

Study on the Emotional Evaluation by Color Chromaticity of Urban Media Façade

Kim, Ju Yeon

Dept. of Interior Architectural Design, School of Architecture, Soongsil University

Key Words: Urban Media Façade, Color Chromaticity, Emotional Evaluation

1. Introduction

In the past, the interests lied mainly on the daytime view. But the importance of night view is getting more interests. It is time to stop focusing on and showing the functional sides of light to the foreigners and the Seoul citizens. It is necessary to lead new cultures throughout the city by sublimating the light into the art. Spaces and views which make the people want to stay more emotionally shall be developed. Therefore, it is required to study and research how to upgrade the night view in the emotional aspect in consideration of digital color control and color coordination in using the lighting. In order for the right use of lighting, the cases of media facades in Seoul and chromaticity coordinates for the emotional interactions are investigated in this study.

2. Purpose and Methods of the Study

The purpose of this study is to propose a new digital color culture by analyzing the color scheme of the media facades which have been created using the artificial lightings and technologies. The methods of study are as follows. First, the characteristics of media facade limited to the area of lighting are investigated. Secondly, the cases of media facade are taken into the photos and the brightness and chromaticity coordinates are measured and analyzed using the color brightness photometer CS-100 as shown in the Figure 1. The measurement is made 200 times in the 1 second interval consecutively according to the change of digital media to analyze the color difference,

chromaticity and brightness. Thirdly, the quantitatively measured digital colors are extracted and the color difference and chromaticity of each case are analyzed according to the CIE chromaticity coordinates as shown in the Figure 2. Fourthly, the analyzed values of chromaticity coordinates are checked according to the sensibility measurement coordinates to see the distribution of color scheme.

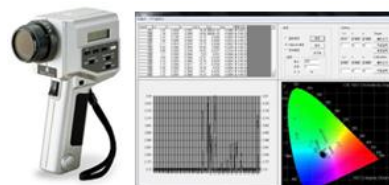


Figure 1. MINOLTA CS-100 and Program for Measurement

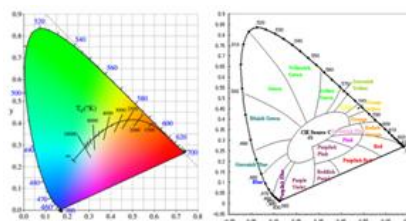


Figure 2. CIE x,y Chromaticity Diagram (System of Color Specification)

3. Study Cases and Measurement Results of Media Façade

3.1. Range and Concept of Study Cases


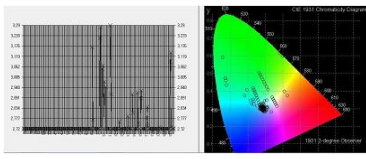
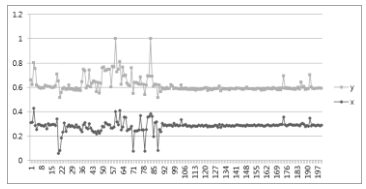

In this study, Case A building which view lightings were designed by the designers themselves and Case B building in the shopping area are measured and comparatively analyzed. The Case A building to which the designers participated was awarded 2011 City View Prize. The view lightings can be evaluated in the aspect of artistic

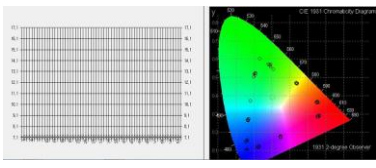
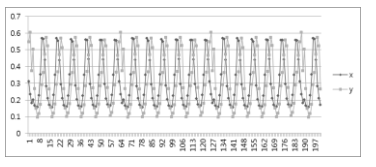
and emotional interaction with the citizens, not by the brilliant coloring and the movement of lightings. For the purpose of the study, the types using LED methods were selected and the changes in color according to the change of media were measured.

3.2. Measurement and Results of Study Cases

Brightness value (Lv) and color temperature (Tc) and range of color distribution of chromaticity coordinates of Case A and Case B are shown in the Table 2. The brightness value of Case B (4.42) is about 3 times higher than that of Case A (1.38). In the aspect of color distribution, Case A consists mainly of blue green colors in white series but Case B includes the values of chromaticity coordinates of LED lightings here and there on the whole rather than the value of color temperature.

Table 1. Media Façade Case A and Case B and the Results of Measurement

Case A			
Photos of the Building			
Measurement Results of Brightness and chromaticity coordinates			
CIE x, y Analysis			
Analysis of chromaticity coordinates	Lv	Tc	x,y
	1.3	800	Green, Bluish-green
	8	0°K	
Case B			
Photos of the Building			

Measurement Results of Brightness and chromaticity coordinates			
CIE x, y Analysis			
Analysis of chromaticity coordinates	Lv	Tc	x,y
	4.42	-	Red, Green, Blue

4. Conclusion

Two separately located cases which cause different emotional reactions location are investigated in this study. The difference between the cases in different area in the aspect emotional interaction is big enough for the citizens to feel directly. Case B building is located in the area which is full of shopping malls causing the light pollutions. Located in the high level residential and office area, Case A building is adopting appropriate digital colors. The database of measured color brightness and chromaticity coordinates can be used for the basic studies to develop the digital color schema and colors for the emotional city view.

References

- Mende Gaor (2011). *View of Light, Machizkuri*, Nalmada Publishing Co.
- Juhee Chung, Jungtae Kim (2010). Analysis on the Characteristics of Night Lightings of Media Façade Buildings, *Thesis Collection of the Korean Institute of Illuminating and Electrical Installation 24(1)*, The Korean Institute of Illuminating and Electrical Installation, 45–55.

This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2011-332-H00018).