



Origin of Light - VISSEM



광 속 의 정보전달로 아름다운 세상을 열어가는 기업



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내일의 기술을 현실로 ...

Origin of Light + LED SCREEN



빛으로 세상을 밝히는 기업 - 빛샘전자

Challenge the World+

We, Vissem Electronics, are a leading company in Korea, manufacturing LED screen for indoor and outdoor application.

Since the division from Samsung SDI as a subsidiary company in 1998, we have achieved remarkable progress in the field of LED display business.

In addition, we would like to express our deepest gratitude to our customers that we have successfully developed OBCS (On Board Computerized System) for KTX High-Speed Train in 2000.

Vissem Electronics developed and produced optical communication product itself on 2007, which made Vissem Electronics participated in fast changing optical communication business filed. This is the reason that we're still developing as a well-loved company by domestic and foreign customers.

With getting the company listed on the KOSDAQ, all our executives and staff are doing our best to provide the best quality products and services to our customers. So, we can absolutely improve customer confidence because we realize it's our ultimate happiness.

We are grateful for your interest in our company and you can get further information about us on our website, <http://www.vissem.com>. May you enjoy with our products and services.

CEO. *Manjaon Kang*

기술 개발과 품질 관리로 경쟁우위의 제품을 추구하며
고객을 소중히 생각하고 만족시킴으로써
늘 고객과 함께하겠습니다.

LED 디스플레이 시스템 및 관련부품의 전문제조업체인 빛샘전자는 세계적인 디스플레이 디바이스 업체인 삼성SDI의 LED사업부에서 1998년 분사하였으며, 분사 이래 해마다 새로운 기술과 신뢰성 높은 제품의 출시를 통해 성장 및 발전을 하여 왔습니다.

1999년에는 KTX 고속철도 차량용 제품 등의 첨단기술사업에도 참여하게 되어 국내 KTX차량에 당사 기술로 제작된 차량용 전자제어장치 및 신냉매를 활용한 냉각탱크 등을 공급하였고 이를 통한 기술력 확보로 프랑스 알스톰 등 해외에도 수출하는 기반을 마련하게 되었습니다.

2007년 광통신관련부품의 개발 및 제조로 빠르게 변화하는 광통신 사업분야에도 참여하여 국내 및 해외 고객으로부터 사랑받는 기업으로 성장하고 있습니다.

2012년 빛샘전자는 KOSDAQ 상장으로 고객과 신뢰도 제고에 더욱 노력하여 고객의 만족이 우리의 행복임을 깊이 인식하고 있으며 끊임없는 기술개발과 품질관리를 통한 경쟁력우위의 제품으로 전세계 시장에 도전하고 있습니다. 디지털 기술이 주도하는 새로운 패러다임의 시대에 빛샘전자는 능동적이고 주도적인 변화의 주체가 되어 고객과 함께 하고자 합니다.

많은 사랑과 관심 가져 주시길 기원하며 감사드립니다.

대표이사 강 만 준

세계를 향한 도전을 멈추지 않는 기업

시대적 변화에 적극적으로 투자하고 탁월한 경영 성과를 내기 위해 끊임없이 노력합니다.

미래는 꿈꾸는 사람의 것이고 도전하는 기업의 것입니다.

세계의 모든 고객 여러분께 더 아름다운 미래, 더 풍요로운 내일을 선사하겠습니다.



Business History

KOSDAQ 상장패



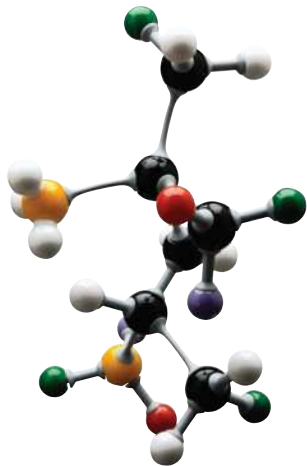
연혁 / Business History

- | | | | |
|------|---|------|---|
| 1998 | · 삼성SD(주)에서 분사하여 빛샘전자(주) 설립 | 1998 | · Divided as a subsidiary company in the name of Vissem Electronics |
| 1999 | · ISO9001 인증 획득 (중소기업인증센터)
· 정보통신공사업 등록 (서울체신청)
· 알스통과 Korean TGV 기술이전계약체결 | 1999 | · ISO9001 certificate (acquired from Small & Medium Industry Certification Center)
· Acquired Information & Telecommunication License
· Contracted with ALSTOM for Korean TGV technical transfer |
| 2000 | · 유망중소기업 선정 (한빛은행)
· 벤처기업 선정 (중소기업청)
· 기술경쟁력우수기업 선정 (중소기업청) | 2000 | · Promising Company (designated by Woori bank)
· Venture Company (designated by Small & Medium Business Administration)
· Highly competitive Technology Company (designated by SMBA) |
| 2001 | · 기업부설연구소 설립인가 (한국산업기술진흥협회) | 2001 | · Established Company R&D Center (Korea Industrial Technology Association) |
| 2002 | · 경기도 용인시로 본사 사옥이전
· 수출유망중소기업 선정 (중소기업청) | 2002 | · Moved into new headquarter/factory in Yongin-city, Gyeonggi-province
· The Potential company for Exporting (designated by SMBA) |
| 2003 | · LED 도트매트릭스모듈에 대한 전자파적합인증 획득 (전파연구소)
· 기술혁신형중소기업 선정 (중소기업청)
· 1백만불 수출의 탑 수상 (한국무역협회)
· 알스통과 France TGV 장차용 OBCS 수출 계약체결 | 2003 | · EMI certificate for LED modules (from Radio Research Laboratory)
· INNO-BIZ company (certified by SMBA)
· Awarded Million Dollar Export Tower prize (from KITA)
· OBCS Sales Contract with ALSTOM to export for France TGV |
| 2004 | · 우량기술기업 선정 (기술신용보증기금)
· ISO9001 & ISO14001 인증 획득 (URS)
· 모범성실납세자 선정 (국세청) | 2004 | · Superior Technology Company (certified by Korea Technology Credit Guarantee Fund)
· ISO9001 & ISO14001 certificate (acquired from United Registrar of Systems)
· Model Taxpayer (designated by National Tax Service) |
| 2005 | · 성실납세 국무총리표창 (행정자치부)
· CE 인증 획득 (TUV Korea)
· 3백만불 수출의 탑 수상 (한국무역협회) | 2005 | · Awarded Prime Minister's prize as Model Taxpayer
· CE certificate (acquired from TUV Korea)
· Awarded Three Million Dollar Export Tower prize (from KITA) |
| 2006 | · 기업신용평가 "A+" 등급 획득 (한국기업데이터)
· 삼진정보통신(주) 인수, 광통신분야 사업 진출 | 2006 | · Acquired "A+" credit rating (from Korea Enterprise Data, business credit researcher)
· Acquisition of Samjin Information & Communications Co., Ltd. |
| 2007 | · RoHS 인증 획득 (국내용 LED모듈)
· NET 신기술 인증 획득 (과기부) | 2007 | · RoHS compliance certified (indoor LED module)
· NET (New Excellent Technology) certified |
| 2008 | · 조달 우수제품 지정
· 환경마크 인증 (친환경상품진흥원)
· LED, FPD 산업 신기술개발 우수업체 정부 시상
· 5백만불 수출의 탑 수상 (한국무역협회) | 2008 | · Excellent Product certificate awarded (Public Procurement Service)
· Korea Eco-Label certified (Korea Eco Product Institute)
· LED, FPD Industry New Technology Development Prize by Government
· Awarded Five Million Dollar Export Tower prize (from KITA) |
| 2009 | · UL 인증 획득 (UL Korea)
· 전기공사업 등록 | 2009 | · UL Certificate (acquired from UL Korea)
· Registered Electric Construction License |
| 2010 | · 지식 경제부장관상 수상
· G20서울정상회의 작품선정 | 2010 | · Awarded Minister's Prize of MKE
· Awarded CHEOMSEONGDAE in G20 SEOUL Summit |
| 2012 | · 코스닥 상장
· 벤처기업인상 수상 (국무총리상)
· NET(신기술) 인증 획득
· GS(Good Software) 인증 획득 | 2012 | · Listed on the KOSDAQ
· Venture Business Award (Premier Award)
· NET (New Excellent Technology) certificate
· GS (Good Software) certificate |
| 2013 | · NET신기술 인증 획득
· 강소기업선정 (고용노동부) | 2013 | · NET new technology certification
· Selected as small the hidden champion (Ministry of Employment and Labor) |
| 2014 | · 성실납세국무총리표창 (행정자치부) | 2014 | · Prime Minister citation on honest tax payment (Ministry of Government Administration and Home Affairs) |
| 2016 | · 글로벌 강소기업 지정 (중소기업청) | 2016 | · Designated global hidden champions (SMBA, Korea) |

