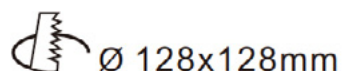
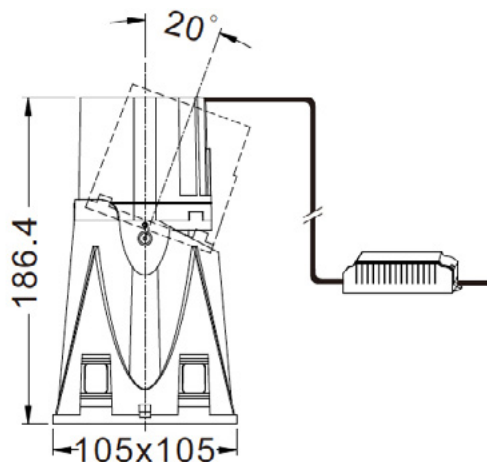
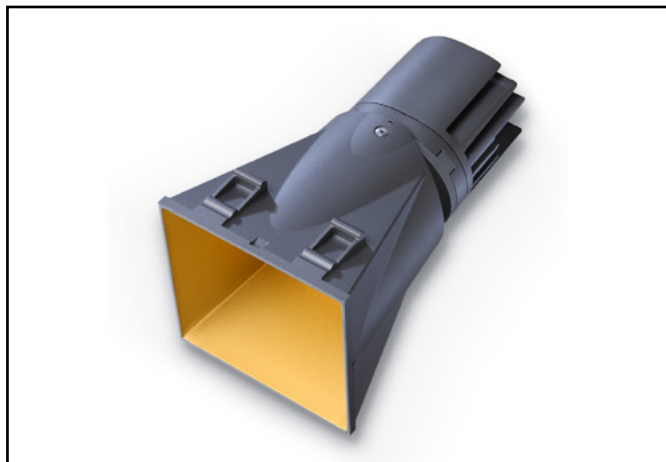


# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH



\*complete with TRIAC  
dimmable driver

\* suitable for non dim, DALI, 0-10V or TRIAC dimmable driver. Please specify your preference at the time of ordering.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH

### PRODUCT OVERVIEW

Power	Beam	Flux	CCT	Non-DIM	1-10V DIM	Triac DIM
7W	14°	425lm	2700K	Y	Y	Y
7W	14°	443lm	3000K	Y	Y	Y
7W	14°	461lm	4000K	Y	Y	Y
7W	24°	410lm	2700K	Y	Y	Y
7W	24°	428lm	3000K	Y	Y	Y
7W	24°	446lm	4000K	Y	Y	Y
7W	35°	382lm	2700K	Y	Y	Y
7W	35°	399lm	3000K	Y	Y	Y
7W	35°	416lm	4000K	Y	Y	Y
10W	14°	574lm	2700K	Y	Y	Y
10W	14°	595lm	3000K	Y	Y	Y
10W	14°	616lm	4000K	Y	Y	Y
10W	24°	558lm	2700K	Y	Y	Y
10W	24°	579lm	3000K	Y	Y	Y
10W	24°	601lm	4000K	Y	Y	Y
10W	35°	514lm	2700K	Y	Y	Y
10W	35°	534lm	3000K	Y	Y	Y
10W	35°	554lm	4000K	Y	Y	Y
13W	14°	635lm	2700K	Y	Y	Y
13W	14°	647lm	3000K	Y	Y	Y
13W	14°	659lm	4000K	Y	Y	Y
13W	24°	621lm	2700K	Y	Y	Y
13W	24°	633lm	3000K	Y	Y	Y
13W	24°	645lm	4000K	Y	Y	Y
13W	35°	606lm	2700K	Y	Y	Y
13W	35°	618lm	3000K	Y	Y	Y
13W	35°	630lm	4000K	Y	Y	Y

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED

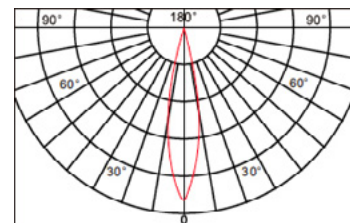
PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT

1160618IH

### LIGHTING DATA - 7W

#### LED COB 14°

Power	7W	7W	7W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	180mA	180mA	180mA
Efficacy	60lm/W	63lm/W	65lm/W



#### 7W 2700K - Flux 425lm

Lux			
h(m)	d(cm)	Em	Emax
1	24	2087	2610
2	49	927	665
3	74	231	290

#### 7W 3000K - Flux 443lm

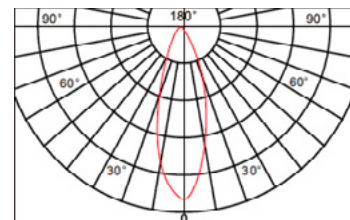
Lux			
h(m)	d(cm)	Em	Emax
1	25	2128	2860
2	48	532	715
3	75	236	318

