

Approval Sheet

- **FZled MR16-01-3W**
- **FZled MR16-01-5W**

Approval Sheet

FZled MR16-01-3W Specification



FZtech Inc.

5F-6, No. 496, BanNan Rd., Jung He city, Taipei, Taiwan, 235, R.O.C

Tel: +886 2 2228-7885

Fax: +886 2 228-8938

Website: www.FZtech.com.tw; www.FZled.com.tw



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FZtech Inc.

5F-6., No. BanNan Rd.

JungHe City, Taipei

Taiwan 235, R.O.C

886-2-2228-7885

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Fax: +886 2 228-8938

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Revision History

Data	Rev.	Description of change
2009/11/18	1.0	First release
2010/01/23	1.1	Change P/N



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Website: www.FZtech.com.tw; www.FZled.com.tw

Model Name

P/N	Description
AIMR1603WCBC0A	MR16, 30°, 3000K (WW)- 3W
AIMR1603WFBC0A	MR16, 60°, 3000K (WW)- 3W
AIMR1603CCBC0A	MR16, 30°, 6000K (CW)- 3W
AIMR1603CFBC0A	MR16, 60°, 6000K (CW)- 3W



Chapter 1 Introduction

FZtech has high C/P products in **MR16** series **LED Bulbs**. It uses **BRT High Power LED** light source series products. It can replace traditional MR16 type bulbs with long lifetime (up to 35000 hrs), high luminous efficacy and reduces environmental pollution. MR16 can use standard GU5.3 socket to conveniently replaces traditional light source and suitable for use 12V AC/DC.

1-1 Features

- Energy Saving
- No heat, No UV, or IR light radiation
- Light source: BRT High power LED
- Ra>75 for white light
- Long life time up to 35000 hours (L₇₀)
- GU 5.3 socket compatible
- Power consumption up to 3.6 W for FZled MR16.
- High power driver efficiency > 87%
- Compatible with electronic transformers without LED driver

1-2 Typical Application

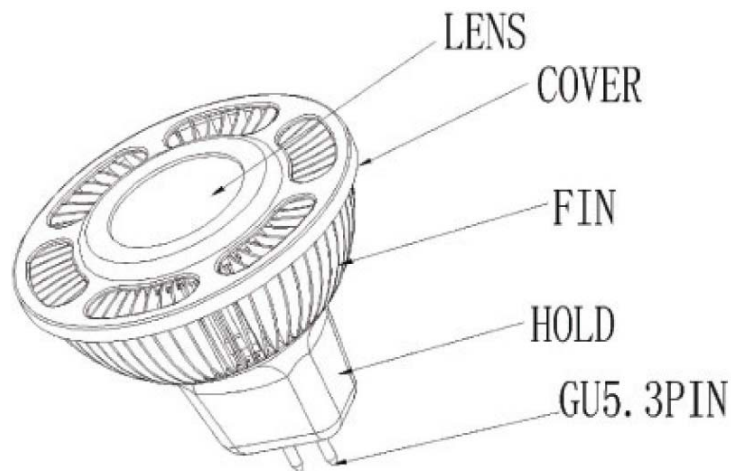
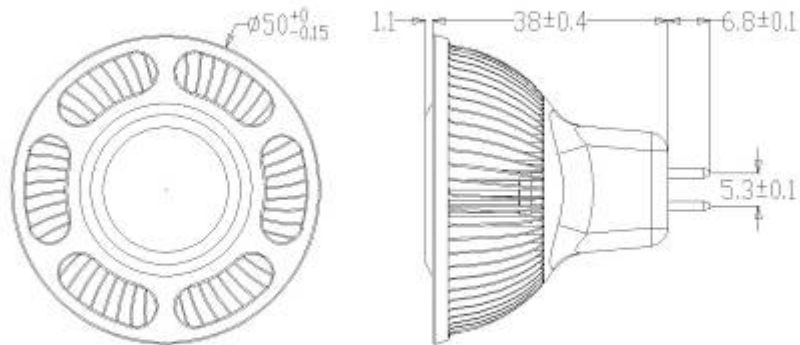
- Indoor Lighting
- Architectural Lighting
- Flood Lighting
- Mood Lighting
- Biological Lighting
- GU 5.3 socket replacement