빛으로 미래를 향해 도전하는 기업

미래를 꿈꾸는 일은 모든 사람들의 희망을 실현하는 일입니다.

그 희망을 실현하기 위하여 빛샘전자는 항상 연구하고 혁신적인 기술로 도전을 멈추지 않습니다.



빛샘의 사업영역 / Business Area

LED 사업 / LED Business

LED 전광판 (LED Screen)

- 전광판 (LED Screen)
- LED 모듈 (LED Module)
- Display Unit

LED 부품 **ViTron**

- LED LAMP
- SMD LED
- HIGH POWER LED
- IR & PHOTO TR

LED 조명 (LED Lighting)

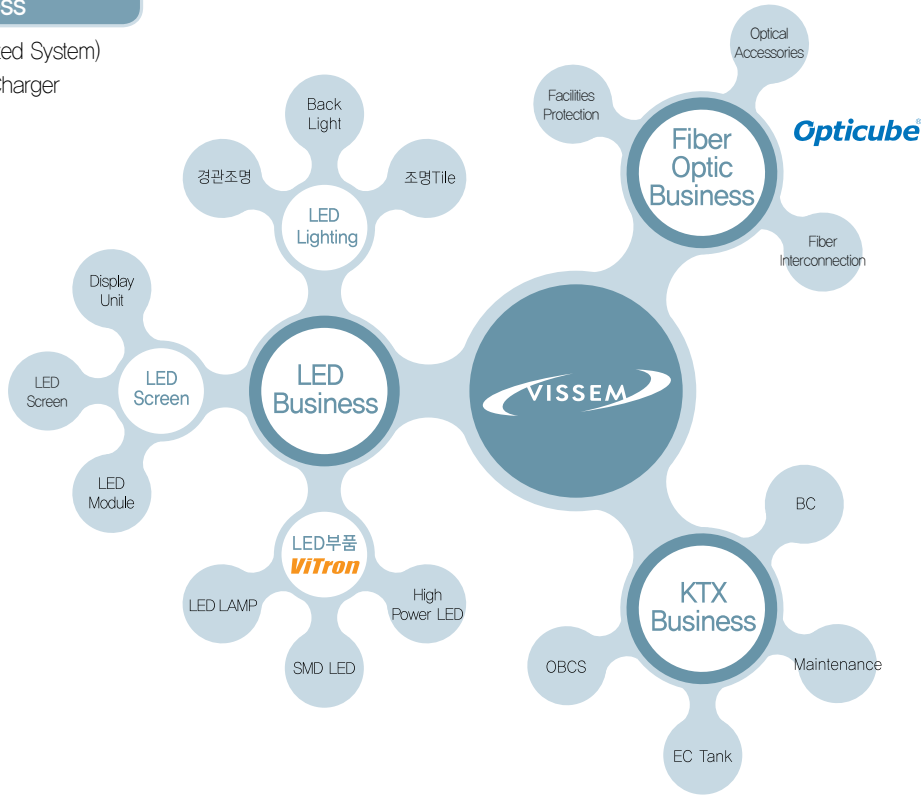
- 경관조명
- 조명 TILE
- 백라이트 (BACK LIGHT)

광통신사업 / Fiber Optic Business **Opticube**

- 광접속보호장비 / Facilities Protection
- 광 분배반 / Fiber Interconnection
- 광 액세서리 / Optical Accessories

KTX 사업 / KTX Business

- OBCS (On Board Computerized System)
- Power / Trailer Car Battery Charger
- Electronic Cooling Tank
- Maintenance



Innovative Activities in VISSEM

1. 오랜 경험과 노하우 / Experience and Know-how

빛샘전자는 1986년 삼성그룹에서 LED Screen 사업을 시작한 이래 약 25 년 동안, 핵심부품인 LED 도트 매트릭스 모듈의 국산화 성공에 이어 LED 디스플레이 시스템 및 관련 모듈과 LED부품에 이르기까지 LED전문 업체로서 다양한 요소기술과 깊은 노하우를 축적하여 왔습니다.

Since 1986 in Samsung, Vissem electronics Co., Ltd. has accumulated very comprehensive knowledge and technology as a specialized company in LED Screen & LED dot matrix module. Through the 25 years of experiences in the LED fields, we can manufacture products ranging from LED components to LED display screen with our own technology and facilities.



2. 공인된 우수한 기술력 / Outstanding Technology

빛샘전자는 설립 이래 기술 개발에 대한 투자를 아끼지 않은 결과 대외의 여러 기관으로부터 우수한 기술력을 인정받게 되었습니다. 기술경쟁력우수기업, 부품소재전문기업 기술혁신중소기업(INNO-BIZ), 우량기술기업 등으로 선정되었고, 또한 2007년 NET(New Excellent Technology)에 이어 2008년 조달청 우수제품, 환경마크인증 등을 획득했습니다.

특히 2002년 부설기술연구소를 설립하여 영상controller 및 운용software, LED 구동 IC, 및 LED 소자, LED 도트 매트릭스 모듈 등 LED 디스플레이 시스템 관련 기술 및 제품에 대한 지속적인 개발활동의 결과 전반적인 핵심기술에 관한 자체 기술력을 확보하고 있습니다.

