Number of errors with severity level 3  $\leq 3$ .

The testing conclusion is passed, but there are still failed items, the failed items should be improve and then testing to ensure that all the failed items have been updated.

### Definition and description of problem levels

Problem level		Description	
1	Lethal	untestable	The structure of the diffuser plate is seriously deformed
			The reflectance error is serious
			Serious errors in size and thickness
2	Severity	The diffuse plate cannot be use normally	The structure of the diffuser plate is slightly deformed
			The reflectance is biased
			Slightly decrease in size
			Thickness error

3	General	The diffuser plate has defects, but does not affect using the main function	Slight deformation around diffuser plate
			The reflectance is biased, but with small error
			The dimension is biased, but with small error
			The thickness is biased, but with small error

## 1.2 Index pass criterion

The testing result must meet the following parameters. Otherwise, the testing result fails. uniformity range: +/-1.5%

## Chapter 2 Testing result

uniformity range: +/-1.5%

## Chapter 2 Testing result

No.	Item	Description	Testing result
1	reflectance error	The average reflectance@250-800nm: 6.51% uniformity: +/-0.16%	Passed

## 1.3 Testing items and methods

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### 1.3.1 Reflectance error

#### 1.3.1.1 Testing methods

Using the American Marine optical reflectance test system for testing, The light source is D65, integrating sphere angle: D8 degrees, test data can be traced to the National Institute of Standards and Technology (NIST).

##### Testing steps

###### 1. Starting up and calibration

After the reflectance testing system is preheated, put the zero board in the measuring hole, after the reflectance detection system is preheated, put the zero-adjusting blackboard in the measuring hole. After the zero adjustment, take off the blackboard and replace it with a standard white board for reflectance calibration. After the instrument is calibrated, it enters the measuring state.

###### 2. Testing data of CST diffuser plate

The CST diffuser plate is tested with the reflectance testing system and the data is recorded. Sample-integrating sphere

$$\bar{R}_{250-800nm} = \frac{\sum R_i}{i}$$

The acceptable tolerance for uniformity is the absolute reflectance range on either side of the average reflectance.

$$\text{均匀范围} = R_{250-800nmmin} < \bar{R}_{250-800nm} < R_{250-800nmmax}$$

## Testing data

Wave length (nm)	RT(1)	RT(2)	RT(3)	RT(4)	RT(5)	RT(6)	RT(7)	RT(8)	RT(9)	Average value
250	8.41	8.24	8.68	8.47	8.35	8.57	8.25	8.69	7.93	8.40
255	8.11	7.94	8.37	8.16	8.05	8.26	7.95	8.39	7.63	8.10
260	7.85	7.69	8.12	7.91	7.80	8.01	7.70	8.14	7.37	7.84
265	8.05	7.88	8.31	8.10	7.99	8.20	7.89	8.33	7.56	8.04
270	7.89	7.73	8.16	7.95	7.84	8.05	7.74	8.17	7.41	7.88
275	8.05	7.88	8.31	8.10	7.99	8.20	7.89	8.33	7.56	8.03
280	7.68	7.51	7.94	7.73	7.62	7.83	7.52	7.96	7.19	7.67
285	7.62	7.46	7.89	7.68	7.57	7.78	7.47	7.91	7.14	7.61
290	7.84	7.67	8.10	7.90	7.78	7.99	7.68	8.12	7.36	7.83
295	7.57	7.41	7.84	7.63	7.52	7.73	7.42	7.86	7.09	7.56
300	7.48	7.32	7.75	7.54	7.43	7.64	7.33	7.77	7.00	7.47
305	7.49	7.33	7.76	7.55	7.44	7.65	7.34	7.78	7.01	7.48
310	7.40	7.24	7.67	7.46	7.35	7.56	7.25	7.69	6.92	7.39
315	7.26	7.09	7.52	7.31	7.20	7.41	7.10	7.54	6.77	7.24
320	7.16	7.00	7.43	7.22	7.11	7.32	7.01	7.44	6.68	7.15
325	7.09	6.93	7.36	7.15	7.04	7.25	6.94	7.37	6.61	7.08
330	7.10	6.93	7.36	7.15	7.04	7.25	6.94	7.38	6.62	7.09
335	7.13	6.97	7.40	7.19	7.08	7.29	6.98	7.41	6.65	7.12
340	7.12	6.95	7.38	7.17	7.06	7.27	6.96	7.40	6.63	7.11
345	7.18	7.01	7.44	7.23	7.12	7.33	7.02	7.46	6.70	7.17
350	7.08	6.91	7.35	7.14	7.02	7.24	6.93	7.36	6.60	7.07
355	7.11	6.95	7.38	7.17	7.06	7.27	6.96	7.39	6.63	7.10
360	7.09	6.92	7.35	7.14	7.03	7.24	6.93	7.37	6.60	7.08
365	6.89	6.73	7.16	6.95	6.84	7.05	6.74	7.18	6.41	6.88
370	6.85	6.68	7.11	6.90	6.79	7.00	6.69	7.13	6.37	6.84
375	6.80	6.63	7.06	6.85	6.74	6.95	6.64	7.08	6.31	6.78
380	6.85	6.69	7.12	6.91	6.80	7.01	6.70	7.13	6.37	6.84
385	6.95	6.79	7.22	7.01	6.90	7.11	6.80	7.24	6.47	6.94
390	6.86	6.69	7.12	6.91	6.80	7.01	6.70	7.14	6.37	6.85
395	6.95	6.78	7.21	7.00	6.89	7.10	6.79	7.23	6.47	6.94