#### 7W 4000K - Flux 461lm

Lux			
h(m)	d(cm)	Em	Emax
1	26	2270	3010
2	49	567	752
3	74	252	334

#### LED COB 24°

Power	7W	7W	7W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	180mA	180mA	180mA
Efficacy	58lm/W	61lm/W	63lm/W



#### 7W 2700K - Flux 410lm

Lux			
h(m)	d(cm)	Em	Emax
1	42	971	1380
2	84	242	360
3	127	107	153

#### 7W 3000K - Flux 428lm

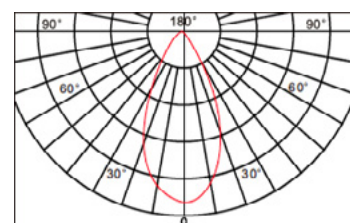
Lux			
h(m)	d(cm)	Em	Emax
1	43	1010	1600
2	85	252	401
3	126	112	178

#### 7W 4000K - Flux 446lm

Lux			
h(m)	d(cm)	Em	Emax
1	44	1130	1780
2	86	282	445
3	125	125	197

#### LED COB 35°

Power	7W	7W	7W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	180mA	180mA	180mA
Efficacy	54lm/W	57lm/W	59lm/W



#### 7W 2700K - Flux 382lm

Lux			
h(m)	d(cm)	Em	Emax
1	63	506	741
2	126	126	196
3	189	56	82

#### 7W 3000K - Flux 399lm

Lux			
h(m)	d(cm)	Em	Emax
1	64	546	820
2	125	136	215
3	188	65	98

#### 7W 4000K - Flux 416lm

Lux			
h(m)	d(cm)	Em	Emax
1	65	546	820
2	126	136	215
3	188	65	98

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED

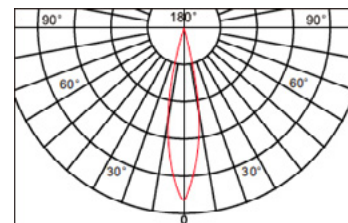
PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT

1160618IH

### LIGHTING DATA - 10W

#### LED COB 14°

Power	10W	10W	10W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	280mA	280mA	280mA
Efficacy	57lm/W	59lm/W	61lm/W



#### 10W 2700K - Flux 574lm

Lux	h(m)	d(cm)	Em	Emax
	1	24	3067	3880
	2	49	766	989
	3	73	340	431

#### 10W 3000K - Flux 595lm

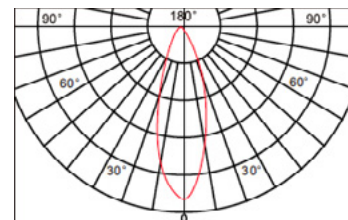
Lux	h(m)	d(cm)	Em	Emax
	1	25	3228	4020
	2	50	807	1005
	3	72	358	446

#### 10W 4000K - Flux 616lm

Lux	h(m)	d(cm)	Em	Emax
	1	24	3228	4250
	2	50	807	1060
	3	73	358	472

#### LED COB 24°

Power	10W	10W	10W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	280mA	280mA	280mA
Efficacy	55lm/W	57lm/W	60lm/W



#### 10W 2700K - Flux 558lm

Lux	h(m)	d(cm)	Em	Emax
	1	41	1392	1980
	2	82	348	525
	3	123	154	220

#### 10W 3000K - Flux 579lm

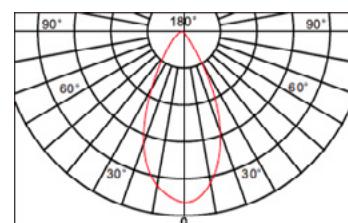
Lux	h(m)	d(cm)	Em	Emax
	1	42	1519	2210
	2	81	379	552
	3	124	168	245

#### 10W 4000K - Flux 601lm

Lux	h(m)	d(cm)	Em	Emax
	1	41	1519	2320
	2	81	379	580
	3	122	168	257

#### LED COB 35°

Power	10W	10W	10W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	280mA	280mA	280mA
Efficacy	62lm/W	63lm/W	64lm/W