또한, 지적재산권 보호에도 적극적으로서, 특허등록 21건, 실용신안등록 11건, 디자인등록 1건의 산업재산권을 확보하였고, 또 매년 다수의 특허 및 실용신안이 출원되고 있습니다.

Vissem electronics has made every effort to develop the technologies related to LED display system since established in 1986. Now we have various certifications from authorized organizations ; Highly Competitive Technology Company (SMBA, 2000), INNO-BIZ Company (SMBA, 2003), Superior Technology Company (KTCGF, 2003). We are proud of our technology certified as a NET(New Excellent Tech- nology) by the KOITA in 2007, and also certified Excellent Product by Public Procurement Service, and Korea Eco-Label by the Korea Echo Product Institute in 2008.

Especially resulting from our constant R&D activities in R&D center, we secure almost all core technologies and manufacturing facilities related to LED screen such as LED components, LED dot matrix module, LED driver IC, display controller(hardware/software).

Regarding intellectual property, now 21 patents are registered for new invention and also 11 utility models and 1 design registered, and additional items are applied for patents and utility models every year.



3. 생산 및 제조능력 / Manufacturing Capability

빛샘전자는 1988년 LED 도트 매트릭스 모듈 생산라인을 구축한 이래 LED 시스템 및 LED모듈 제조에 필요한 전반적인 설비를 보강, 증설하여 왔고, 2005년 LED lamp 및 SMD chip LED생산라인을 내부에 구축함으로써 이제는 LED 소자에서부터 LED 스크린 완제품에 이르기까지 수직계열화된 생산이 가능한 일괄생산시스템을 갖추게 되었습니다.

Since establishment of our first production facilities for LED dot matrix modules in 1988, Vissem electronics has strengthen production facilities continuously. Lately, by setting up production lines for SMD chip LED and LAMP LEDs, we make almost all the core products (from LED compo- nents to whole LED screens including LED dot matrix module and display controller) by our vertically integrated total production facilities.



4. 품질 최우선 경영 / Quality-oriented Management

빛샘전자는 고객이 신뢰하고 만족할 수 있는 제품을 만드는 것을 최우선으로 하는 품질경영을 펼치고 있습니다. 설립 이듬해인 1999년 ISO9001인증을 획득하였으며 나아가 친환경 경영 실천을 위해 ISO14001 품질 및 환경 시스템 인증을 2004년 9월에 획득하였습니다.

뿐만 아니라 유럽 및 미주 지역 수출에 필요한 CE, UL인증을 획득하였고, 대다수의 제품에 대해 EMC(전자파적합등록), 환경마크, RoHS적합인증 등을 획득해오고 있습니다.

We put the top priority on manufacturing the reliable and bestquality products which can make our customers satisfied. When in SAMSUNG, we followed very high standard of QA policy of SAMSUNG. After then we acquired ISO 9001 certification in 1999, and also acquired ISO 14001 certification in 2004.

Also various certificates of international standard compliance, such as CE and UL certification, EMC, EP, RoHS compliance were acquired for most products. Now we have changed our production line for manufacturing of Pb free and RoHS complied products.

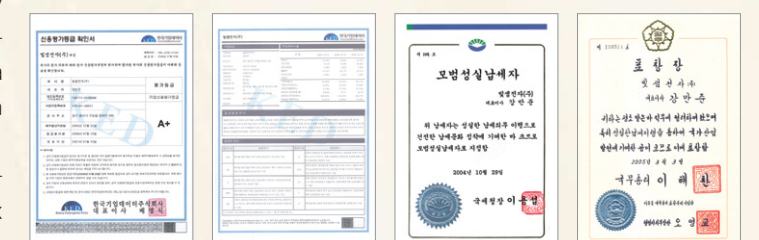


5. 높은 신용 및 재정안정도 / High Credit and Financial Stability

빛샘전자는 삼성에서 분사 설립한 이래 안정적 경영을 통해 16년 연속 흑자를 실현하고 있어 매우 견실한 재무구조를 갖고 있습니다. 정도 경영에 대한 대표이사의 확고한 철학을 바탕으로 2004년 국세청 모범성실납세자 지정, 2005년 국무총리 표창 등을 수상하였으며, 기업신용조사 및 평가 전문기관인 한국기업데이터주식회사의 신용평가에서는 "A+" 의 등급을 획득하여 우량한 신용상태를 인정받고 있습니다.

Vissem electronics has very sound finance status by growing stably so far and has been in the black figures every years since establishment in 1998. And recently we got "A+" credit rating from Korea Enterprise Data, a leading supplier of business credit reports on Korean businesses.

Due to the strong will of the CEO for the clear and honest management, we designated as a model taxpayer by the National Tax Service in 2004, and awarded Prime Minister's prize as an exemplary taxpayer in 2005



LED 부품 – *ViTron*

LED전광판 용도에 가장 적합한 고성능, 고품질, 고신뢰성의 LED부품을 안정적으로 확보하기 위해 빛샘전자는 LED제조라인을 구축하였으며 ViTron 이라는 브랜드로 여러측면에서 차별화된 LED를 생산하고 있습니다.

For securing mostly suitable LED components with higher performance, higher quality, higher reliability, VISSEM has established LED production line and now producing LED lamps and SMD chip LEDs competitive in various aspects by the "VITRON" brand.

LED (Light Emitting Diode)

