



## SPECIFICATION

**Product Name:** PAR20 25W LED Spotlight

**Product Model:** L4D-PAR20-025

**Description:** PAR20 Spotlight / 25W / Active Cooling

**Version Date** 2018. Aug.

## 25W LED PAR20 Spotlight

25W-PAR20 spotlight is a compact, anti-glare LED light source, can radiate emphasis light beam like halogen lamp or incandescent lamp dose, it is a ideal lighting solution for Exhibition, Jewelry, Clothing, Furniture, Food and Hotel etc, particularly good at accent lighting and public lighting demands.

Using 25W PAR20 will save considerable energy and have much longer life span than traditional lights, beside, reduce maintenance costs.

As a replace lamp, 25W PAR20 is compatible with most traditional lamps and lantern t.

### 1. Product Features

>> Low maintenance cost

>> 50%~80%

Energy saving 50%~80% compare to Halogen and incandescent lamps

>> Delicate shape design

>> Eco-friendly, no UV and IR, no mercury or other deleterious material, environmental!

>> Adopt active cooling technology, extend lifespan and increase the watt density

>> Variety of beam angle several beam angle 25/45 degree for option

>> Use original OSRAM LED, with low light failure, high CRI and high-quality illumination.

### 2. Applications

>>Jewelry store, cosmetic store. >>Furniture

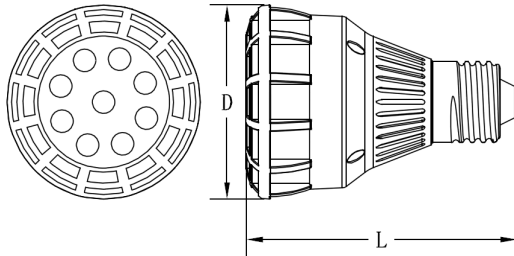
store, hotel, coffee shop, etc. >>Other

applications with traditional ceiling spotlights.

>>Other accent and basic lighting applications.



### 3. Product Parameters



Model No.	Diameter (D)	Height (L)
S-PAR20-025	63.5 mm	90 mm

Model	Power	CCT	Angle	Lumen	CRI
S-PAR20-025-BW#-02	25W	2800-3200K	15°/25°/ 45°/ 60°	1250	80
S-PAR20-025-BN#-02	25W	3800-4200K	15°/25°/ 45°/ 60°	1400	80
S-PAR20-025-BC#-02	25W	5500-6500K	15°/25°/ 45°/ 60°	1650	70
S-PAR20-025-WW#-2	25W	2800-3200K	15°/25°/ 45°/ 60°	1250	80
S-PAR20-025-WN#-02	25W	3800-4200K	15°/25°/ 45°/ 60°	1400	80
S-PAR20-025-WC#-02	25W	5500-6500K	15°/25°/ 45°/ 60°	1650	70

#### PAR20 Spotlight

<b>Model</b>	S-PAR20-025-02
<b>Input Voltage</b>	AC100-240V 50/60Hz
<b>Input Current</b>	0.11A~0.27A
<b>Power</b>	25W
<b>Power Factor</b>	PF>0.9
<b>Harmonic Wave</b>	<20%
<b>LED Source QTY</b>	Osram LED x 9pcs
<b>IP Rate</b>	IP30
<b>Anti-electric shock Rate</b>	CLASS II
<b>Dimmable</b>	No
<b>LED Life Span</b>	>30000H
<b>Working Condition</b>	-20~+40°C / 0-90% (RH)
<b>Storage Condition</b>	-20~+75°C / 0-90% (RH)
<b>Lamp Base</b>	E27 / E26
<b>Net Weight</b>	0.115Kg

