Outdoor/ Indoor LED display

2015

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1. Outdoor LED Display

1-1. Goal of Proposal

It is essential to introduce new multimedia technology as the advertising media.

Our LED outdoor/indoor solution has background as qualified Technology (Korea R&D/ Production, Japanese Chip) which Maximize the visual effects for the advertising and create new connection toward the spectators.

Our manufacturer has abundant experience in world wide (Over 30 countries with more than 100 site installation)

All Right Reserved

2. Advantage of Product

2-1. System Advantage

Hardware Technology

❑ **Data processing of picture, System composition:**
All process are digitalized, no deterioration in the quality during data transfer so it displays pure and clear images.

❑ **More than 10 International Patents for LED display**
(ex: Anti diffused reflect)

❑ **Extremely easy to install and do maintenance,**
and provides very stable LED System due to accumulated knowhow of LED business.

❑ **Various input sources can be displayed in one screen :**
Various editing and display functions will be provided.

❑ **Full Range LED Adjustment :**
Color and brightness adjustment by wireless units, LED modules and each Module will be adjusted to have the best color quality.

Software Technology

❑ **User friendly environment using Windows XP:**
Easy to train and learn to manipulate the AV system.

❑ **Remote control function :**
Available to remotely control through Optical Cable, wire/wireless LAN, Internet.

❑ **Remote scheduling control :**
Auto scheduling and sensing control

We're strategic supplier of LED wall for LG and Samsung who is leader of technology in the world -> They recognize our product & service quality (Proven quality)

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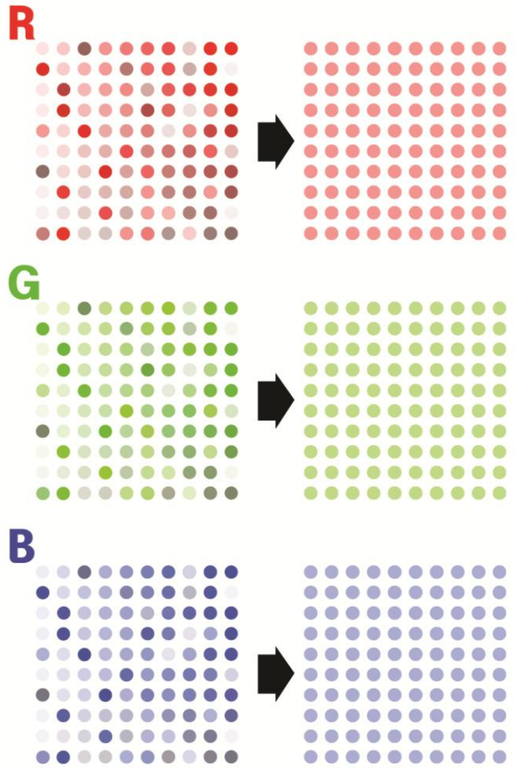
2-2. Calibration System

➢ Optimal Color Matching System

Our solution are produced with several calibration systems
to provide more optimal “color matching”.
With this calibration, our LED products get more color conformity
and provide better quality LED displays.

As a result, if client put an additional order after initial purchasing,
we can provide color matched products to client in best condition.
So clients can use their existing display devices more broadly
with color matched new products.



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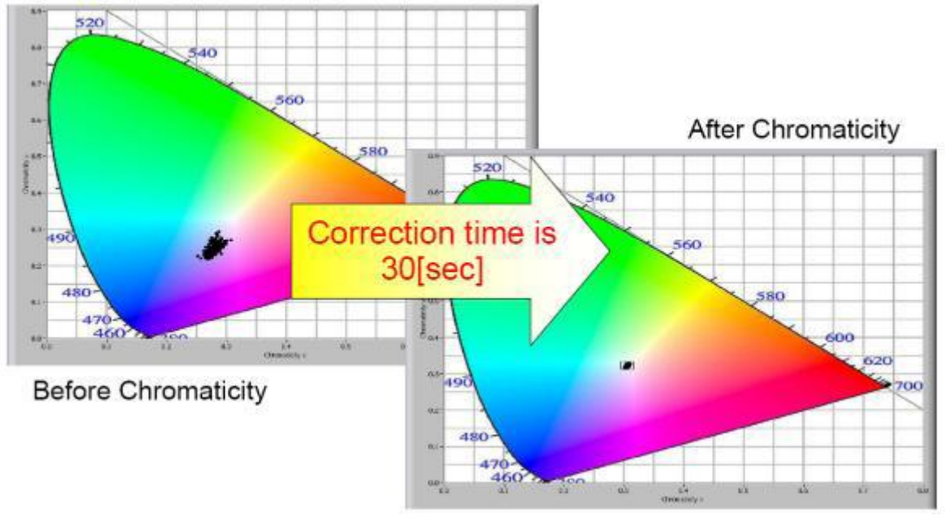
2-2. Calibration System

➢ Dot calibration effect



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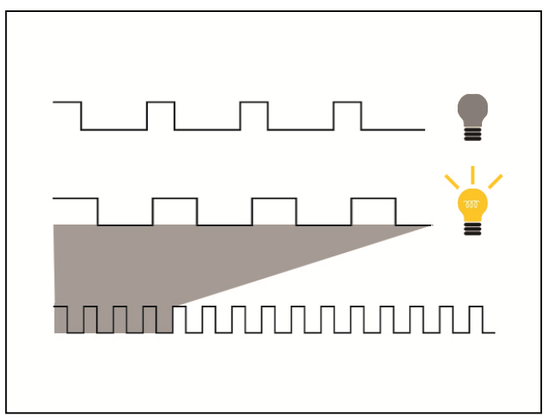
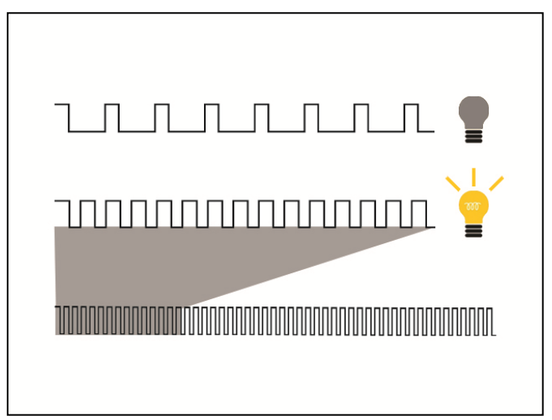
2-3. Processing

- **16 bit processing: reduce gradation from precise control of processing**





Low bit processing

16 bit processing

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2-4. Durability (IP 55/ 65)

- **LED life cycle depends on protection from water and dust**

[Before Test]

[Before Test]

[During Test]

[During Test]

Lab test and certified IP 55/ 65

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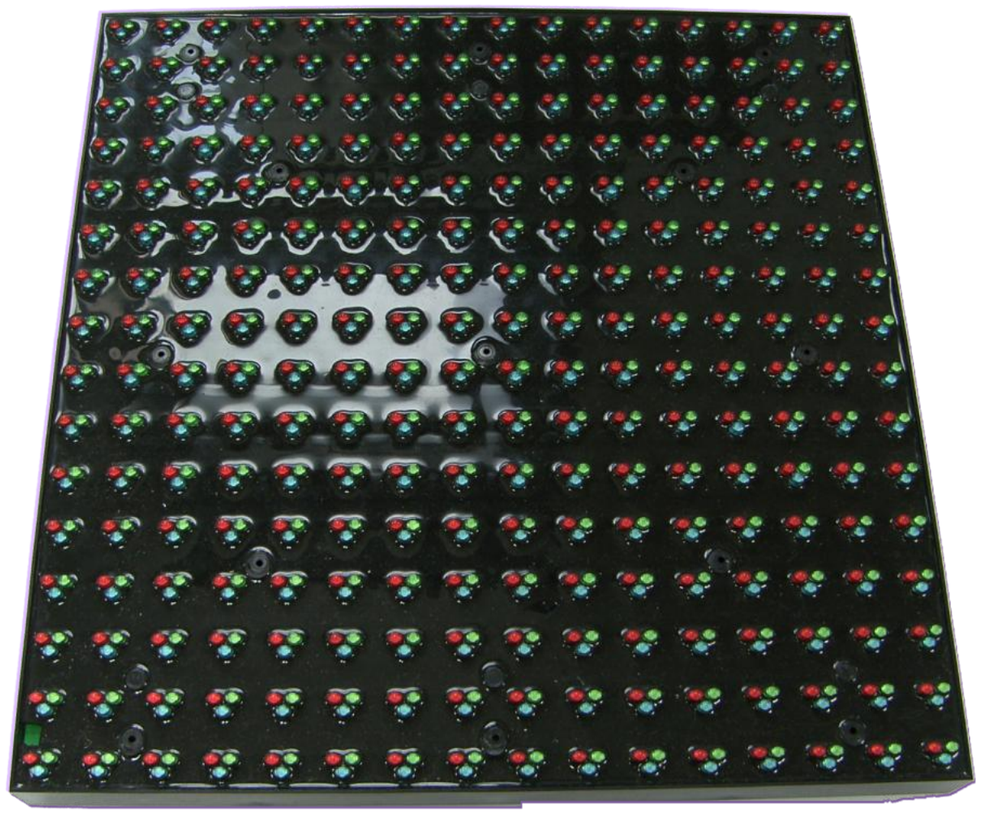
2-5. Patents