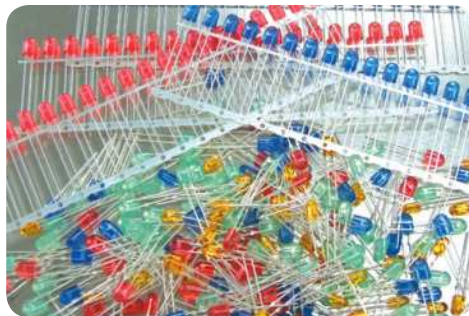
1. SMD Chip LED

- TOP VIEW 2121 SMD LED SERIES
- TOP VIEW 3528 SMD LED SERIES
- TOP VIEW 5450 SMD LED SERIES



2. LAMP Type LED

- 3Ø SUPER OVAL LAMP LED SERIES
- 5Ø ROUND LAMP LED SERIES
- 5Ø SUPER OVAL LAMP LED SERIES
- RECTANGULAR LAMP LED SERIES



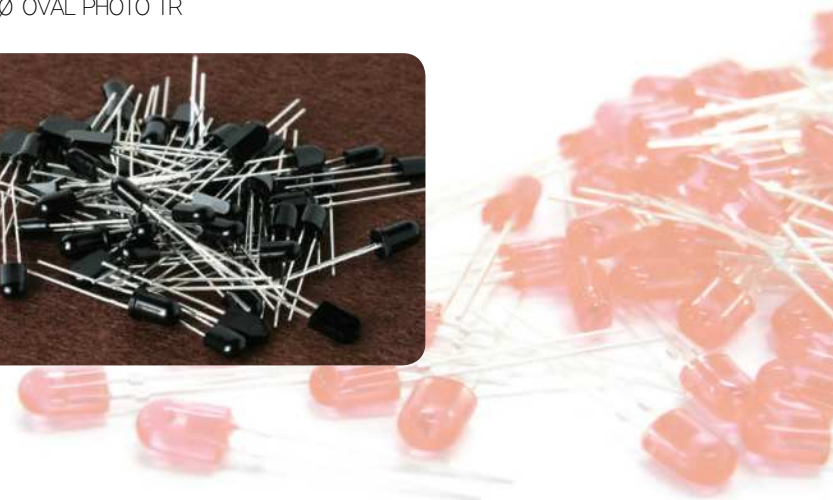
3. IR LAMP TYPE LED

- 5mm RECTANGULAR IR LAMP
- 5Ø ROUND IR LAMP
- 5Ø OVAL IR LAMP



4. Photo TR LAMP Type

- 5mm RECTANGULAR PHOTO TR
- 5Ø ROUND PHOTO TR
- 5Ø OVAL PHOTO TR



• TOP VIEW 2121 SMD LED SERIES

Part No	Color	Dominant Wavelength W _d (nm)	Luminous Intensity I _v (mcd)	Forward Voltage V _F (V)	Forward Current I _F (mA)	Viewing Angle 2Θ ½ (degree)
SMD2121FC	Red	625 nm	300 mcd	2.2 V	20 mA	110° / 110°
	Pure Green	525 nm	700 mcd	3.2 V	20 mA	110° / 110°
	Blue	467 nm	150 mcd	3.2 V	20 mA	110° / 110°



• TOP VIEW 3528 SMD LED SERIES

Part No	Color	Dominant Wavelength W _d (nm)	Luminous Intensity I _v (mcd)	Forward Voltage V _F (V)	Forward Current I _F (mA)	Viewing Angle 2Θ ½ (degree)
VPSFC3528	Red	625 nm	600 mcd	2.2 V	20 mA	120° / 120°
	Pure Green	525 nm	1200 mcd	3.2 V	20 mA	120° / 120°
	Blue	467 nm	300 mcd	3.2 V	20 mA	120° / 120°
VPSAM3528	Amber	590 nm	300 mcd	2.2 V	20 mA	120° / 120°



• TOP VIEW 5450 SMD LED SERIES

Part No	Color	Dominant Wavelength W _d (nm)	Luminous Intensity I _v (mcd)	Forward Voltage V _F (V)	Forward Current I _F (mA)	Viewing Angle 2Θ ½ (degree)
VPSFC5450	Red	625 nm	700 mcd	2.0 V	20 mA	120° / 120°
	Pure Green	525 nm	1300 mcd	3.2 V	20 mA	120° / 120°
	Blue	467 nm	300 mcd	3.2 V	20 mA	120° / 120°
VPSRG5450	Red 1	625 nm	700 mcd	2.2 V	20 mA	120° / 120°
	Pure Green	525 nm	1300 mcd	3.2 V	20 mA	120° / 120°
	Red 2	625 nm	700 mcd	2.2 V	20 mA	120° / 120°





• 5Ø ROUND LAMP LED SERIES

Part No	Color	Dominant Wavelength λ_D (nm)	Luminous Intensity I_v (mcd)	Forward Voltage V_F (V)	Forward Current I_F (mA)	Viewing Angle $2\theta_{1/2}$ (degree)
VPLRR5-66	Red	625 nm	1,400 mcd	2.2 V	20 mA	60° / 60°
VPLGR5-66	Pure Green	525 nm	4,500 mcd	3.2 V	20 mA	60° / 60°
VPLBR5-66	Blue	467 nm	600 mcd	3.2 V	20 mA	60° / 60°



• 5Ø SUPER OVAL LAMP LED SERIES

Part No	Color	Dominant Wavelength λ_D (nm)	Luminous Intensity I_v (mcd)	Forward Voltage V_F (V)	Forward Current I_F (mA)	Viewing Angle $2\theta_{1/2}$ (degree)
VPLRS5-B4	Red	625 nm	1,200 mcd	2.2 V	20 mA	110° / 40°
VPLGS5-B4	Pure Green	525 nm	2,800 mcd	3.2 V	20 mA	110° / 40°
VPLBS5-B4	Blue	467 nm	600 mcd	3.2 V	20 mA	110° / 40°



• 3Ø SUPER OVAL LAMP LED SERIES

Part No	Color	Dominant Wavelength λ_D (nm)	Luminous Intensity I_v (mcd)	Forward Voltage V_F (V)	Forward Current I_F (mA)	Viewing Angle $2\theta_{1/2}$ (degree)
VPLRS3-B4	Red	625 nm	1,200 mcd	2.2 V	20 mA	110° / 50°
VPLRS3-B4	Pure Green	525 nm	2,800 mcd	3.2 V	20 mA	110° / 50°
VPLRS3-B4	Blue	467 nm	600 mcd	3.2 V	20 mA	110° / 50°



• RECTANGULAR TYPE LAMP LED SERIES

Part No	Color	Dominant Wavelength λ_D (nm)	Luminous Intensity I_v (mcd)	Forward Voltage V_F (V)	Forward Current I_F (mA)	Viewing Angle $2\theta_{1/2}$ (degree)
VPLRCT-C5	Red	625 nm	1,000 mcd	2.2 V	20 mA	120° / 50°
VPLRCT-C5	Pure Green	525 nm	2,200 mcd	3.2 V	20 mA	110° / 40°
VPLRCT-C5	Blue	467 nm	400 mcd	3.2 V	20 mA	110° / 40°



LED 부품 – ViTron



• INFRARED LED LAMP SERIES

Part No	PACKAGE	Peak Wavelength λ_P (nm)	Radiant Intensity I_E (mW/sr)	Forward Voltage V_F (V)	Forward Current I_F (mA)	Viewing Angle $2\theta_{1/2}$ (degree)
VPI5T-940-WN30	RECTANGLE	940 nm	15 mW	1.2 V	20 mA	30° / 10°
VPI5R-940-WN30	5Ø ROUND	940 nm	20 mW	1.2 V	20 mA	30° / 30°
VPI5R-850-WN40	5Ø ROUND	850 nm	140 mW	1.4 V	50 mA	40° / 40°
VPI5V-850-WN60	5Ø OVAL	850 nm	55 mW	1.4 V	50 mA	60° / 30°