#### 10W 2700K - Flux 514lm

Lux	h(m)	d(cm)	Em	Emax
	1	62	705	1080
	2	124	176	283
	3	187	78	120

#### 10W 3000K - Flux 534lm

Lux	h(m)	d(cm)	Em	Emax
	1	63	729	1320
	2	125	182	316
	3	188	81	146

#### 10W 4000K - Flux 554lm

Lux	h(m)	d(cm)	Em	Emax
	1	64	753	1350
	2	124	188	337
	3	189	89	155

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED

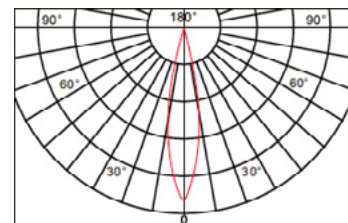
PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT

1160618IH

### LIGHTING DATA - 13W

#### LED COB 14°

Power	13W	13W	13W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	350mA	350mA	350mA
Efficacy	48lm/W	49lm/W	50lm/W



#### 13W 2700K - Flux 635lm

Lux			
h(m)	d(cm)	Em	Emax
1	25	3680	4650
2	50	920	1160
3	74	408	517

#### 13W 3000K - Flux 647lm

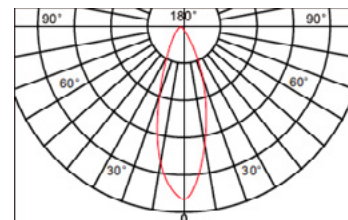
Lux			
h(m)	d(cm)	Em	Emax
1	26	3851	4840
2	51	962	1210
3	73	427	537

#### 13W 4000K - Flux 659lm

Lux			
h(m)	d(cm)	Em	Emax
1	25	4012	5010
2	50	1003	1350
3	74	445	556

#### LED COB 24°

Power	13W	13W	13W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	350mA	350mA	350mA
Efficacy	47lm/W	48lm/W	49lm/W



#### 13W 2700K - Flux 621lm

Lux			
h(m)	d(cm)	Em	Emax
1	41	1822	2600
2	82	455	650
3	124	202	288

#### 13W 3000K - Flux 633lm

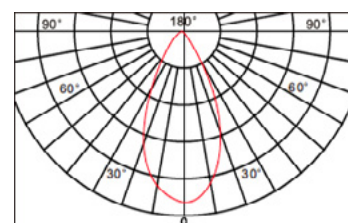
Lux			
h(m)	d(cm)	Em	Emax
1	42	1912	2760
2	81	478	690
3	125	212	306

#### 13W 4000K - Flux 645lm

Lux			
h(m)	d(cm)	Em	Emax
1	41	2022	2880
2	81	505	720
3	126	224	320

#### LED COB 35°

Power	13W	13W	13W
CCT	2700K	3000K	4000K
CRI	>90	>90	>90
Output V.	32V DC	32V DC	32V DC
I	350mA	350mA	350mA
Efficacy	46lm/W	47lm/W	48lm/W



#### 13W 2700K - Flux 606lm

Lux			
h(m)	d(cm)	Em	Emax
1	62	843	1280
2	125	210	320
3	188	93	142

#### 13W 3000K - Flux 618lm

Lux			
h(m)	d(cm)	Em	Emax
1	61	882	1420
2	124	220	355
3	189	98	157

#### 13W 4000K - Flux 630lm

Lux			
h(m)	d(cm)	Em	Emax
1	62	905	1570
2	125	1236	392
3	188	105	174

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH

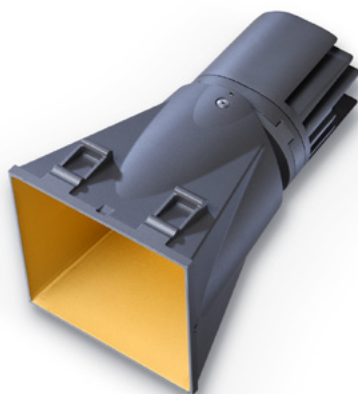
### PLASTER IN INSTALLATION FITTING

Hora is supplied with a plaster-in fixing unit. This allows the luminaire to be easily dismantled without damaging the ceiling board or the plaster finish.

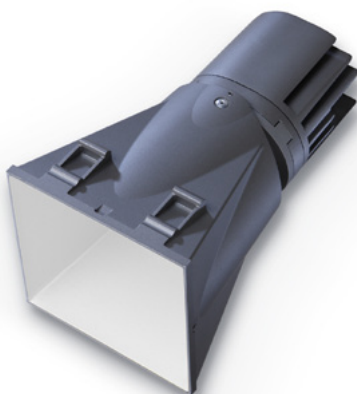


### REFLECTOR FINISHES

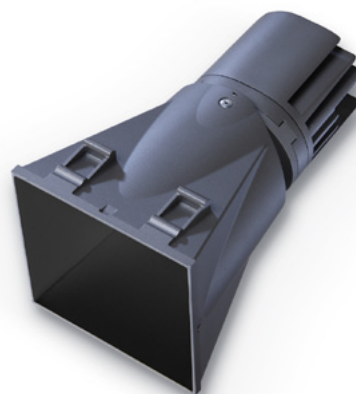
Available with the reflector finished in gold, white or black.