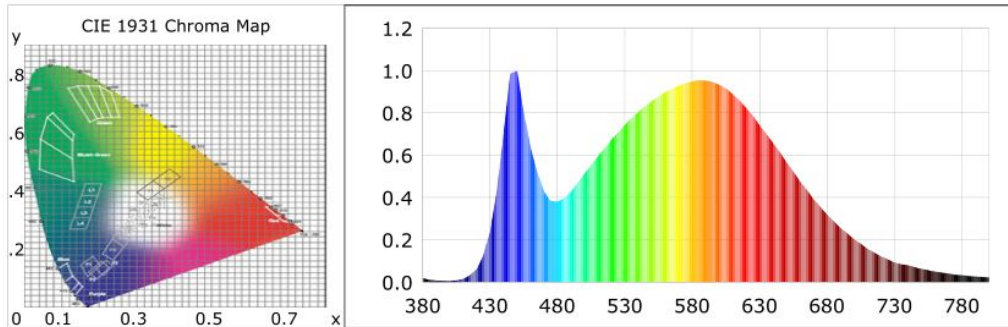
## 4. Light Characteristics

### 1. Spectral Analysis system Test Report

#### 4000K

##### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3706$   $y=0.3735$   $u(u')=0.2199$   $v=0.3325$   $v'=0.4987$   
 CCT:  $T_c=4258K$  ( $duv=0.00150$ ) Color Ratio:  $R=0.189$   $G=0.775$   $B=0.036$   
 Peak Wavelength: 450nm Half Bandwidth: 29.9nm  
 Dominant Wavelength: 578.1nm Color Purity: 0.233  
 Rendering Index:  $R_a=83.8$   
 $R1=82$   $R2=89$   $R3=93$   $R4=83$   $R5=82$   $R6=84$   $R7=88$   $R8=70$   
 $R9=20$   $R10=72$   $R11=80$   $R12=64$   $R13=83$   $R14=96$   $R15=78$



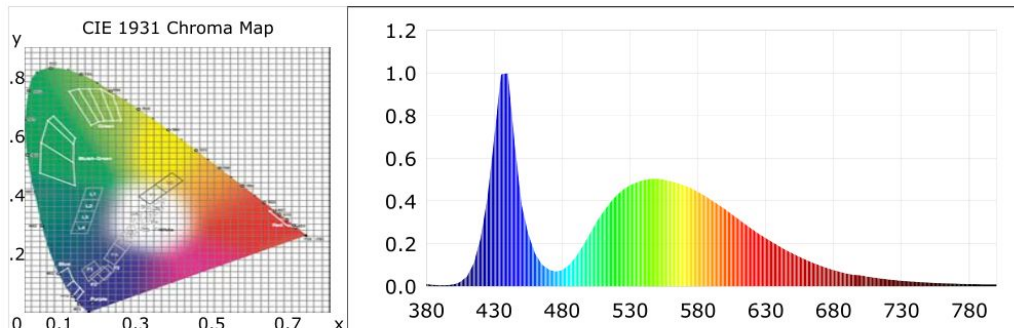
##### Photometric Parameters

Luminous Flux: 1648.2 lm Efficiency: 70.14 lm/W  
 Radiant Power: 5.276 W

#### 6000K

##### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3176$   $y=0.3435$   $u(u')=0.1958$   $v=0.3177$   $v'=0.4766$   
 CCT:  $T_c=6174K$  ( $duv=0.00809$ ) Color Ratio:  $R=0.128$   $G=0.845$   $B=0.027$   
 Peak Wavelength: 440nm Half Bandwidth: 21.5nm  
 Dominant Wavelength: 501.2nm Color Purity: 0.048  
 Rendering Index:  $R_a=66.9$   
 $R1=69$   $R2=66$   $R3=64$   $R4=72$   $R5=72$   $R6=58$   $R7=71$   $R8=64$   
 $R9=-23$   $R10=19$   $R11=77$   $R12=42$   $R13=65$   $R14=79$   $R15=63$