• PHOTO TRANSISTOR SERIES

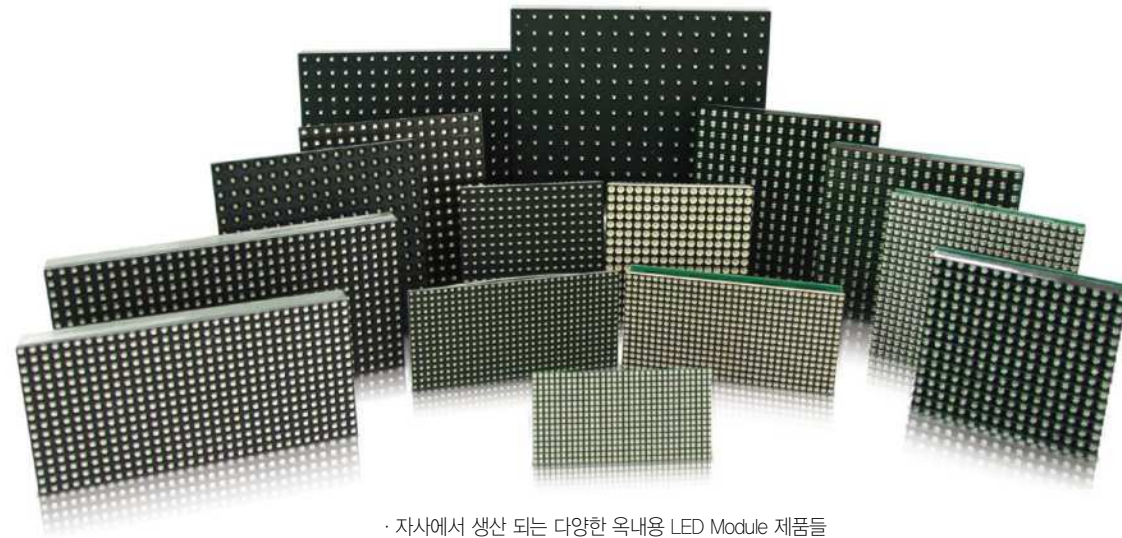
Part No	PACKAGE	Wavelength of Peak Sensitivity λ_P (nm)	On State Collector Current ICEL (mA)	LENS TYPE	Receiving Angle $2\theta_{1/2}$ (degree)
VPP5T-PTR-BN20	RECTANGLE	940 nm	6.5 mA	BLACK	20° / 10°
VPP5R-PTR-BN30	5Ø ROUND	940 nm	22 mA	BLACK	30° / 30°
VPP5R-PTR-BN60	5Ø ROUND	850 nm	5.5 mA	BLACK	60° / 60°
VPP5V-PTR-BN60	5Ø OVAL	850 nm	8.0 mA	BLACK	60° / 30°



LED Dot Matrix MODULE

옥내용 LED 모듈 / Indoor use LED Dot Matrix Module

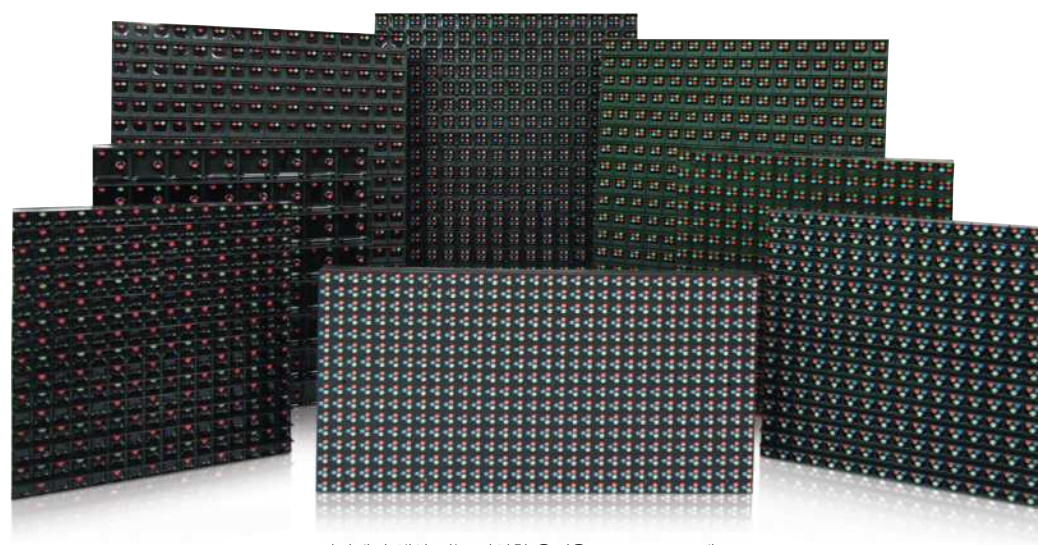
- Slim한 구조
- 방열특성을 고려한 제품 설계
- Watch Dog 회로 적용
- Simple structure
- Designed for protection against heat
- Watch Dog Circuit is applied



· 자사에서 생산 되는 다양한 옥내용 LED Module 제품들

옥외용 LED 모듈 / Outdoor use LED Dot Matrix Module

- White Balance 관리
- contrast 향상을 위한 후드 표면처리
- 옥외 환경에 적합 구조 설계(방수 구조)
- Management of white balance
- Hood Surface treatment to improve contrast
- Designed for outdoor environments (water proof)

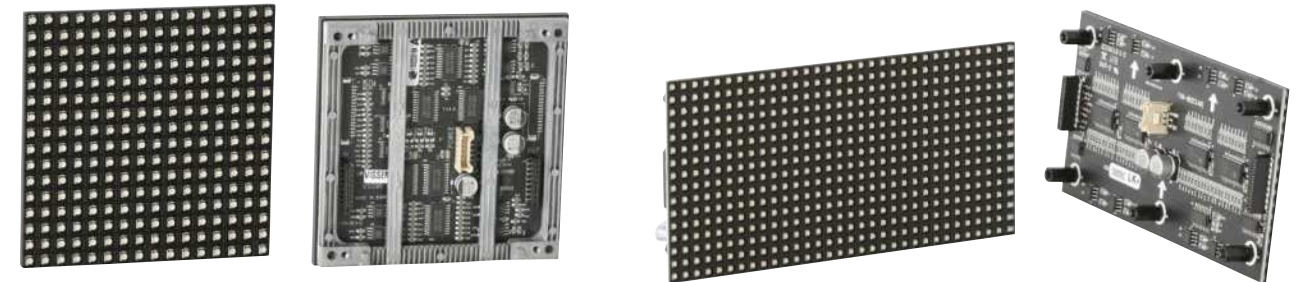


· 자사에서 생산 되는 다양한 옥외용 LED Module 제품들

LED MODULE

1. Indoor Use LED Module

• FULL-COLOR SERIES (R+PG+B)