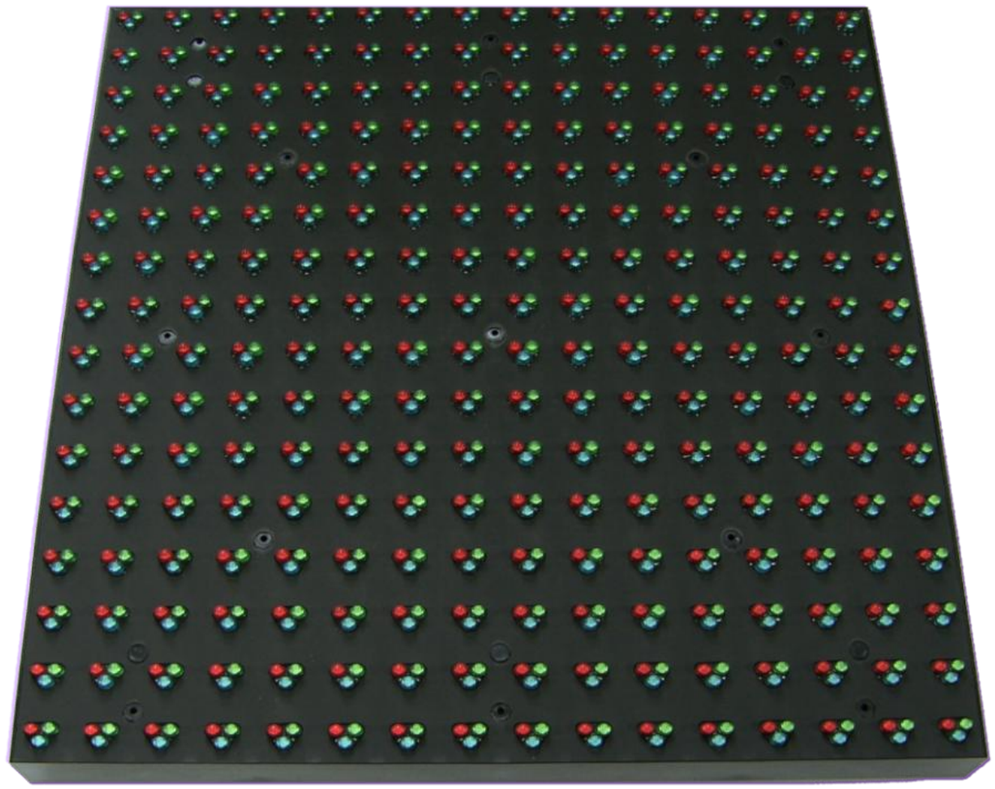
(1) Anti Diffused Reflect Technology

Patent!

Others



Ours



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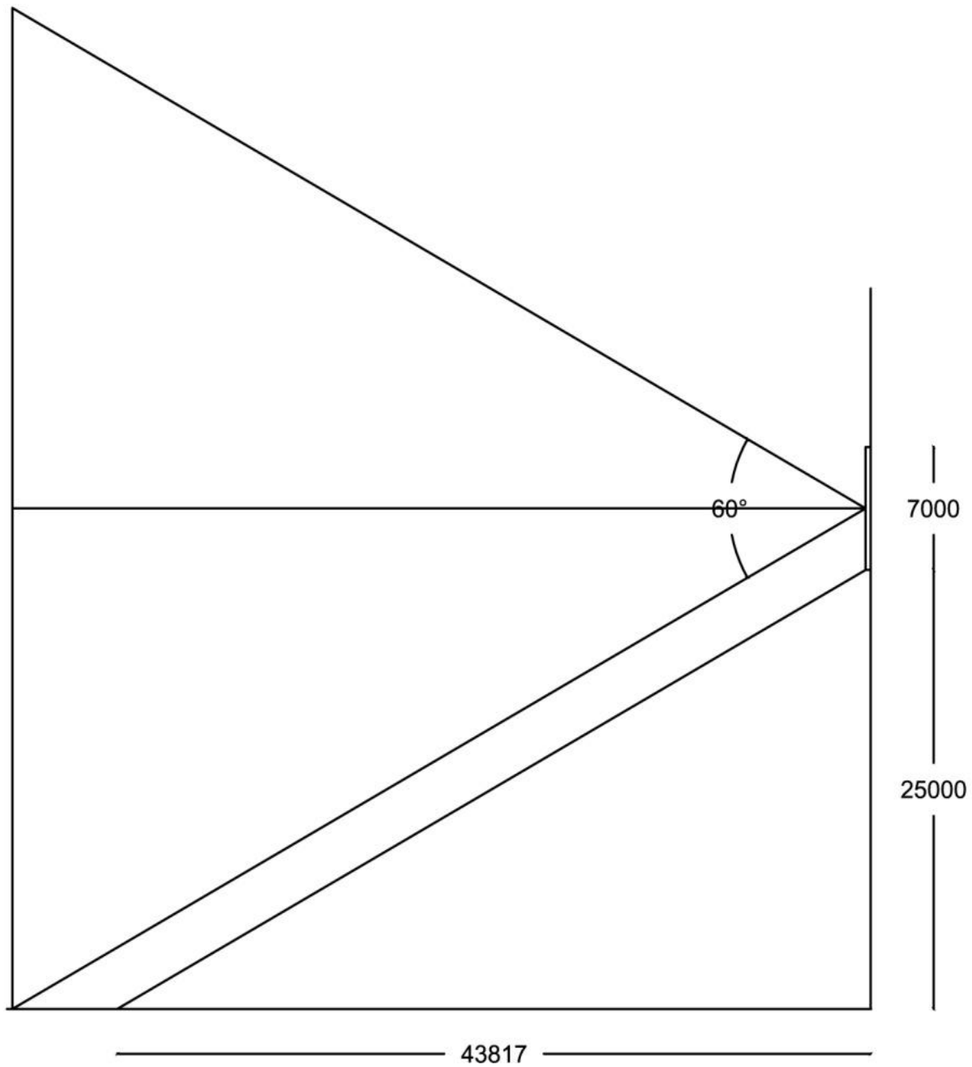
2-5. Patents