Gold reflector



White reflector



Black reflector

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.



# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH

### COB (chip-on-board)

COB (chip-on-board) technology generates the light evenly over the surface like that of an incandescent lamp, but without double image. The light generated from the fitting with COB makes the subject look natural and clean compared to a fitting with a single-LED-chip, which has a double image.



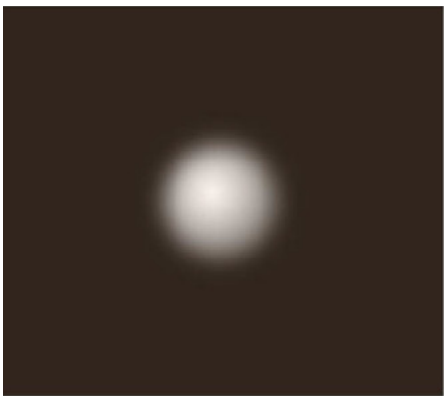
Fitting with COB generates the light even and soft, making the subject natural and clean and consequently creating strong stereoscopic feel.



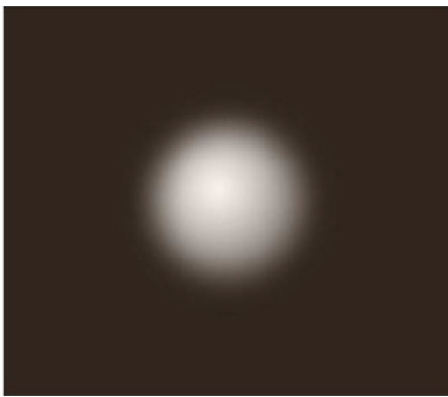
Fitting with single LED chip generates the light from the scattered chips, making the subject blur and unclear in boundary with double image and consequently creating weak stereoscopic feel.

### ACCURATE LIGHT DISTRIBUTION AND CONTROL

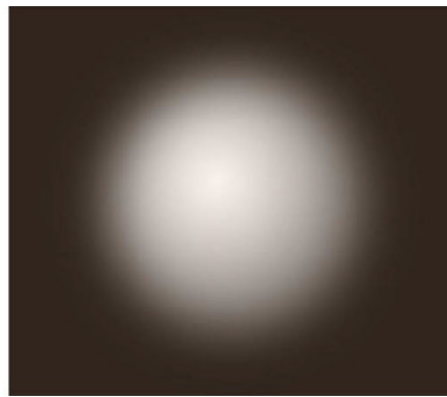
Available with beam angles at 14°, 24° or 35° to cater for differing requirements.



14°



24°



35°

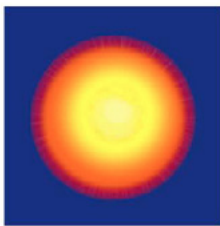
All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH

### HEAT SINK

Wind cooling theory is fully taken into account in the heat sink design. Sufficient passageway for air ventilation is made so that the hot and cool air can exchange freely within the heat sink. Thus strong heat dissipation is produced. This is a so-called heat sink which can breath.



### THERMAL MANAGEMENT

Efficient thermal management is indispensable in order to achieve the long service life and to operate LEDs as efficiently as possible. The extra-high temperatures in the LED chip reduces not only its own service life but also its efficiency.

Reliable and efficient thermal management starts during the development process, which includes comprehensive tests and simulations. A large heat sink alone cannot generally be considered a sufficient quality criterion for optimal thermal management.

A thermal connection between board and heat sink must also be ensured in quality. Thermal pads or compounds are utilized as required for this purpose. Within the scope of quality processes, thermal connection of the LED chips to the boards is checked as well with reference to the LED manufacturer's specifications.

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.



# DARKLIGHT DESIGN

## DARKLIGHT DESIGN HORA LED PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT 1160618IH

### HIGH CRI

The Darklight Design range Utilizes world class LED chips which create a high Colour Rendering Index (CRI) of RA > 90. This makes the subject appear natural and fresh in a way that few other LED products can do at present.

Lighting in high power & high CRI results in higher definition of the colour and detail of the subject. Subsequently this fitting is an ideal lighting solution for both the retail sector and public spaces.

This fitting is available in CRI 80 or CRI 90.