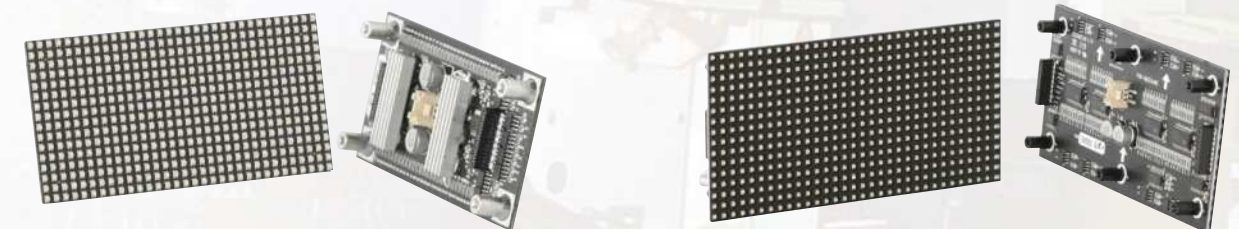


Die casting Type

Support Type

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS048F111-0	32 × 32	128 × 128	3	1/16	1,000	110° / 110°	12.5	
VS056F111-8	64 × 64	224 × 224	3.5	1/8	2,800	110° / 110°	58.5	
VS064F111-8	32 × 16	128 × 64	4	1/8	3,500	110° / 110°	12.5	
VS096F111-8	16 × 16	96 × 96	6	1/8	3,500	110° / 110°	12.5	32 × 16
VS128F111-8	16 × 16	128 × 128	8	1/8	3,500	110° / 110°	15	
VS160F111-4	16 × 16	160 × 160	10	1/4	3,500	110° / 110°	25	
VS192F111-4	16 × 16	192 × 192	12	1/4	3,000	110° / 110°	25	
VS200F111-4	16 × 16	200 × 200	12.5	1/4	3,500	110° / 110°	40	

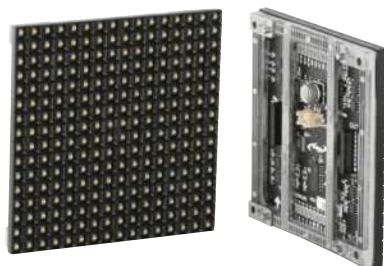
• TRI-COLOR SERIES (R+YG/R+PG)



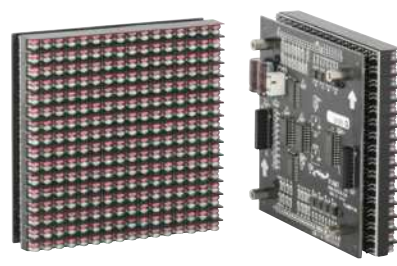
Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS040T110-0	32 × 16	80 × 40	2.5	1/16	650	130° / 130°	5	PG
VS048T110-0	32 × 16	96 × 48	3	1/16	550	130° / 130°	12.5	1/8 - PG
VS064T110-0	32 × 16	128 × 64	4	1/16	480	130° / 130°	12.5	1/8 - PG

(1/8 duty 및 Pure Green 적용가능)

• TRI-COLOR SERIES (R+YG/R+PG)



SMD Chip LED Type



LED Lamp Type

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS096T110-0	16 × 16	96 × 96	6	1/16	420	130° / 130°	13	1/8 – PG
VS120T110-8	16 × 16	120 × 120	7.5	1/8	3,000	110° / 110°	13	
VS128T110-0	16 × 16	128 × 128	8	1/16	300	130° / 130°	13	1/8 – PG
VS192T110-8	16 × 16	192 × 192	12	1/8	800	110° / 110°	12.5	
VL096TR-16S	16 × 16	96 × 96	6	1/16	5,000	70° / 30°	7.5	
VL128TR-08S	16 × 16	128 × 128	8	1/8	5,000	70° / 30°	10	

• TRI-COLOR SPECIALITY ITEM (SMD Chip LED Type)

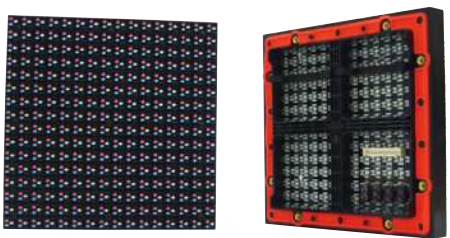
Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS096AB-0	16 × 16	96 × 96	6	1/16	420	130° / 130°	10	A + B
VS128AB-0	16 × 16	128 × 128	8	1/16	300	130° / 130°	11	A + B
VS096RW-0	16 × 16	96 × 96	6	1/16	1,100	130° / 130°	11	R + W
VS128RW-0	16 × 16	128 × 128	8	1/16	1,000	130° / 130°	11	R + W

(Amber / Blue / Red / White)

LED MODULE

2. Outdoor Use LED Module

• FULL-COLOR SERIES (R+PG+B)

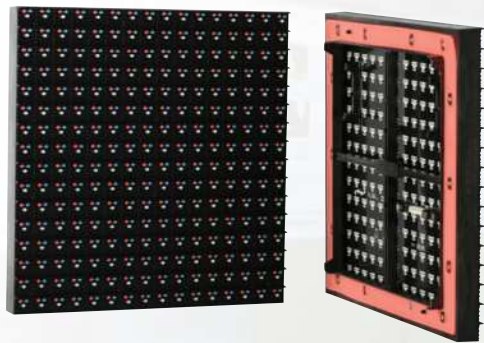


16 × 16 Dot Type

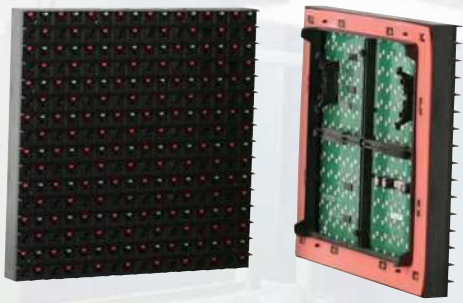


16 × 16 Dot Type

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VL160F111-1	16 × 16	160 × 160	10	Static	10,000	110° / 45°	22.5	
VL200F111-1	16 × 16	200 × 200	12.5	Static	10,000	110° / 40°	27.5	
VL240F111-1	16 × 16	240 × 240	15	Static	10,000	110° / 40°	40	
VL250F111-1	16 × 16	250 × 250	15.625	Static	10,000	110° / 40°	42.5	
VL280F111-1	16 × 16	280 × 280	17.5	Static	10,000	110° / 40°	50	



16 × 16 Dot Type

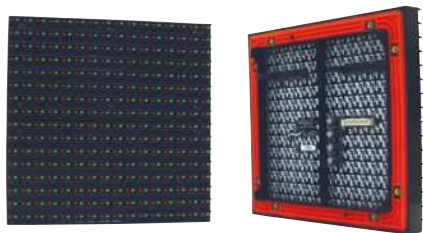


8 × 8 Dot Type

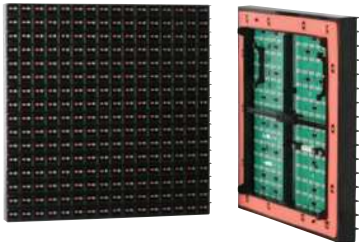
Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m ²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VL300F111-1	16 × 16	300 × 300	18.75	Static	9,000	110° / 40°	62.5	
VL320F111-1	16 × 16	320 × 320	20	Static	9,000	110° / 40°	70	
VL400F211-1	8 × 8	200 × 200	25	Static	6,000	110° / 40°	20	Quarter of
VL480F211-1	8 × 8	240 × 240	30	Static	5,000	110° / 40°	22.5	Quarter of