Chapter 2 Specification

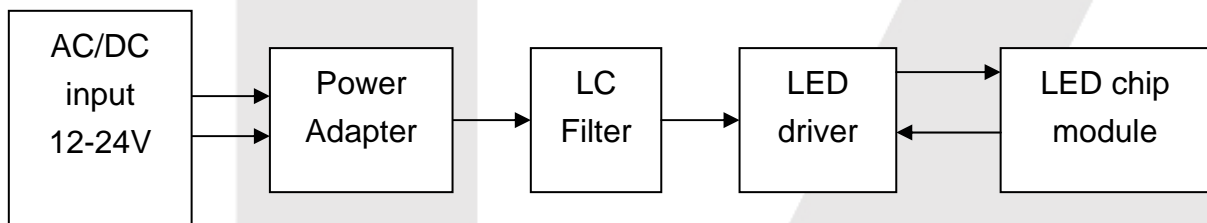
2-1 Specification

	FZL-MR16-01-WW-3W		FZL-MR16-01-CW-3W	
LED	BRT High Power LED			
Housing	Al.			
LED No.	1 Pcs			
Power Consumption	3.6 W			
Input Voltage	12V DC			
Input Frequency	50-60 Hz			
LED Rated Voltage	5V			
LED Rated Current	700 mA			
LED Drive Voltage	3.5V			
Electrical Efficiency	> 80%			
Power Factor Control	> 0.9			
Thermal Resistance	4.5 °C/W			
Socket	GU 5.3			
Operation Temperature	-20°C - +40°C			
CCT	3000K		6000K	
CRI	>80		>75	
Beam Angle	30	60	30	60
Over Current Protection	Yes			
Reversed Polarity Protection	Yes			
Luminous Flux (lm)	85 (lm)---3000K		105 (lm)---6000K	
Dimension	D50 X 44.8 (mm)		D50 X 44.8 (mm)	