400	6.85	6.56	7.02	6.87	6.66	6.82	6.69	7.13	6.26	6.76
405	6.90	6.89	6.92	6.76	7.20	7.19	6.77	6.99	6.79	6.93
410	6.51	6.49	6.76	6.54	6.99	6.59	6.62	6.87	6.43	6.64
415	6.88	6.88	6.86	6.77	7.03	6.61	6.48	7.14	6.45	6.79
420	7.14	6.85	6.70	6.54	6.40	6.51	6.39	6.53	6.42	6.61
425	7.02	6.94	6.96	7.22	6.94	6.66	6.59	6.85	6.64	6.87
430	6.83	6.80	6.72	6.69	6.77	6.48	6.70	6.89	6.63	6.72
435	6.61	6.56	6.51	6.47	6.47	6.59	6.37	6.65	6.52	6.53
440	6.27	6.32	6.58	6.48	6.63	6.21	6.20	6.33	6.16	6.35
445	6.52	6.54	6.52	6.50	6.47	6.43	6.30	6.57	6.26	6.46
450	6.41	6.63	6.62	6.49	6.63	6.66	6.58	6.61	6.55	6.57
455	6.35	6.55	6.52	6.50	6.49	6.51	6.49	6.59	6.36	6.48
460	6.30	6.49	6.53	6.48	6.47	6.58	6.45	6.57	6.38	6.47
465	6.36	6.44	6.47	6.46	6.47	6.41	6.34	6.45	6.33	6.41
470	6.59	6.48	6.56	6.51	6.43	6.42	6.43	6.56	6.42	6.49
475	6.49	6.49	6.50	6.41	6.41	6.47	6.49	6.47	6.41	6.46
480	6.38	6.37	6.39	6.40	6.37	6.38	6.34	6.52	6.34	6.39
485	6.27	6.29	6.44	6.29	6.33	6.28	6.32	6.43	6.38	6.34
490	6.43	6.32	6.41	6.48	6.34	6.32	6.27	6.45	6.34	6.37
495	6.46	6.41	6.37	6.33	6.33	6.38	6.36	6.44	6.29	6.37
500	6.40	6.38	6.41	6.41	6.40	6.30	6.29	6.53	6.36	6.39
505	6.28	6.19	6.18	6.27	6.23	6.15	6.18	6.17	6.17	6.20
510	6.28	6.29	6.28	6.23	6.33	6.15	6.21	6.27	6.19	6.25
515	6.37	6.29	6.10	6.18	6.21	6.18	6.09	6.31	6.10	6.20
520	6.25	6.34	6.25	6.23	6.37	6.29	6.19	6.27	6.25	6.27
525	6.16	6.16	6.17	6.15	6.30	6.14	6.13	6.20	6.11	6.17
530	6.24	6.21	6.28	6.16	6.25	6.18	6.11	6.23	6.19	6.21
535	6.16	6.11	6.22	6.10	6.22	6.21	6.10	6.23	6.11	6.16
540	6.21	6.18	6.19	6.23	6.23	6.13	6.10	6.20	6.16	6.18
545	6.26	6.20	6.20	6.22	6.22	6.13	6.22	6.24	6.23	6.21
550	6.21	6.18	6.20	6.18	6.20	6.22	6.06	6.23	6.14	6.18
555	6.23	6.22	6.25	6.18	6.23	6.25	6.18	6.24	6.19	6.22
560	6.17	6.13	6.13	6.14	6.16	6.14	6.11	6.12	6.13	6.14
565	6.16	6.16	6.19	6.22	6.17	6.18	6.20	6.22	6.20	6.19