(2) Vertical Viewing angle Adjustment Technology

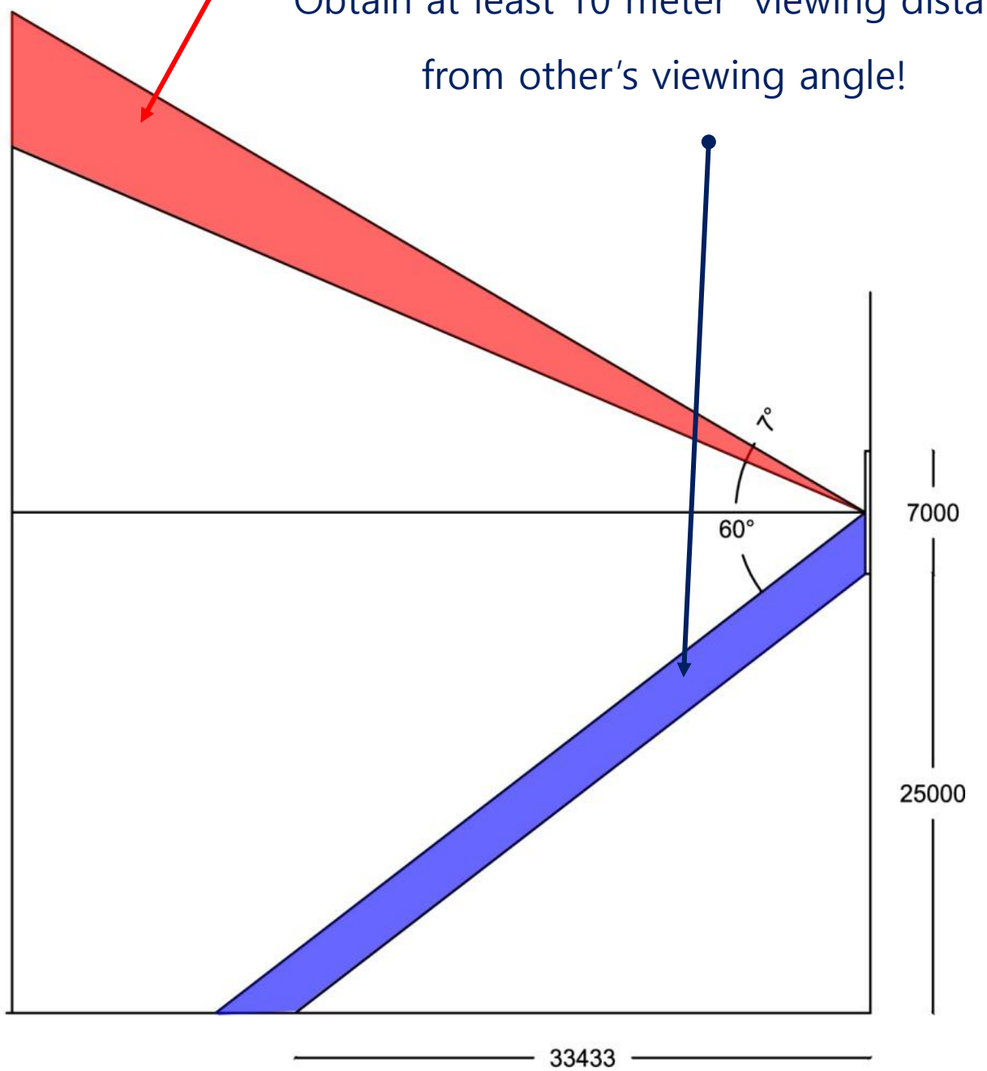
Patent!



Vertical viewing angle 60° + more 7°

LED Model: NSP - 346 JS, GS, KS

Obtain at least 10 meter' viewing distance from other's viewing angle!



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2-5. Patents

(3) Other Patents Technology

❑ Technology for Multi separate control of LED Display

- It is possible to be pre-Setting of Multi separate screen(from 1 to 4 parts) for various use.
- It is possible to send a real time message in case of emergency situation to give a real-time news to citizens. (for example, earthquake, fire etc.)

❑ Remotely surveillance & control system for LED Display with real time

- We provide remotely surveillance from KOREA for the first step to diagnosis with WEBCAM & Signal.
- Dual control system with Milan Office e KOREA to response in any situation of technical problem.

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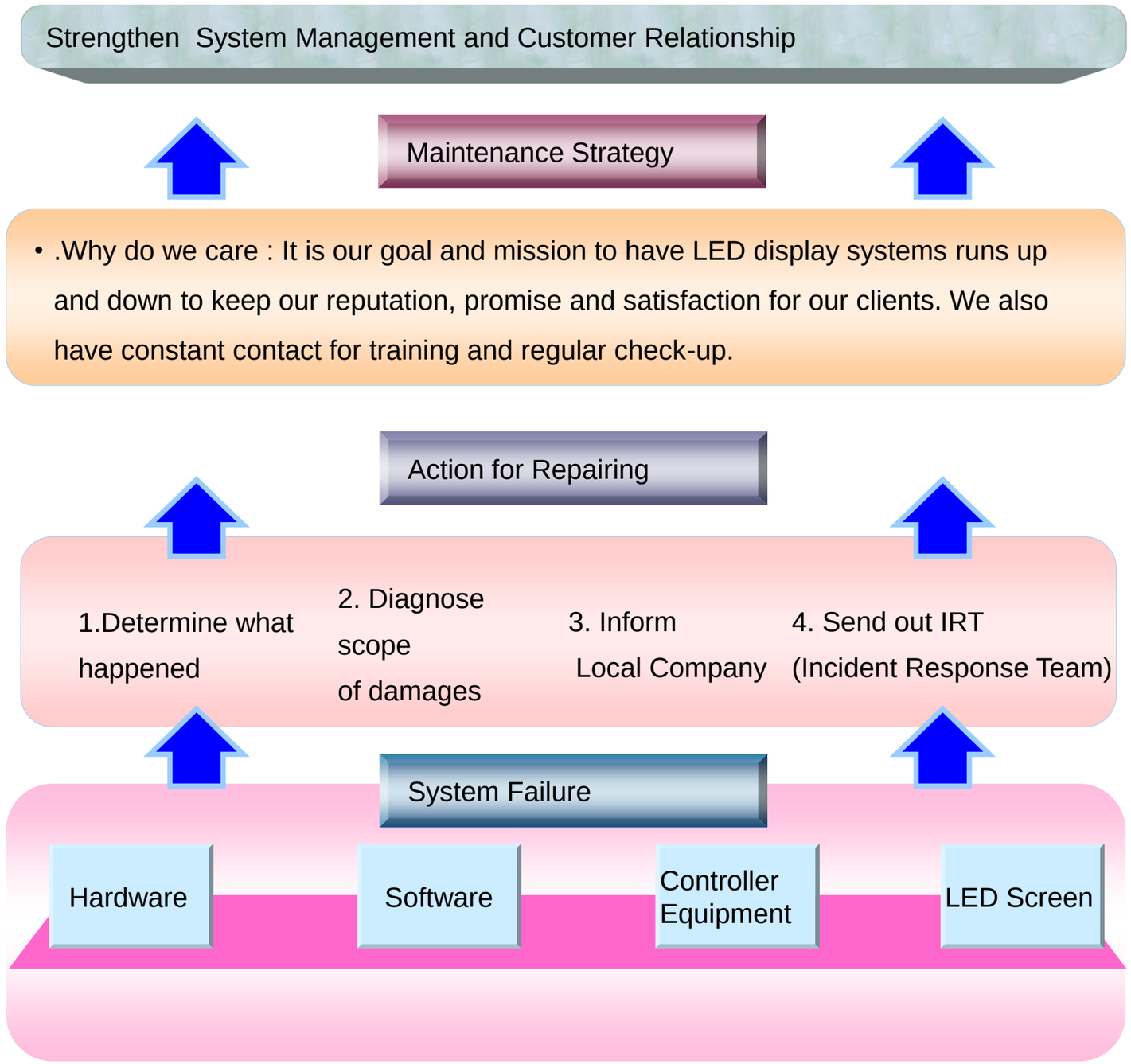
2-3. Maintenance Plan

Explain how your service organization responds to requests for repair of LED screens after receiving failure report both during and beyond the warranty period.



<u>Total hours from repair request call to reaction</u>

- 1ST Step : 48 hours from European office (Milan, Italy)
- 2ND Step : 96 hours from Korea

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2-6. Maintenance Plan

We offers a full factory warranty that covers defects in materials and workmanship of any component supplied from Mid east (Representative office) & Korea for a period of 1year (FOC) and consecutive years with separate quotation.

Quick Response Maintenance System through the local Operating Company

Manufacturer's Warranty

- We will provide maintenance and rep airs of LED Display System and related systems during the first three years after installation.
- Full support of upgrade of Software and Hardware parts and regular check-up.