2-2 Dimension

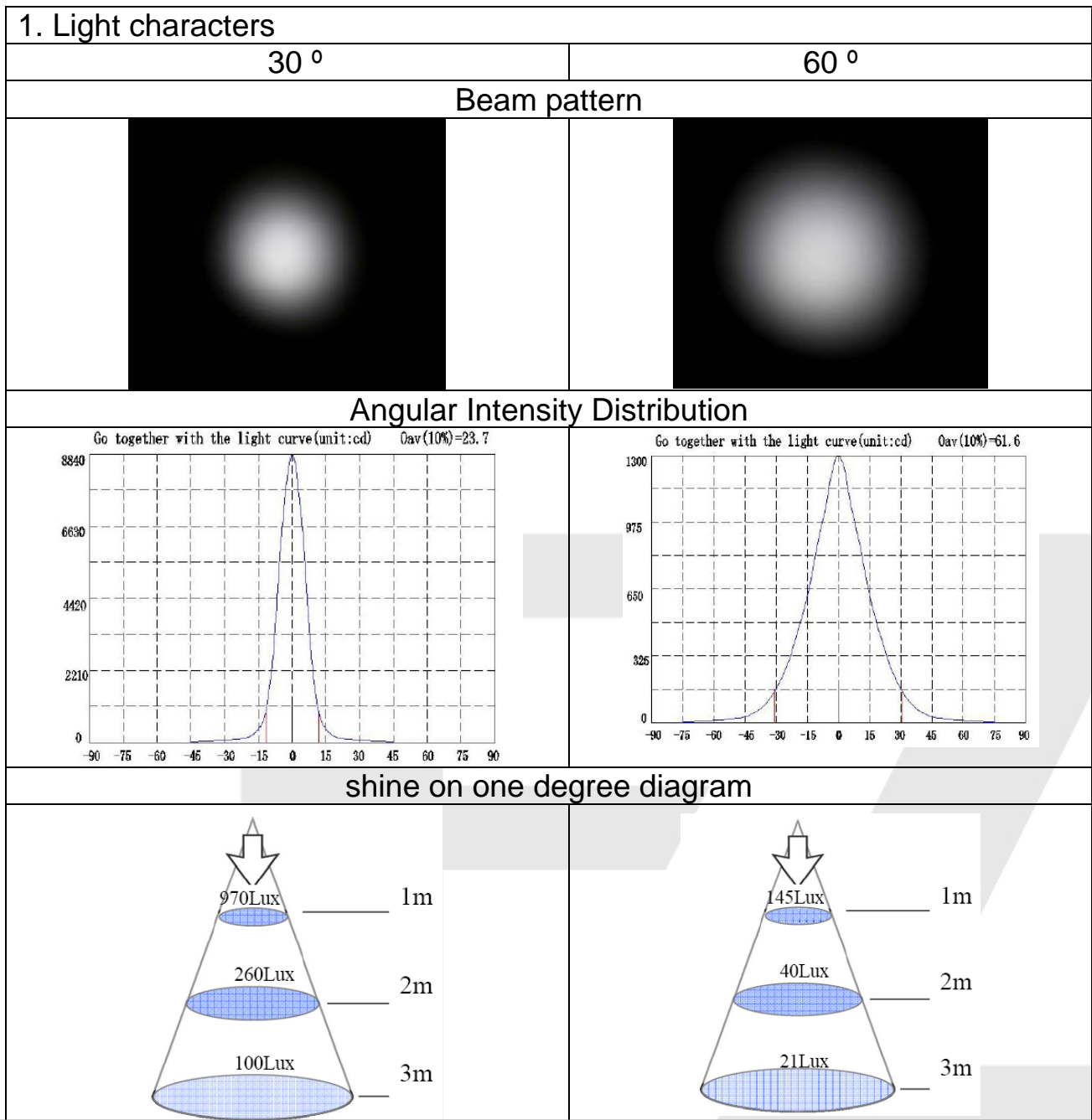


2-3 Simplified block diagram



2-4 Preliminary Technical Data Sheet

2-4-1 Beam Pattern



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2-4-2 Thermal Resistance

P LED = 3.6W

R_{J-S} = 4.5°C/W (BRT 's spec)

R_{S-B} = 1.5°C/W

R_{B-a} = 6.25°C/W

R_a = 7.75°C/W



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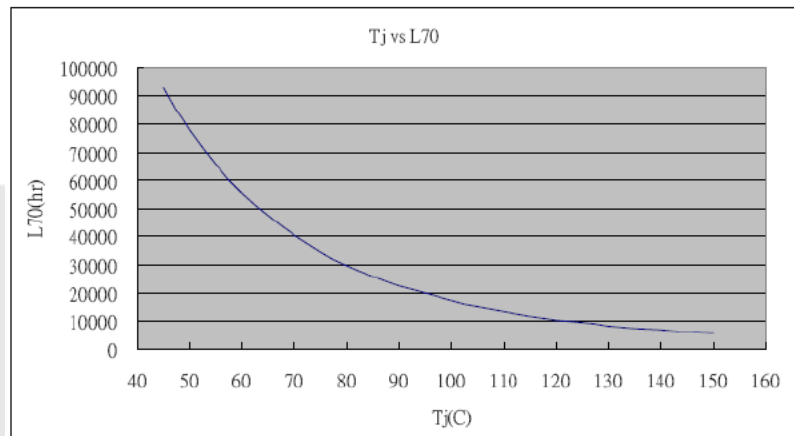
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2-4-3 Life Time 3W LED (700mA)

Tj	Ts	L70%
25		
30		
35		
40		
45	29	92011
50	34	79905
55	39	67666
60	44	57689
65	49	49335
70	54	42605
75	59	36785
80	64	31256
85	69	27856
90	74	24799
95	79	21756
100	84	19458
105	89	17532
110	94	15448
115	99	13888
120	104	12579
125	109	11956
130	114	9856
135	119	9458
140	124	8690
145	129	8056
150	134	7658