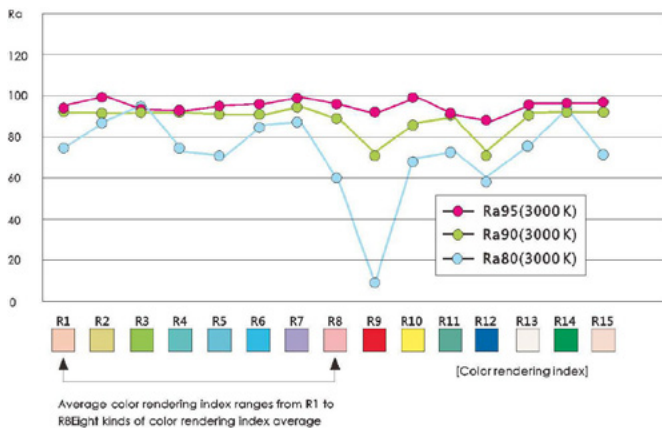
**Ra 95**  
High CRI



**Ra 90**  
Moderate CRI



**Ra 80**  
Standard CRI



### AVERAGE RA EVALUATION INDEX

Ra Evaluation Index is applied to estimate the Colour Rendering Index (CRI) of the lighting product. This allows the user to see the reflection level of natural colour compared to those by conventional lighting.

Average colour rendering index ranges from R1 to R8.

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.

# DARKLIGHT DESIGN

## RA CONSISTENCY

The requirement of lighting manufacturers to source LED chips of a high Ra consistency is challenging in a market where colour temperature inconsistency exists. For this purpose our LED chips are sourced at a high consistency (SDCM<3) from the best LED chip manufacturers. All LED chips are sorted out, stored and processed to a strict and scientific criterion to guarantee the batch consistency of our LEDs.

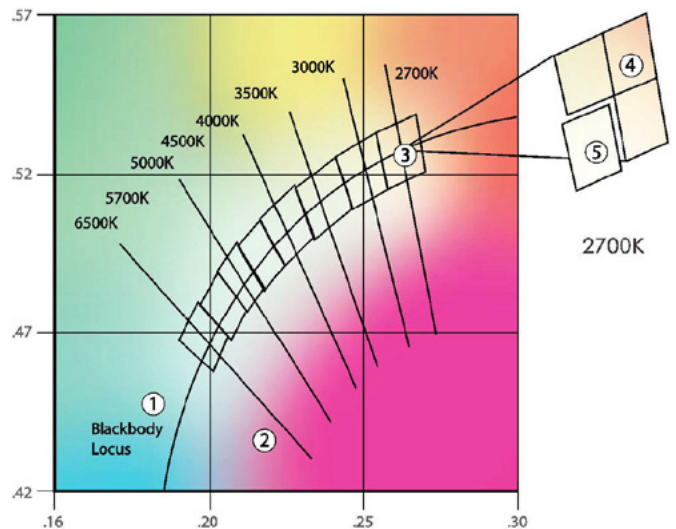
When LEDs are manufactured, the most challenging part is producing consistent and precise white colour. Binning is the process of sorting the white LEDs into groups of similar white colours. The regulation of this process is outlined by the ANSI standards for tolerances of white colour variations to fit within a colour temperature group, or bin. Some LED manufacturers have adapted a more stringent process of sorting called micro-bins which allows for much smaller white colour variations.

Our LEDs exceed the ANSI binning standards, giving our fittings optimal colour matching. When white LEDs are created, whether they be on the warm or cool end of the spectrum, there are always slight inconsistencies with regards to specific colour temperatures.

Although there is a cost associated with consistency, various LED chip manufacturers now make smaller bins available. Micro-bin sizes vary between chip manufacturers and while micro-bins allow for better consistency by batch, there is commonly a colour variation between batches.

## DARKLIGHT DESIGN HORA LED

PLASTER IN RECESSED ADJUSTABLE DOWNLIGHT  
1160618IH



1. The arced black line in the graph represents the white colour spectrum.
2. These long intersecting lines represent the range, from one end of the line to the other, of variation in colour for each corresponding colour temperature.
3. In order to keep the range of each temperature as close to the same colour as possible, ANSI created tolerance zones. Only the LEDs that fall into this range are used for that particular colour temperature, these are referred to as "bins".
4. This bin still has plainly visible variations throughout. ANSI tolerance zones are adjacent to account for the challenges around manufacturing LED chips consistently.
5. Once divided into smaller bins, the differences in colour are much less, allowing for minimal variation when two or more LEDs are used together.

All the information in this document is provided in good faith. Darklight Design will not be held responsible for any losses due to inaccuracies within this document.