LED Display System

Within Warranty

- System Operational Manual & Trouble shooting, etc.
- System upgrade & back up
- Technical Advisor & quick Response
- Program error or modification on equipment

Upgrade

- Provide additional Program of customer requirement using existing system

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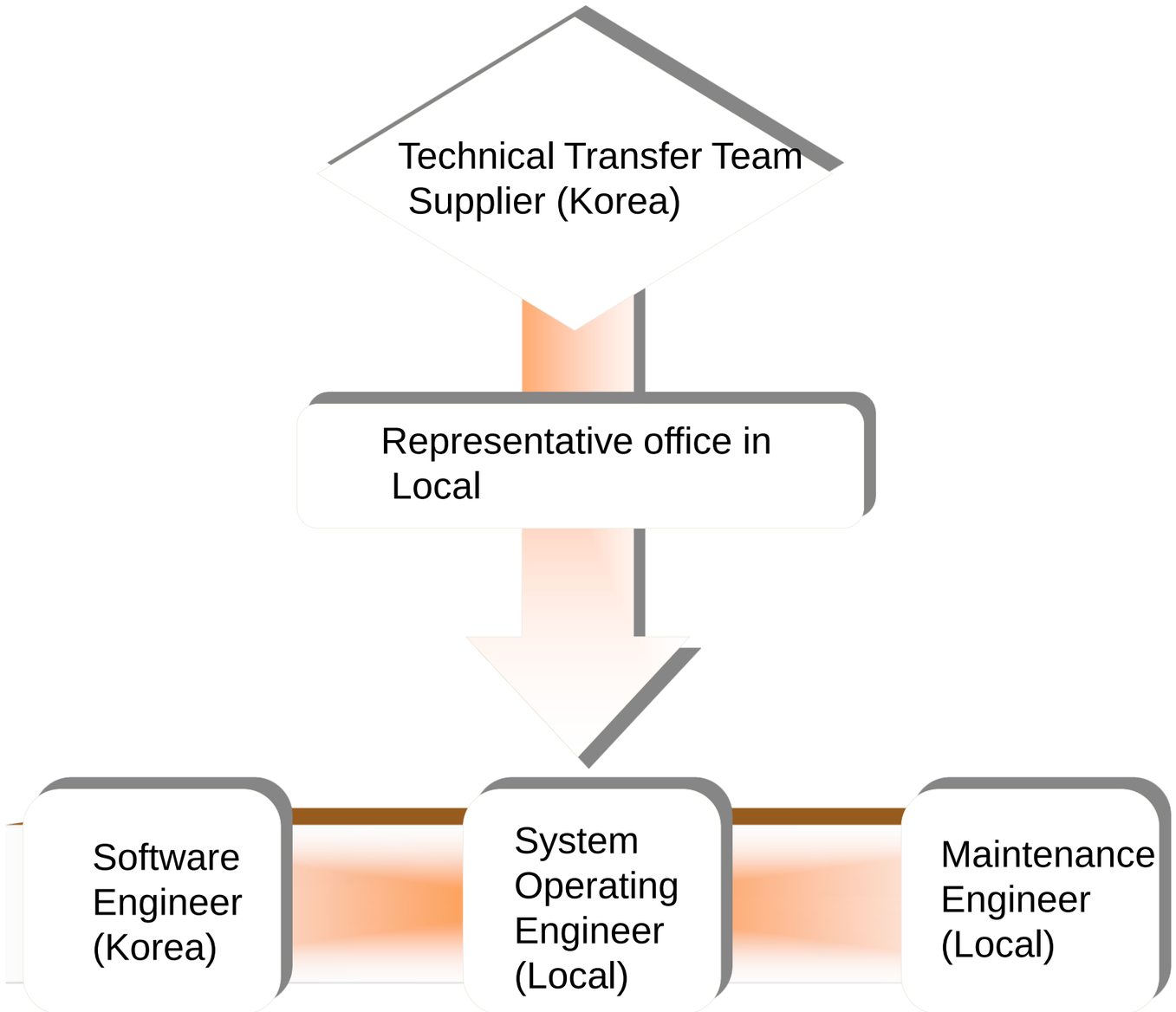
2-6. Maintenance Plan



Type		Qualification
Installation Team (Manufacturer)	Hardware	• Intermediate level engineer with more than 5 years of experience
	Software	• Expert level engineer with more than 5 years of experience
	Network	• Intermediate level engineer with more than 3 years of experience
System Operation Team		• Could provide local training if customer requires
Maintenance Team		

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3. Product Introduction

3-1. System Diagram

Option

DVD Player
Audio System

A/V Routing Switcher

Control System

PC

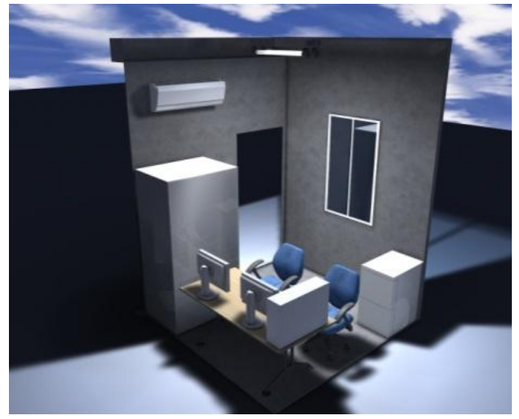
UPS

Optic Cable

LED Screen

Operating PC System

UPS



Operating Room (Ex Image)

Distributor

Main Controller

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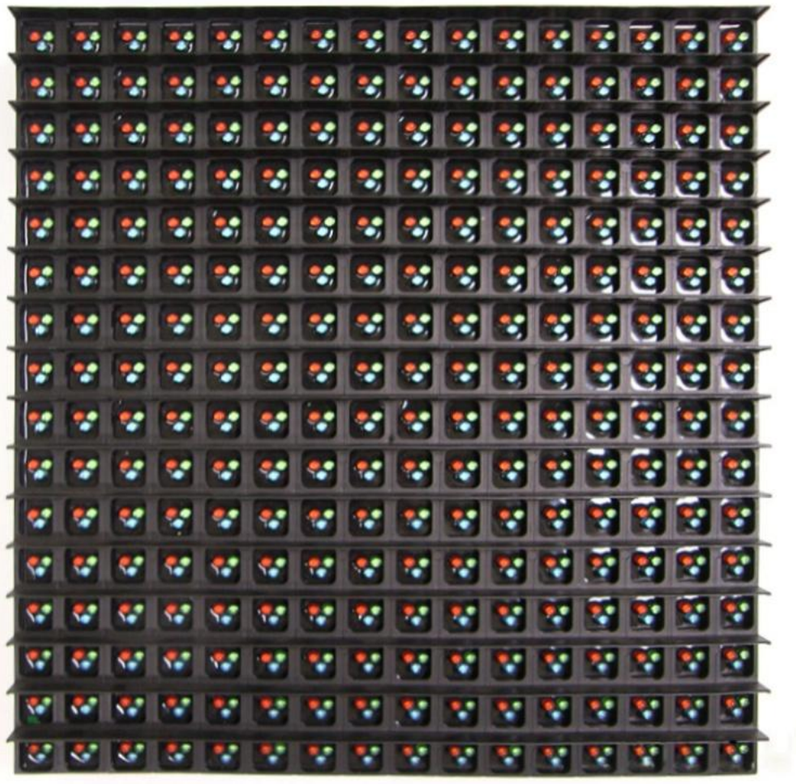
3-2. Product Introduction

(1) General Module System : 2.5, 3.75, 4, 6, 8, 10, 12.5, 15, 16, 18.75, 20, 22, 25mm pitch