570	6.18	6.18	6.19	6.17	6.15	6.16	6.18	6.18	6.17	6.17
575	6.20	6.21	6.15	6.18	6.19	6.13	6.13	6.24	6.11	6.17
580	6.19	6.20	6.22	6.26	6.19	6.16	6.21	6.26	6.23	6.21
585	6.18	6.22	6.15	6.25	6.19	6.20	6.12	6.23	6.07	6.18
590	6.12	6.15	6.18	6.18	6.19	6.10	6.17	6.20	6.10	6.15
595	6.18	6.15	6.17	6.21	6.18	6.18	6.13	6.21	6.15	6.17
600	6.07	6.15	6.11	6.14	6.11	6.12	6.13	6.13	6.10	6.12
605	6.08	6.10	6.11	6.04	6.03	6.09	6.06	6.06	6.03	6.07
610	6.08	6.16	6.15	6.14	6.14	6.20	6.15	6.13	6.19	6.15
615	6.08	6.06	6.12	6.05	6.11	6.09	6.02	6.12	6.02	6.07
620	6.13	6.13	6.06	6.10	6.13	6.13	6.13	6.10	6.09	6.11
625	6.03	6.04	6.01	6.07	6.12	6.05	6.03	6.11	6.05	6.06
630	6.10	6.02	6.11	6.06	6.09	6.08	6.01	6.17	6.09	6.08
635	6.08	6.13	6.06	6.04	6.03	6.08	6.08	6.13	6.02	6.07
640	6.05	6.07	6.03	6.07	6.04	6.04	6.05	6.07	6.01	6.05
645	6.01	6.09	6.01	6.02	6.03	6.08	6.02	6.10	6.02	6.04
650	6.09	6.08	6.09	6.01	6.06	6.05	6.03	6.12	6.09	6.07
655	6.04	6.04	6.06	6.02	6.06	6.04	6.00	6.04	6.03	6.04
660	6.08	6.06	6.06	6.04	6.05	6.07	6.01	6.08	6.03	6.06
665	6.03	6.06	5.96	6.01	6.03	6.03	6.01	6.04	6.02	6.02
670	6.00	6.04	6.02	5.98	6.01	6.06	5.99	6.07	6.01	6.02
675	6.08	6.11	6.08	6.09	6.10	6.10	6.05	6.11	6.08	6.09
680	6.04	6.07	6.10	6.04	6.08	6.07	6.04	6.07	6.02	6.06
685	6.06	6.05	6.10	6.06	6.10	6.04	6.02	6.04	6.05	6.06
690	6.07	6.05	6.04	6.03	6.09	6.02	6.02	6.11	6.08	6.06
695	6.02	6.09	6.02	6.06	6.06	5.99	6.02	6.05	6.08	6.04
700	6.07	6.06	6.04	6.07	6.03	6.01	6.05	6.09	6.02	6.05
705	5.99	6.01	5.96	6.02	6.02	6.03	6.00	6.02	6.00	6.01
710	6.03	6.05	5.97	6.04	6.07	6.03	5.99	6.05	6.08	6.04
715	6.03	6.06	6.03	6.04	6.06	6.10	6.00	6.07	6.06	6.05
720	6.02	6.08	6.08	6.07	6.09	6.01	6.05	6.08	6.01	6.05
725	6.04	6.06	6.07	6.04	6.05	6.02	6.02	6.03	5.99	6.04
730	6.04	6.00	6.00	6.01	6.03	5.97	6.01	6.02	5.98	6.01
735	6.07	6.04	6.02	6.03	6.09	6.01	6.07	6.06	6.04	6.05

740	5.95	5.98	5.98	6.01	6.00	5.99	5.95	6.00	5.95	5.98
745	6.06	6.00	5.97	6.06	5.99	6.02	6.01	5.98	6.02	6.01
750	6.03	6.07	6.02	6.00	6.04	6.00	6.04	6.06	6.03	6.03
755	6.04	6.03	6.04	6.00	6.03	5.96	6.02	6.01	6.02	6.02
760	5.95	5.99	5.99	6.03	6.01	5.97	5.97	6.01	5.95	5.99
765	5.99	5.99	5.97	5.98	5.99	5.98	5.99	6.01	5.99	5.99
770	5.99	6.00	5.99	5.93	5.97	6.00	5.95	6.02	5.91	5.97
775	5.91	5.86	5.85	5.88	5.96	5.89	5.91	5.96	5.94	5.91
780	5.87	5.91	5.87	5.87	5.95	5.90	5.90	5.93	5.91	5.90
785	5.89	5.91	5.87	5.86	5.90	5.88	5.88	5.87	5.83	5.88
790	5.87	5.84	5.90	5.89	5.86	5.91	5.81	5.87	5.84	5.87
795	5.83	5.85	5.89	5.90	5.87	5.83	5.85	5.86	5.83	5.86
800	5.76	5.86	5.84	5.82	5.81	5.82	5.84	5.86	5.90	5.83
Average value	6.52	6.47	6.59	6.53	6.51	6.54	6.44	6.62	6.35	6.51

Diffuse test results(consistency)

表 I

	A	B	C
1	6.52	6.47	6.59
2	6.53	6.51	6.54
3	6.44	6.62	6.35

The numbers in table I are absolute reflectance values

Table II

mean reflectance@250-800nm uniformity	6.51% +/-0.16%
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The values in Table II are average reflectance and reflectance uniformity