##### Photometric Parameters

Luminous Flux: 1781.1 lm Efficiency: 76.12 lm/W  
 Radiant Power: 5.608 W

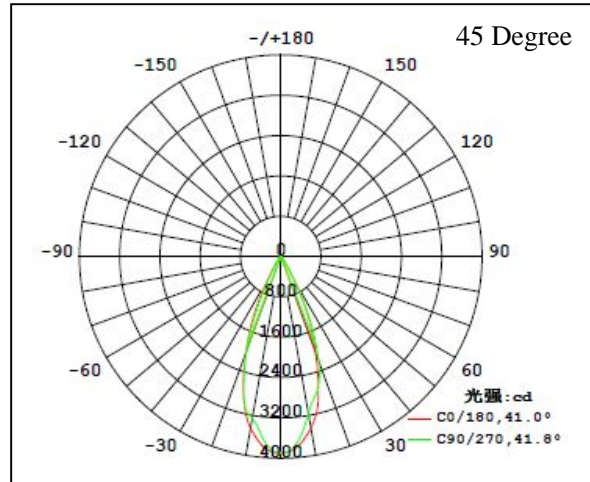
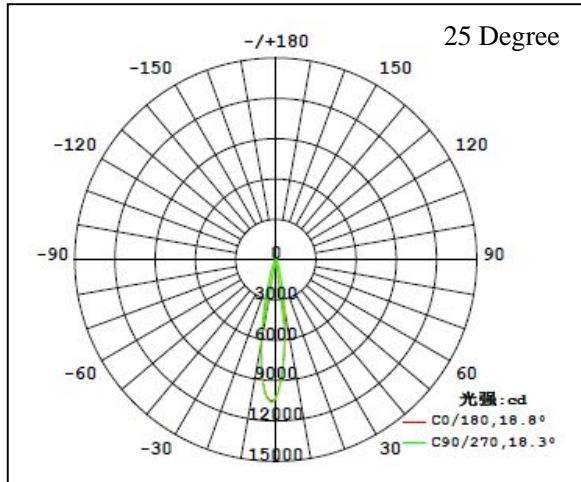
### Lighting 4 Diamonds, Inc.

10844 SW 188th St, Miami, FL, 33157 USA

Toll Free: +1 855 326 6645 / (786) 250 0007 Toll Free Fax: +1 855 326 6646 / Fax: (786) 250 0008

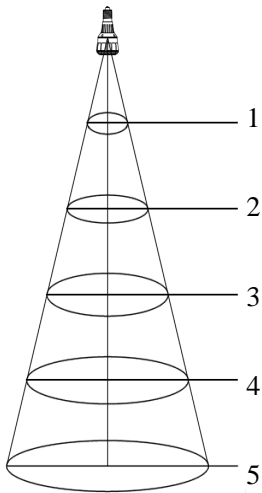
[www.Lighting4Diamonds.com](http://www.Lighting4Diamonds.com) [info@Lighting4Diamonds.com](mailto:info@Lighting4Diamonds.com)

**2. Light Distribution**



**3. Illuminance Diagram**

**Warm White (3000K)**



Angle Distance	25 Degree		45 Degree		60 Degree	
	Ctr Lux	Spot Size	Ctr Lux	Spot Size	Ctr Lux	Spot Size
1m	13505 lx	27.3cm	6507 lx	36.2cm	3477 lx	55cm
2m	3376 lx	54.7cm	1627 lx	72.4cm	869.3 lx	110cm
3m	1501 lx	82cm	723 lx	108.6cm	386.3 lx	165cm
4m	844 lx	109.4cm	406.7 lx	144.8cm	220 lx	220cm
5m	540 lx	136.8cm	260.3 lx	181cm	139.1 lx	275cm

**Cool White (6000K)**

Angle Distance	25 Degree		45 Degree		60 Degree	
	Ctr Lux	Spot Size	Ctr Lux	Spot Size	Ctr Lux	Spot Size
1m	16658 lx	27.8cm	8404 lx	35.7cm	4463 lx	55cm
2m	4164 lx	55.6cm	2101 lx	71.3cm	1116 lx	107.8cm
3m	1851 lx	83.4cm	933.8 lx	107cm	496 lx	164.5cm
4m	1041 lx	111.1cm	525.3 lx	142.6cm	279 lx	219.6cm
5m	666.3 lx	139cm	336.2 lx	178.2cm	178.5 lx	274.4cm

## 5. Life span test for LED and micro fan

### 1. OSRAM LED life span test

After 10,000 hrs long-term working under 85°C (Al PCB), lumen dropt 8%.

Device: OSRON SSL (LUW CQ7P)