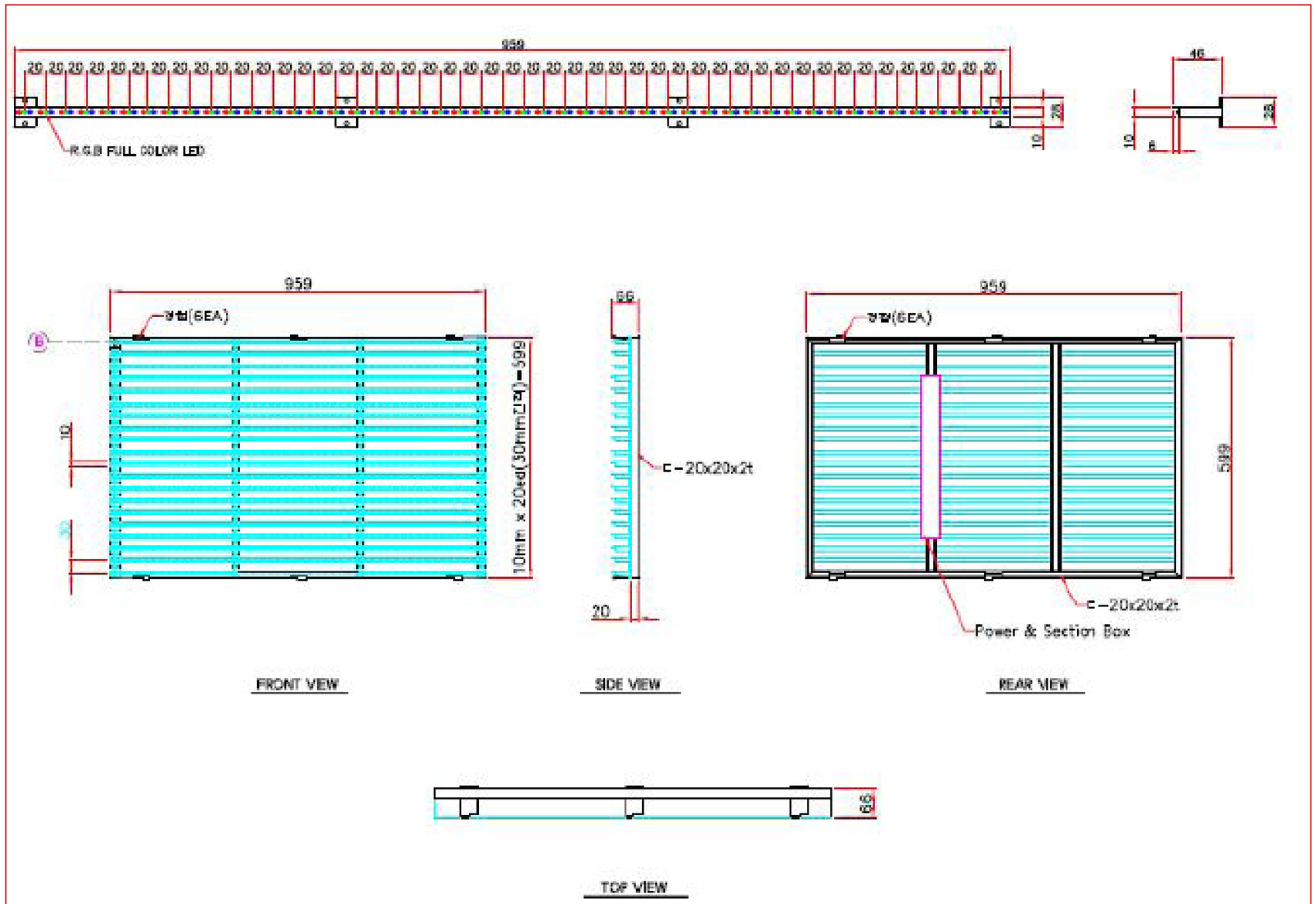
Sample Specification	
Pixel pitch	20mm pitch
LED*	3Ø Oval Type Lamp Nichia (R1, G1, B1)
Module Size	320 x 320mm
Q'ty of pixel	16 x 16 pixels
Power Consumption	90W(at white)

*** RGB Lamp/ SMD type**

All Right Reserved

3-2. Product Introduction

(2) See Through Module System(for Media Façade)



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3-2. Product Introduction

(2) See Through Module System(for Media Façade)

Specification	
Pixel pitch	20mm(Hor.) / 30mm(Ver.) pitch(adjustable)
LED	3Ø Oval Type Lamp Nichia(R1, G1, B1)
Module Size	960 x 10mm
Q'ty of pixel	48 x 1 pixels
Power Consumption	18W(at white)

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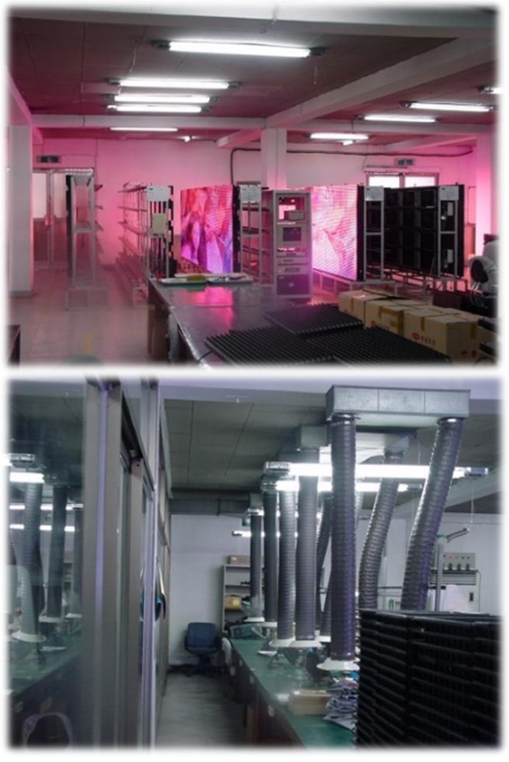
3-3. Production Site

(3) Manufacturing Facilities

- LED Lamp Auto Insert Machine
- Silicon Auto Dispenser
- Auto Solder Machine
- Cure system



Automatic production from auto-insertion of LED to quality control

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4. Reference sites

(Over 30 countries, more than 100 site installation)

LED Display

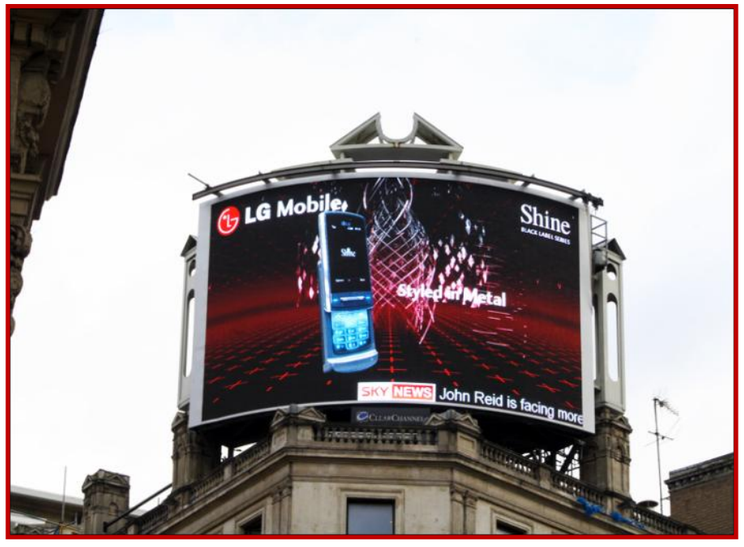
Manhattan,

NY, US (LG LED)

24.8 X 14.2M

(12.5mm)

Duomo,
Italy
10 X 10M
(8mm)



Picaddily Circus,
London,

UK (LG LED)

9.6 X 5.2 M

(12.5mm)

LG Building,

Italy

12 X 8M

(10mm)

