

Challenges to grow OLED Lighting Industry

The view from Acuity Brands Lighting

Thank you Peter..

Low Lumen Applications



Low Lumen Applications

	Reasonable Performance To achieve Market Potential for High End	Reasonable Performance To achieve Market Potential for Main Stream
Brightness cd/m ²	3000 cd/m ² and up may required brightness control for over 3000 cd/m ²	3000 cd/m ² and up may required brightness control for over 3000 cd/m ²
Efficacy	40 Lumens/watt	90 Lumens/watt
CRI	90 ± for all color Temp	90± for all color Temp
Color consistency	2.0 MacAdam	2.0 MacAdam
Life Time	40K Hours @T70 @Application Brightness Level	40K Hours @T80 @Application Brightness Level
Shelf Life	10 Years	20 Years
Panel Reliability	1:2,000	1:10,000



Achieved or Close to be Achieved



Not Yet achieved



Strong need for improvement

Medium Lumen Applications



Medium Lumen Applications

	Reasonable Performance To achieve Market Potential for High End	Reasonable Performance To achieve Market Potential for Main Stream
Brightness cd/m2	3000 cd/m ² and up may required brightness control	3000 cd/m ² and up may required brightness control
Efficacy	90 Lumens/watt	120 Lumens/watt
CRI	90 ± for all color Temp	90 ± for all color Temp
Color consistency	2.0 MacAdam	1.5 MacAdam
Life Time	40K Hours @T70 @Application Brightness Level	40K Hours @T80 @Application Brightness Level
Shelf Life	10 Years	20 Years
Panel Reliability	1:10,000	1:50,000



Achieved or Close to be Achieved



Not Yet achieved

AcuityBrands.

High Lumen Applications



High Lumen Applications

	Reasonable Performance To achieve Market Potential for High End	Reasonable Performance To achieve Market Potential for Main Stream
Brightness cd/m²	3000 cd/m² and up may required brightness control	3000 cd/m² and up may required brightness control
Efficacy	100 Lumens/watt	150 Lumens/watt
CRI	90 ± for all color Temp	90 ± for all color Temp
Color consistency	2.0 McAdam	1.5 McAdam
Life Time	40K Hours @T70 @Application Brightness Level	40K Hours @T80 @Application Brightness Level
Shelf Life	10 Years	20 Years
Panel Reliability	1:50,000	1:250,000

■ Achieved or Close to be Achieved

■ Not Yet achieved

AcuityBrands.

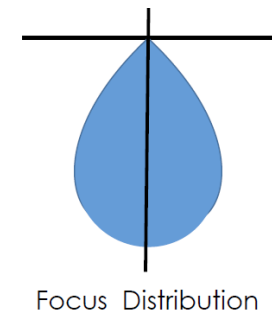
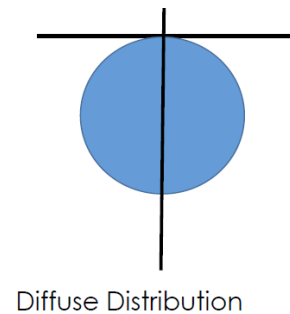
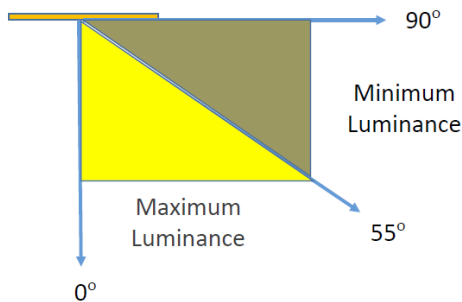
Key improvements Required by Applications

Considerations for Main Stream applications

	Low lumen	Medium Lumen	High Lumen
Efficacy (lm/W)	90	120	150
Color (CRI)	> 90	> 90	> 90
Color consistency	2.0 MacAdam	1.5 MacAdam	1.5 MacAdam
Lifetime	40K Hours at T80	40K Hours at T80	40K Hours at T80
Shelf life	20 Years	20 Years	20 Years
Reliability	1:10,000	1:50,000	1:250,000
COST	ok	Important	critical

Creating New OLED features to enhance the Acceptability of OLED Lighting

- Flexible OLEDs
- Transparent OLEDs
- Color tunable OLEDs
- Intensity Shaping



How do we grow our industry ?

- Let's now spend some time discussing, as a group, how best to attack these technical problems
- What types of solicitation could the DOE have to generate useful projects?
- More broadly, how can we accelerate the adoption of OLED lighting?