Test Condition II: T<sub>s</sub> = 85°C, I<sub>F</sub> = 700mA

Lumen Maintenance (I<sub>F</sub> = 350mA) – Normalized to 24 h

	0	24	48	168	500	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
1	100.00	100.00	99.38	98.35	98.35	97.44	95.81	94.79	94.24	92.89	92.32	91.38	91.07	90.54	90.50
2	100.09	100.00	99.18	98.27	98.27	97.26	95.89	95.16	94.43	92.89	92.51	91.57	91.28	90.73	90.89
3	100.00	100.00	99.55	98.47	98.12	97.38	96.02	95.20	94.48	92.78	92.75	91.81	91.50	90.98	90.92
4	99.91	100.00	99.72	99.26	99.26	98.34	97.14	96.41	95.85	94.38	94.47	93.51	93.20	92.65	92.61
5	98.97	100.00	99.44	98.12	98.11	97.29	95.98	95.23	94.39	93.14	93.18	92.23	91.92	91.39	91.34
6	100.00	100.00	99.73	98.78	99.22	97.90	96.44	95.06	94.88	93.69	93.61	92.88	92.35	91.81	91.77
7	99.82	100.00	99.54	98.70	98.50	97.93	96.45	95.72	94.90	93.44	93.45	92.50	92.19	91.65	91.61
8	99.91	100.00	99.63	98.77	98.92	97.90	96.61	95.79	95.06	93.60	93.70	92.75	92.44	91.80	91.85
9	99.81	100.00	99.81	99.05	99.39	99.07	97.95	97.39	96.84	95.43	95.45	94.48	94.16	93.61	93.57
10	100.09	100.00	99.64	98.53	98.33	97.46	96.20	95.38	94.47	93.12	93.03	92.09	91.78	91.24	91.20
11	99.82	100.00	99.72	99.26	99.44	97.51	96.31	95.30	95.02	93.91	94.10	93.14	92.83	92.29	92.25
12	100.00	100.00	99.72	99.17	99.54	98.24	96.94	95.92	95.45	94.34	94.53	93.57	93.25	92.71	92.67
13	99.63	100.00	99.82	99.17	100.10	98.82	97.61	96.78	96.32	95.13	95.22	94.25	93.94	93.39	93.34
14	99.73	100.00	99.73	99.08	99.28	98.08	96.82	95.89	95.16	94.08	94.25	93.29	92.98	92.43	92.39
15	100.00	100.00	99.72	99.15	99.42	98.42	97.12	96.47	95.72	94.60	94.52	93.58	93.25	92.70	92.66
16	99.91	100.00	99.73	99.27	97.82	97.26	95.97	95.15	94.33	93.14	92.88	91.92	91.61	91.07	91.03
17	99.81	100.00	99.81	99.26	99.35	98.41	97.20	96.38	95.71	94.50	94.49	93.53	93.22	92.67	92.63
18	99.73	100.00	99.73	98.82	99.11	98.26	96.88	96.24	95.51	94.32	94.31	93.35	93.04	92.49	92.45
19	99.81	100.00	99.44	98.79	98.61	97.98	96.74	95.90	95.07	93.95	93.76	92.81	92.50	91.95	91.91
20	99.72	100.00	99.81	98.88	99.07	98.50	97.38	96.64	95.98	94.86	94.86	93.90	93.58	93.03	92.99
21	99.72	100.00	99.82	98.06	98.60	97.88	96.78	96.04	95.40	94.39	94.39	93.43	93.12	92.57	92.53
22	99.91	100.00	99.64	98.47	98.30	97.55	96.10	95.29	94.47	93.20	92.74	91.80	91.49	90.95	90.91
23	100.09	100.00	99.72	98.80	98.62	97.51	96.22	95.40	94.66	93.37	93.28	92.33	92.02	91.48	91.44
24	99.72	100.00	99.91	99.51	99.85	99.08	97.97	97.33	96.69	95.67	95.68	94.71	94.39	93.84	93.80
25	99.91	100.00	99.72	98.84	98.71	97.50	96.21	95.47	94.55	93.44	93.45	92.50	92.19	91.65	91.61
median	99.91	100.00	99.72	98.80	98.92	97.96	96.61	95.79	95.06	93.91	93.78	92.81	92.50	91.95	91.91
average	99.84	100.00	99.67	98.79	98.89	97.93	96.65	95.85	95.18	93.91	93.88	92.92	92.61	92.07	92.03
std. dev.	0.22	0.00	0.17	0.40	0.59	0.55	0.64	0.71	0.73	0.84	0.93	0.92	0.91	0.91	0.91
min.	98.97	100.00	99.18	98.06	97.82	97.26	95.81	94.79	94.24	92.69	92.32	91.38	91.07	90.54	90.50
max.	100.09	100.00	99.91	99.51	100.10	99.08	97.97	97.39	96.69	95.67	95.68	94.71	94.39	93.84	93.80

### 2. Micro fan life span test

The life span for Fan is 27943 hours under condition of working temperature 70°.