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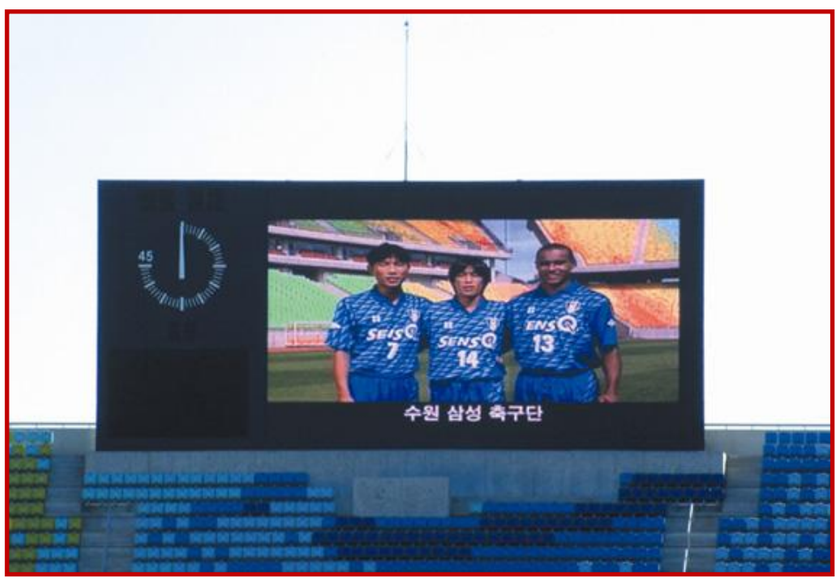
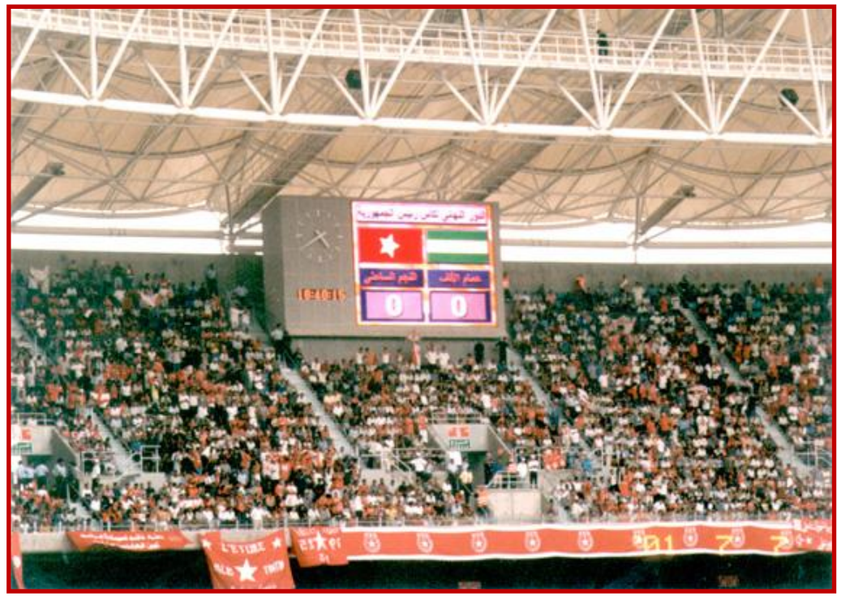
Installation sites - stadiums



SUWON,
Korea
15 X 8M -> World Cup 2002
(22mm)



Tunis,
Tunisia
8 X 6M
(25mm)

Abu Dhabi
U.A.E
14 X 8M
(16mm)

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Installation sites – outdoor commercial/ A Board

Seoul,

KOREA

18 X 7 M

(22mm)

Seoul,

Korea

112 X 1 M

(22mm)

Manila,

Philippines

7 X 5 M

(22mm)

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Installation sites – outdoor commercial

Sao Paulo

Brazil

7.2 X 5.4 M

(28mm)

Weihai,

CHINA

7 X 5 M

(22mm)

LIMA

PERU

10.5 X 6.3 M

(22mm)

Incheon,

KOREA

1.6 X 1 M

(12.5mm)

12.7X1M

(22mm)

All Right Reserved

Installation sites – outdoor commercial

Tokyo,

Japan

4.6 X 3 M

(16mm)

Hochimin,

Vietnam

7.7 X 5.2 M

(22mm)

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Installation sites – outdoor commercial

Seoul,

KOREA

11 X 7 M

(22mm)

Seoul

KOREA

14 X 7 M

(16mm)

Seoul

KOREA

11 X 7 M

(16mm)

Seoul,

KOREA

11.7 X 8.6 M

(20mm)

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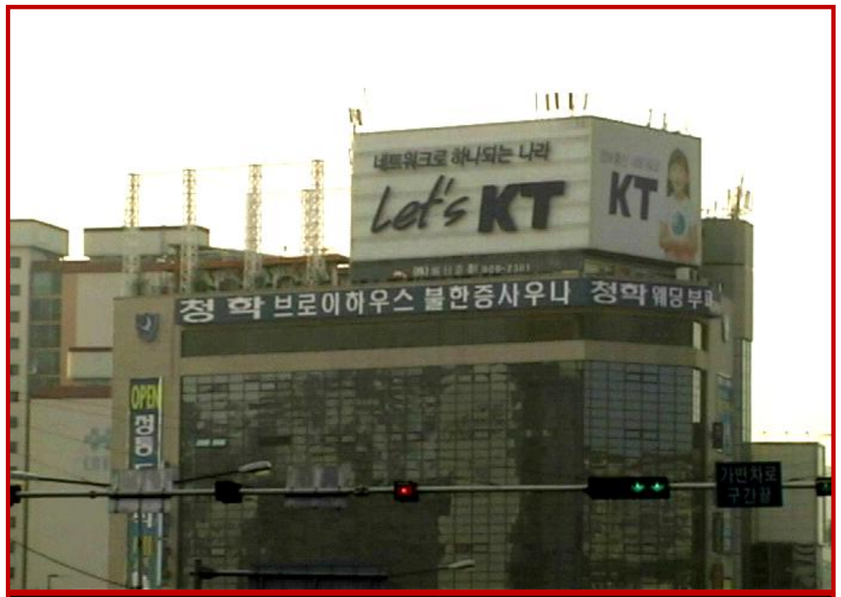
Installation sites – PNV sign board type



Cheonghak Sport centre, Seoul KOREA

50 X 2 M (PNV 62.5mm)

Tokyo, Japan 14.8X 14.8 M (PNV 44mm)

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Installation sites – trailer unit

Shanghai Trailer type,

China

7.68 X 4.6M

(16mm)

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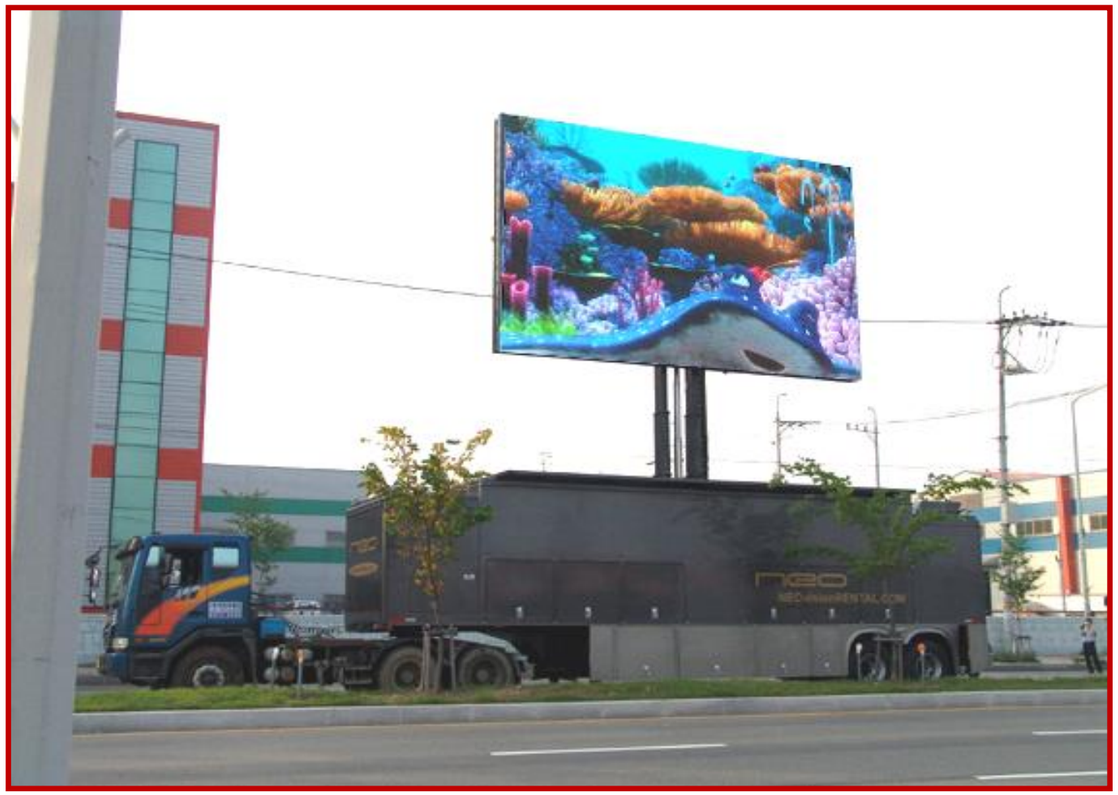
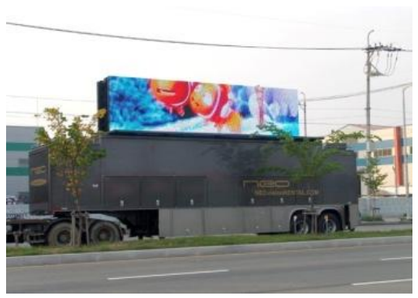
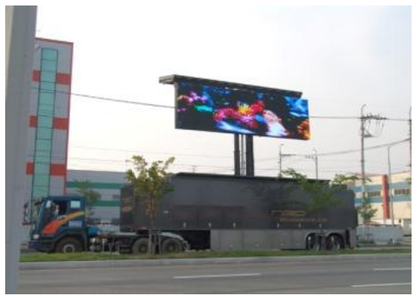
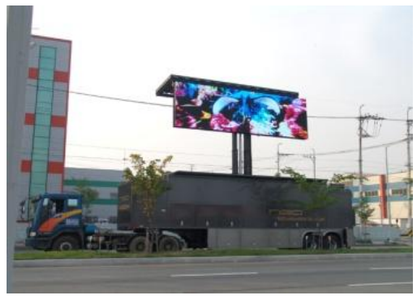
Installation sites – trailer unit