(400[480] : Quarter of 400[480] × 400[480])

• TRI-COLOR SERIES (R+PG)



16 × 16 Dot Type



16 × 16 Dot Type

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VL160T110-1	16 × 16	160 × 160	10	Static	7,000	110° / 40°	32.5	
VL200T110-8	16 × 16	200 × 200	12.5	1/8	6,000	110° / 40°	20	
VL240T110-1	16 × 16	240 × 240	15	Static	8,000	110° / 40°	35	
VL240T110-8	16 × 16	240 × 240	15	1/8	4,500	110° / 40°	22.5	
VL300T110-1	16 × 16	300 × 300	18.75	Static	8,000	110° / 40°	37.5	
VL320T210-1	16 × 16	320 × 320	20	Static	7,000	110° / 40°	40	
VL320T210-8	16 × 16	320 × 320	20	1/8	3,000	110° / 40°	25	
VL400T210-1	8 × 8	200 × 200	25	Static	6,000	110° / 40°	17.5	Quarter of
VL480T210-1	8 × 8	240 × 240	30	Static	6,000	110° / 40°	20	Quarter of

(400[480] : Quarter of 400[480] × 400[480])

LED MODULE

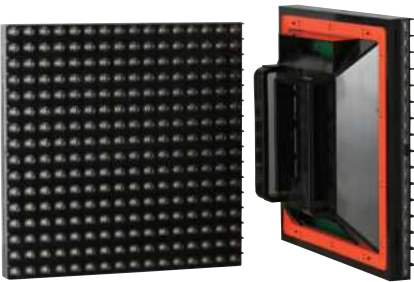
• SMD OUTDOOR FULL-COLOR SERIES (R+PG+B)



SMD Type

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS128F111-4	16 × 16	128 × 128	8	1/4	7,000	110° / 110°	15	
VS160F111-1	16 × 16	160 × 160	10	Static	10,000	110° / 110°	30	
VS200F111-1	16 × 16	200 × 200	12.5	Static	10,000	110° / 110°	40	
VS240F111-1	16 × 16	240 × 240	15	Static	8,000	110° / 110°	50	
VS256F111-1	16 × 16	250 × 250	16	Static	8,000	110° / 110°	60	

• VMS MODULE



SMD LENS Type(도로공사 표준)



LAMP Type(건설기술교통연구원 표준)

Model No.	No.of Pixels	Size (mm)	Pitch (mm)	Duty Ratio	Brightness (cd/m²)	Viewing Angle (H/V)	Power Consumption (W)	Remarks
VS300T210-1	16 × 16	300 × 300	18.75	Static	7,000	45° / 45°	32.5	SMD Type
VS300F111-1	16 × 16	300 × 300	18.75	Static	11,000	45° / 45°	55	SMD Type
VL300T110-1	16 × 16	300 × 300	18.75	Static	8,000	60° / 60°	45	Lamp Type
VL300T1P1-01S	16 × 16	300 × 300	18.75	Static	7,200	60° / 60°	50	
VL300T2P1-01S	16 × 16	300 × 300	18.75	Static	7,200	60° / 60°	50	
VL400T2P1-01S	8 × 8	200 × 200	25	Static	7,200	60° / 60°	15	Quarter of
VL500T2P1-01S	8 × 8	250 × 250	31.25	Static	5,500	60° / 60°	15	Quarter of

(400[500] : Quarter of 400[500] × 400[500])



LED Screen Controller

1. VDU,(Video Distributor Unit)

VDU는 PC또는 Video Processor등 DVI 영상 출력이 가능한 장비로부터 Digital 영상신호를 입력 받아 광 신호로 변환하여 LED전광판의 SCU를 전송하는 기능을 합니다.

The V.D.U get signal from PC or Video processor which has DVI out and transform to optic signal and it transmits to S,C,U

Specification	
Processing	RGB Each 12/13/14/16bit
Gradation	Each Color 4096~65536 Step
Frame rate	60Hz
Input	1280 × 1024 ~ 1920 × 1080 (HD) @ 60Hz (Compliant with DVI 1.0)
Output	512×320@ 60Hz x 4port VSD(Fiber Optic 2~4개)
Control	RS232C / RS485C
Monitoring	DVI-Output
Size	(W : 260mm / H : 470m / D : 217mm)
Power	DC 5V±0.2 / 3.0A / Max. 15W
Weight	2.5kg
Certification (인증)	KC Certification (KCC-REM-VIS-VDU)
Optical Output	50u/125, 60u/125 mult mode GOF / SC Type
	Transmission distance : ~250M (Max.)



2. SCU.(Scan Controller Unit)

SCU는 VDU로부터 광 신호를 받아서 LED모듈로 전달하는 기능을 합니다

The S.C,U receives optic signal from V,D,U and then it transmits signal to modules.

Specification	
Processing	RGB Each 12/13/14/16bit
Gradation	Each Color 4096 ~ 65536 Step
Frame rate	240 ~ 1,920Hz
Input	512 × 320 @ 60Hz VSDI
Output	128 × 64 ~ 512 × 64 dots Static / Dynamic (1/4, 1/8, 1/16 duty)
Size	W : 160 × H : 114mm
Power	DC 5V ± 0.2 Max. 10W
Certification (인증)	KC Certification (KCC-REM-VIS-SCU)
Optical Output	50u/125, 60u/125 mult mode GOF / SC Type
	Transmission distance : ~250M (Max.)



LED Screen Unit



전광판 기본 유닛



Unit 부착 구조물

• OUTDOOR SERIES SPEC

Item		Unit size	No.of Module	No.of Pixel	Power
Outdoor	10mm Pitch	(W)2,560 x (H)1,280mm	(W)16 x (H)8 Modules	(W)256 x (H)128	3Kw
	12.5mm Pitch	(W)1,600 x (H)1,600mm	(W)8 x (H)8 Modules	(W)128 x (H)128	3Kw
	15mm Pitch	(W)1,920 x (H)960mm	(W)8 x (H)4 Modules	(W)128 x (H)64	3Kw
	18.75mm Pitch	(W)2,400 x (H)1,200mm	(W)8 x (H)4 Modules	(W)128 x (H)64	3Kw
	20mm Pitch	(W)2,560 x (H)1,280mm	(W)8 x (H)4 Modules	(W)128 x (H)64	3Kw
	25mm Pitch	(W)2,400 x (H)1,600mm	(W)6 x (H)4 Modules	(W)96 x (H)64	2.5Kw

※상세 규격은 영업팀에 문의바랍니다.