Chapter 3 Energy Saving and CO₂ Comparison Table

Item	Halogen Bulbs	FZL-MR16-01-CW-3
Power Consumption	60 W	3 W
Lifetime (hours)	3000	35000
Energy Saving comparison		
Power consumption (W)	40	3
Hours/day	12 hours	12 hours
Power consumption per year	262 kW	13.2 kW
CO ₂ Quantity	170 Kgs	8.52 Kgs
Energy Saving (%)	92 %	



Approval Sheet

FZled MR16-01-5W Specification



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Model Name

P/N	Description
AIMR1605WCBC0A	MR16, 30°, 3000K (WW)- 5W
AIMR1605WFBC0A	MR16, 60°, 3000K (WW)- 5W
AIMR1605CCBC0A	MR16, 30°, 6000K (CW)- 5W
AIMR1605CFBC0A	MR16, 60°, 6000K (CW)- 5W



Chapter 1 Introduction

FZtech has high C/P products in **MR16 series LED Bulbs**. It uses **BRT High Power LED** light source series products. It can replace traditional MR16 type bulbs with long lifetime (Up to 35000 hrs), high luminous efficacy and reduces environmental pollution. MR16 can use standard GU5.3 socket to conveniently replaces traditional light source and suitable for use 12V AC/DC.

1-1 Features

- Energy Saving
- No heat, No UV, or IR light radiation
- Light source: BRT High power LED
- Ra>75 for white light
- Long life time>20000 hours (L₇₀)
- GU5.3 socket compatible
- Power consumption up to 4.6 W for FZled MR16.
- High power driver efficiency > 87%
- Compatible with electronic transformers without LED driver

1-2 Typical Application

- Indoor Lighting
- Architectural Lighting
- Flood Lighting
- Mood Lighting
- Biological Lighting
- GU5.3 socket replacement

Chapter 2 Specification

2-1 Specification

	FZL-MR16-01-WW-5W		FZL-MR16-01-CW-5W	
LED	BRT High Power LED			
Housing	Al.			
LED No.	1 Pcs			
Power Consumption	4.6 W			
Input Voltage	12V AC/DC			
Input Frequency	50-60 Hz			
LED Rated Voltage	5V			
LED Rated Current	900 mA			
LED Drive Voltage	3.5V			
Electrical Efficiency	> 80%			
Power Factor Control	> 0.9			
Thermal Resistance	4.5 °C/W			
Socket	GU 5.3			
Operation Temperature	-20°C - +40°C			
CCT	3000K		6000K	
CRI	>80		>75	
Beam Angle	30	60	30	60
Over Current Protection	Yes			
Reversed Polarity Protection	Yes			
Luminous Flux (lm)	105 (lm)---3000K		130 (lm)---6000K	
Dimension	D50 X 44.8 (mm)		D50 X 44.8 (mm)	