#### Life Test Report

Date: Oct.12.2011

Model NO.	HA40101V4-000C-999		Test Condition		Test Result				
Spec.	Speed	4,500 RPM	Input voltage	12 VDC	Failed Q'ty		5		
	Current	0.065 AMP	Temperature	70°C	Life Expectancy	L10 (hours)	20,081		
Sample tested	50 Pcs	Orientation	Vertical	MTTF (hours)		31,566			
Test hours/Each	20,160 Hours	Running	In Free Air						
Failure Definition			Test Result , (Including Time To Failure , Datum , Statistics ..... etc)						
1. No function.			Accu.F/Q	TTF(Hrs)	UUT	Accu.F/R	Finding		
2. RPM under 15% of original			1	12,432	49	2.00%	Speed under 15%		
3. Current over 15% of original			2	14,952	48	4.00%	Speed under 15%		
4. Noise over 3dB(A) of original			3	16,800	47	6.00%	Speed under 15%		
			4	18,480	46	8.00%	Speed under 15%		
			5	20,160	45	10.00%	Speed under 15%		
* The Life Expectancy of this fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Report( L10/ MTTF Report) that relates to this fan is only for reference.									
Life calculation according to the equation for Weibull distribution to obtain relevant data			Accelerate Factor ; AF = 1.5 (Testing Temp. - Operating Temp.)/10						
Shape parameter;β	4.0974	Temp. Range	30°C	40°C	50°C	60°C	70°C		
Characteristic parameter; θ	34,778 hrs	AF (Multiple)	5.06	3.38	2.25	1.50	1.00		
MTTF = θ x Γ(1 + 1/β)	31,566 hrs	MTTF (hours)	159,803	106,535	71,024	47,349	31,566		
L10 = θ x (0.10536)^(1/β)	20,081 hrs	L10 (hours)	101,660	67,773	45,182	30,122	20,081		
Approved by:	<i>Angeline</i>		Checked by:	<i>Jony-chiu</i>		Tested by:	<i>Dallice</i>		

No. : L1110028A

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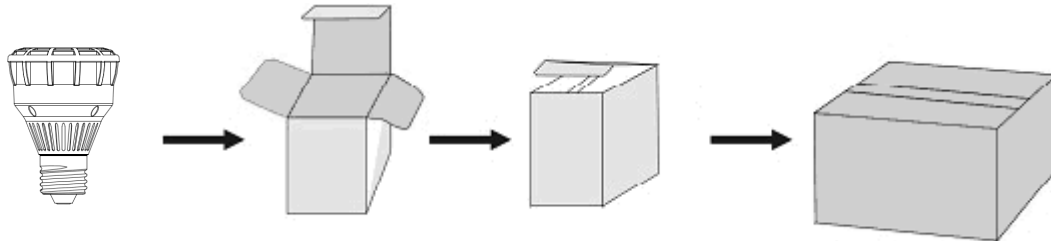
10844 SW 188th St, Miami, FL, 33157 USA

Toll Free: +1 855 326 6645 / (786) 250 0007 Toll Free Fax: +1 855 326 6646 / Fax: (786) 250 0008

[www.Lighting4Diamonds.com](http://www.Lighting4Diamonds.com) [info@Lighting4Diamonds.com](mailto:info@Lighting4Diamonds.com)

## 6. Packaging:

### 1. Package Drawing



### 2. Packing Specification

N.W.	Unit Box Size	G.W.	Carton Size	QTY	Carton G.W.
0.115Kg	67*67*97mm	0.13Kg	310*220*280mm	36pcs	5Kg

## 7. Installation:

1. Install this lamp into lanterns which is fit for E26/E27
2. Once replacing CDM-R /MHL, please remove the ballast.

## 8. Attention

1. Non-waterproof, only for indoor use.
2. Do not disassemble this lamp personally, in case of any damage.
3. LED lamp can not work under dead air environment, make sure air is flowing.
4. Build-in cooling fan, do not use in dusty application to ensure long lifetime.
5. Power off before replace lamps.
6. Do not use LED lamp under inflammable, explosive or corrosive environment, avoiding high temperature.
7. Make the shell of lamp cool before replacing it to avoid scalding.
8. Make sure input voltage is suitable for LED lamp, or irreparable damage can be made.
9. Problematic lamp needs professional maintenance.