Rental Bases
Los Angeles, U.S.A
7,800 X 4,800mm
(18.75mm)









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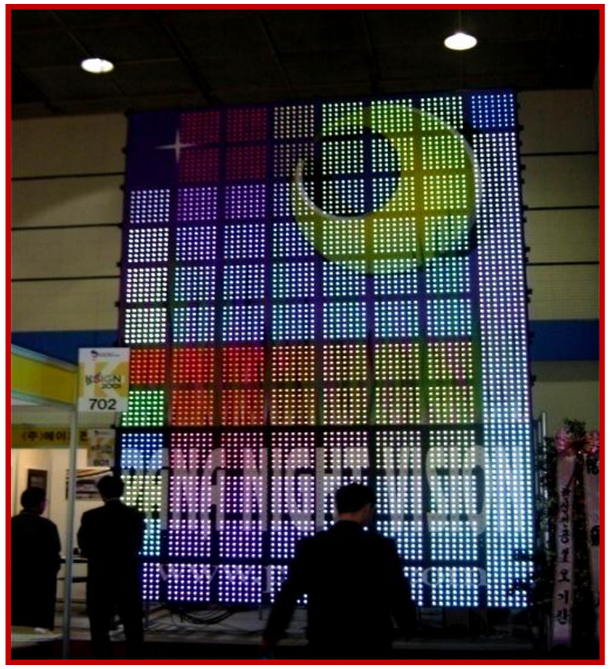
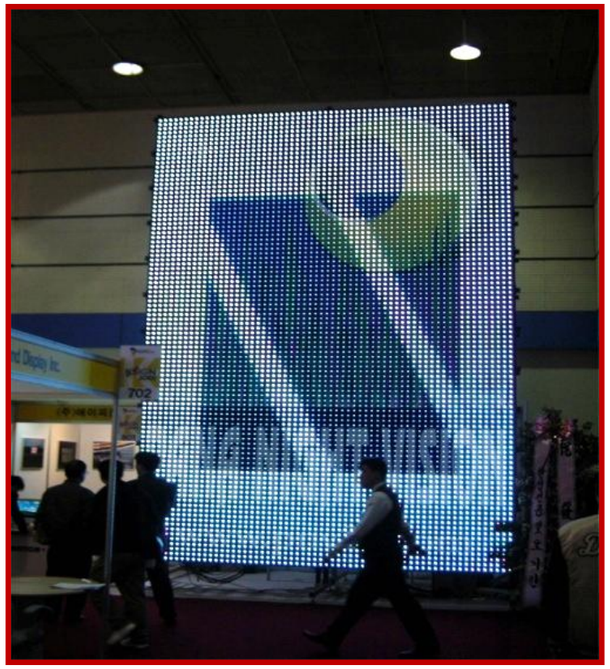
Installation sites – PNV* back light type

- **Back Light**
  Seoul, Korea
  4 X 6M (PNV500 Series)

* PNV: Pana Night Vision

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Installation sites – Indoor type

JS King Hotel Convention room

KOREA

6.4 X 3.1 M (8mm)

Luna Miele wedding hall

KOREA

5.8 X 3.0 M (5mm)

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Installation sites – Indoor type

Gaspel Church main hall

KOREA

3.0 X 1.7M (6mm)

Gaspel Church entrance

KOREA

3.9 X 2.2M (7.62mm)

Gaspel Church 2nd hall

KOREA

4.8 X 2.8M (6mm)

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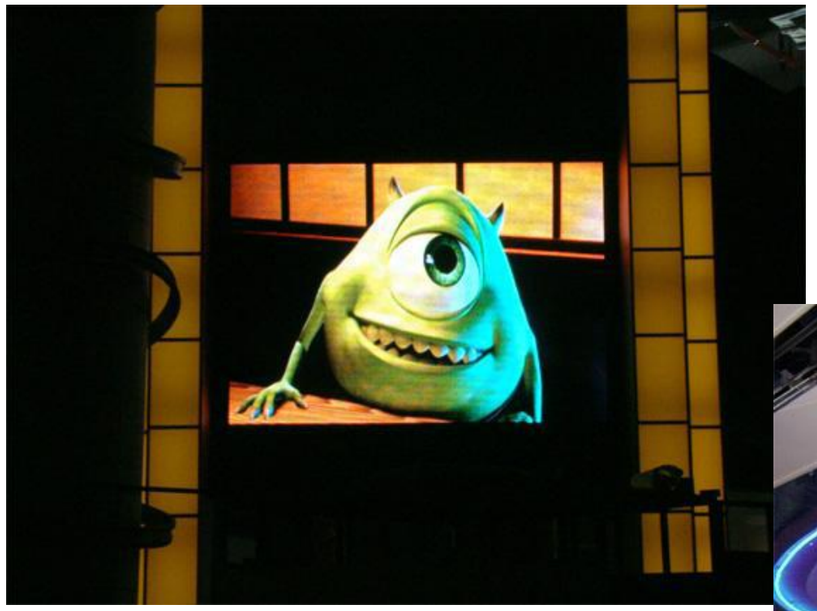
Installation sites – Indoor type



Seoul Megabox (Cinema)

KOREA

4.0 X 2.8M (12.5mm)

SeoMyun Megabox (Cinema)

KOREA

4.0 X 2.8M (12.5mm)

Suwon Megabox (Cinema)

KOREA

4.0 X 2.8M (12.5mm)

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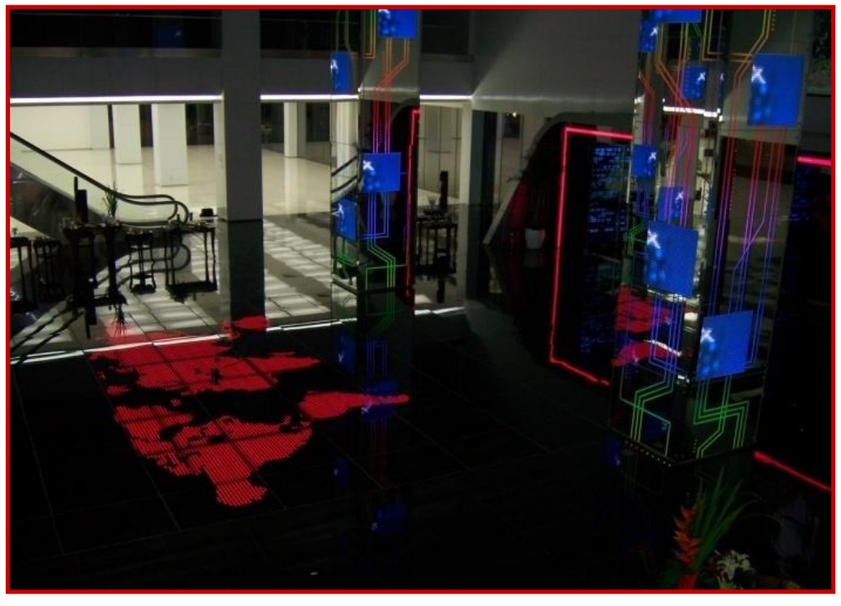
Installation sites – complex type