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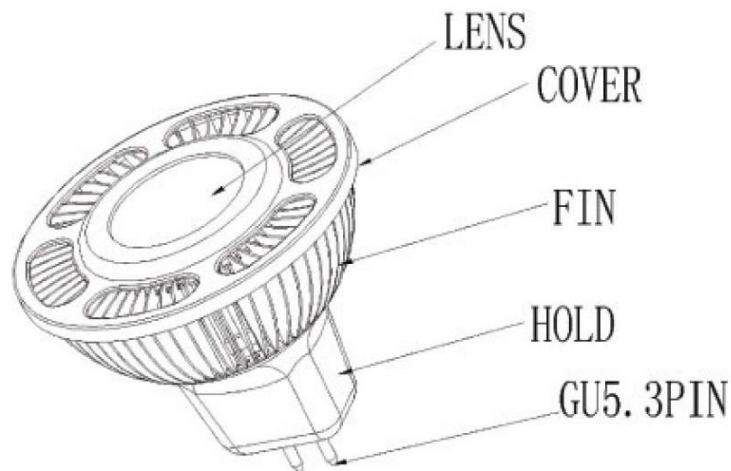
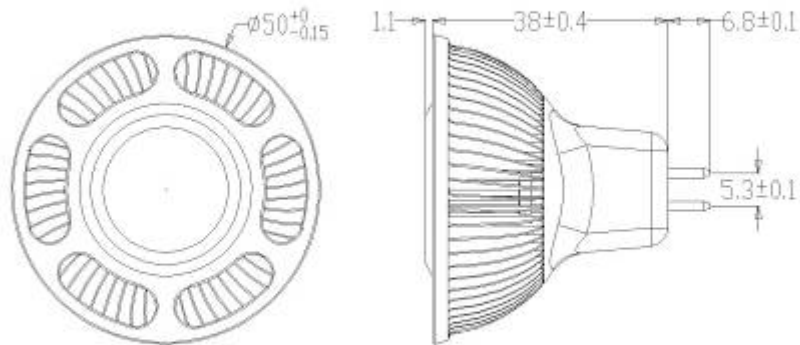
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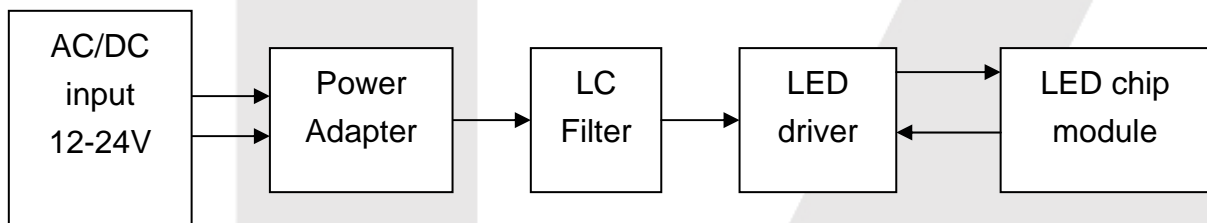
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2-2 Dimension



2-3 Simplified block diagram



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2-4 Thermal Resistance

P LED = 4.5W

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R_{S-B} = 1.5°C/W

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R_a = 7.75°C/W



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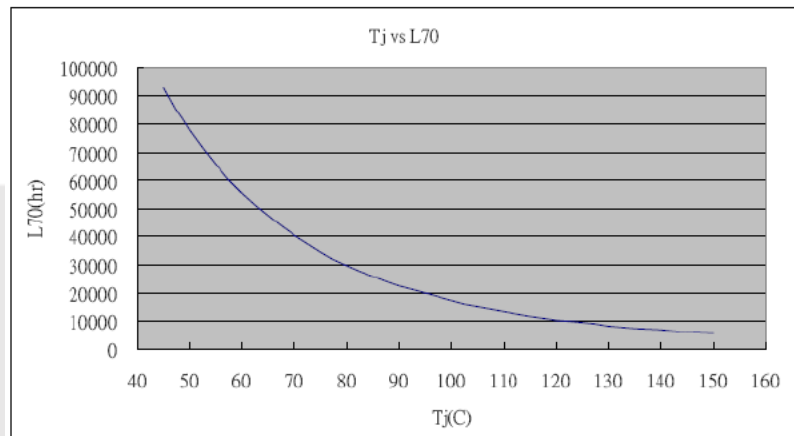
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2-4-1 Life Time 5W LED (700mA)

Tj	Ts	L70%
25		
30		
35		
40		
45	25	90541
50	30	77955
55	35	65866
60	40	55789
65	45	47345
70	50	40805
75	55	34888
80	60	29359
85	65	25674
90	70	22809
95	75	19766
100	80	17568
105	85	15542
110	90	13548
115	95	12868
120	100	11689
125	105	9856
130	110	8786
135	115	8468
140	120	7685
145	125	7025
150	130	6567



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Chapter 3 Energy Saving and CO₂ Comparison Table

Item	Halogen Bulbs	FZL-MR16-01-CW-5
Power Consumption	60 W	5 W
Lifetime (hours)	3000	Up to 35000
Energy Saving comparison		
Power consumption (W)	40	5
Hours/day	12 hours	12 hours
Power consumption per year	262 kW	22 kW
CO ₂ Quantity	170 Kgs	14.2 Kgs
Energy Saving (%)	90 %	