Guangzhou, China

25 X 10 (16mm)

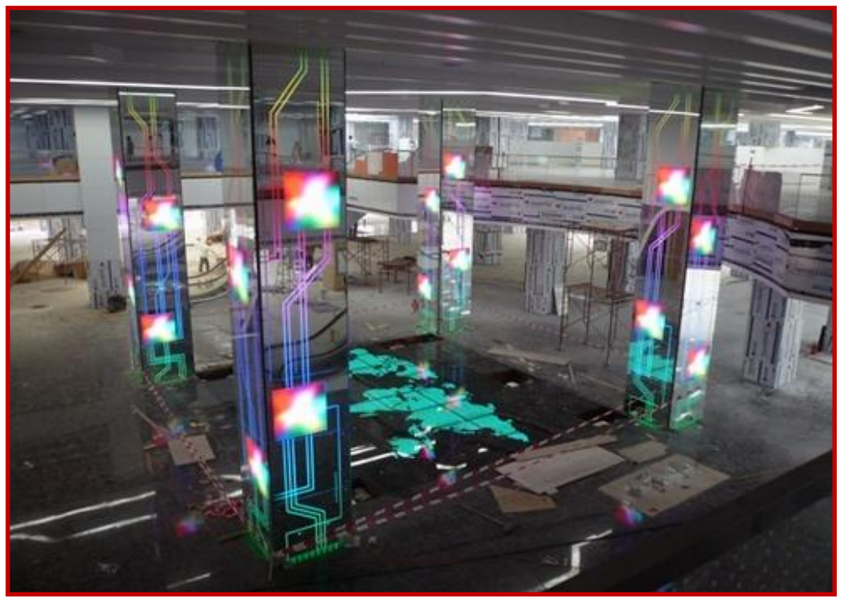
Guangzhou, China

(L-Bar & SMD)



Guangzhou, China

(L-Bar & SMD)

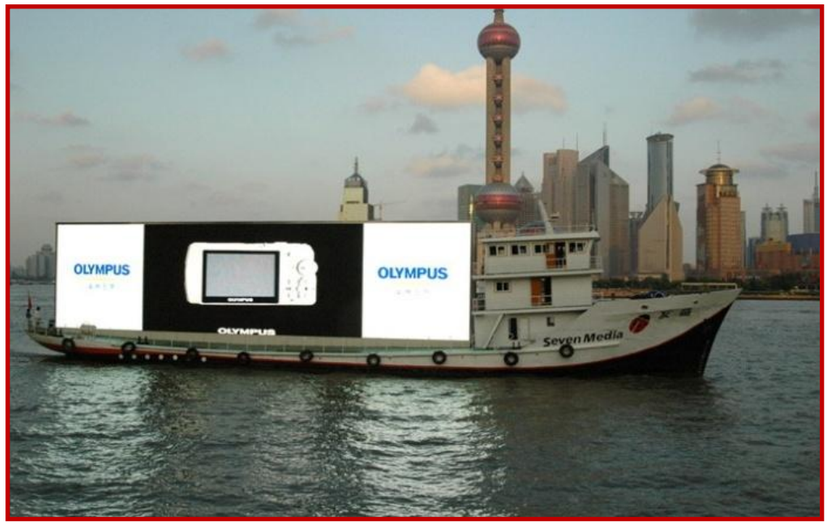


Guangzhou, China

(L-Bar & SMD)

All Right Reserved

Installation sites – various type

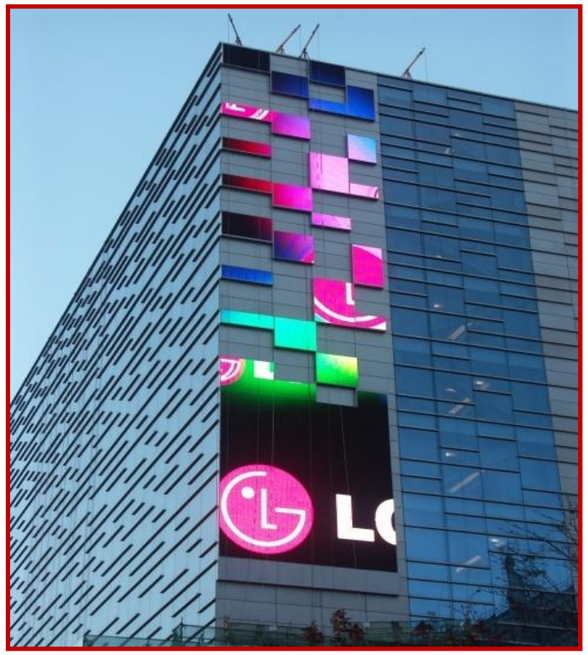


Shanghai,

China

29.57 X 7.74 M

(22mm)



LG IT Centre,

Seoul,

Korea

8 X 38 M

(31.25mm)

CheongDam,

Seoul

(PNV704)

(44mm)

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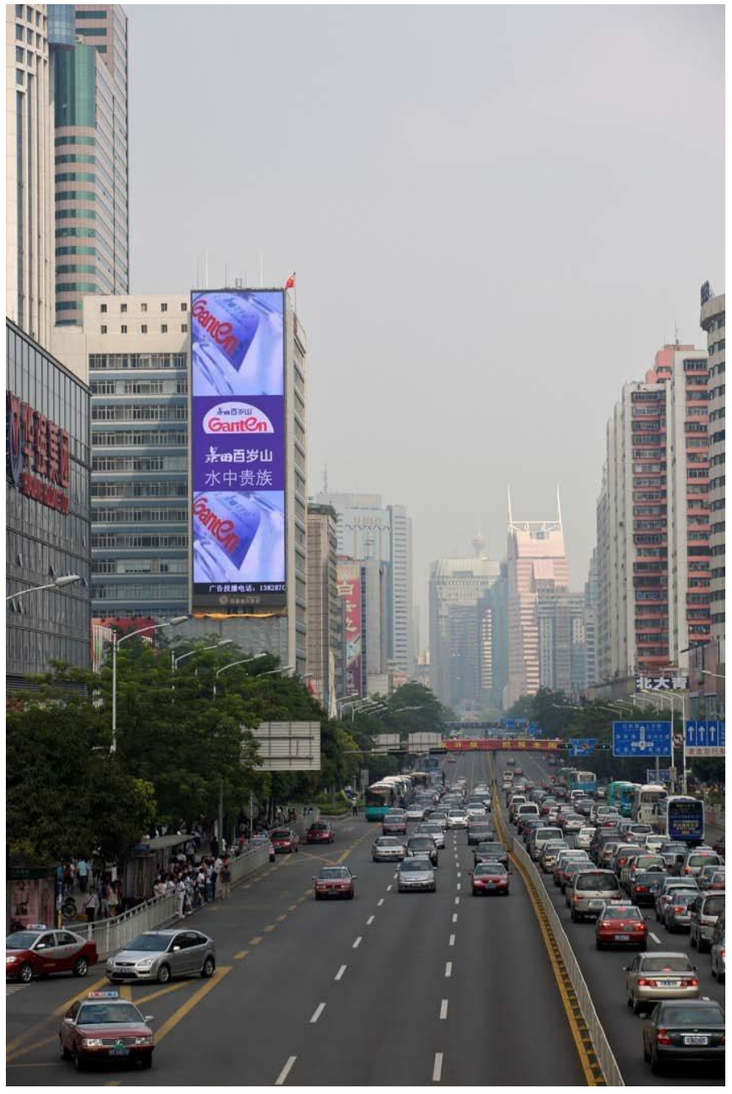
Installation sites – Mega LED 480 m²



Zhong-Dian Building

Shenzhen, China

12 X 40 = 480 m²

(25mm)

All Right Reserved

Installation sites – LED Media Façade

Ulsan S Tower,

KOREA

(LED-Bar)

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Thank You