• INDOOR SERIES SPEC

Item		Unit size	No.of Module	No.of Pixel	Power
Indoor	4mm Pitch	(W)1,024 x (H)512mm	(W)16 x (H)8 Modules	(W)256 x (H)128	640Kw
	5mm Pitch	(W)1,280 x (H)640mm	(W)16 x (H)8 Modules	(W)128 x (H)128	640Kw
	6mm Pitch	(W)1,536 x (H)768mm	(W)16 x (H)8 Modules	(W)128 x (H)64	640Kw
	8mm Pitch	(W)1,024 x (H)1,024mm	(W)8 x (H)8 Modules	(W)128 x (H)64	640Kw

※상세 규격은 영업팀에 문의바랍니다.

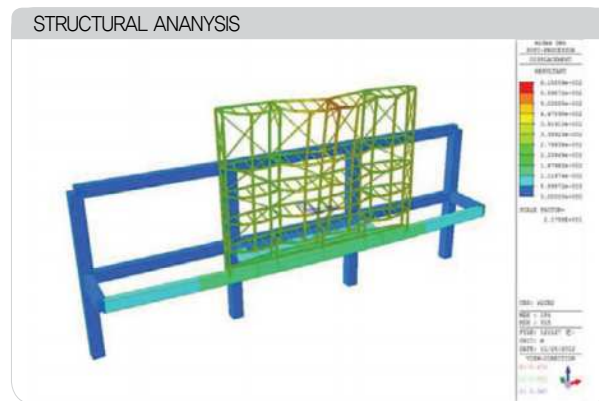
환경 및 품질 테스트 / Environmental and quality test

외부 환경에 대한 각각의 품질 공정을 거쳐 제품 출하를 하고 있습니다.

The product is consigned after passing through each quality process on the external environment.



휘도, 색좌표 테스트



구조 안전진단 설계



온도, 습도 테스트 장비



방수 테스트

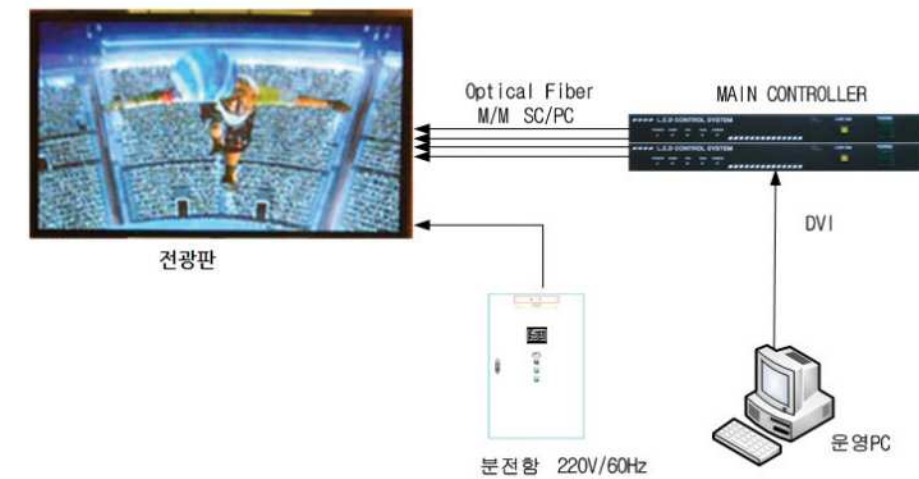


진동 시험 장비

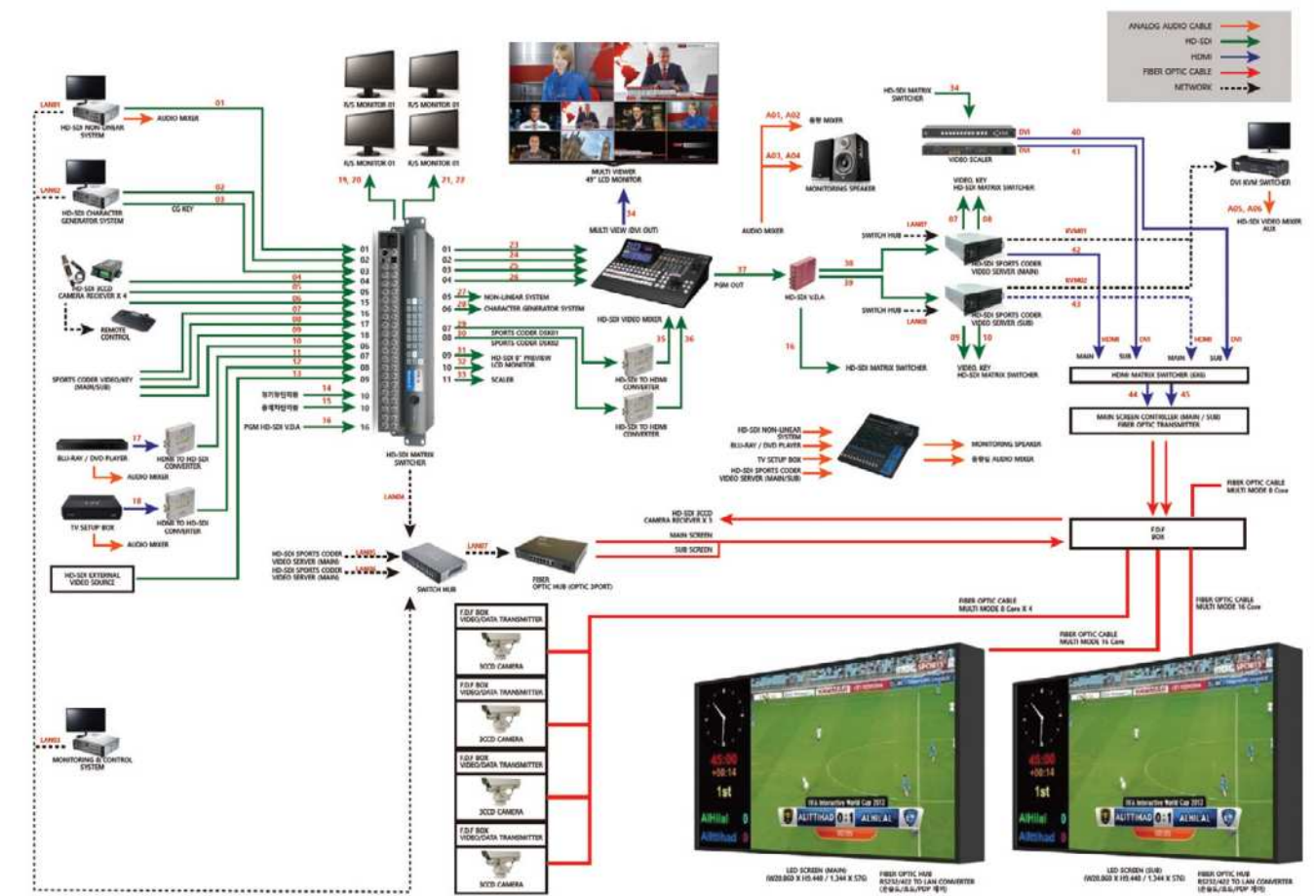


종합 테스트

System Diagram



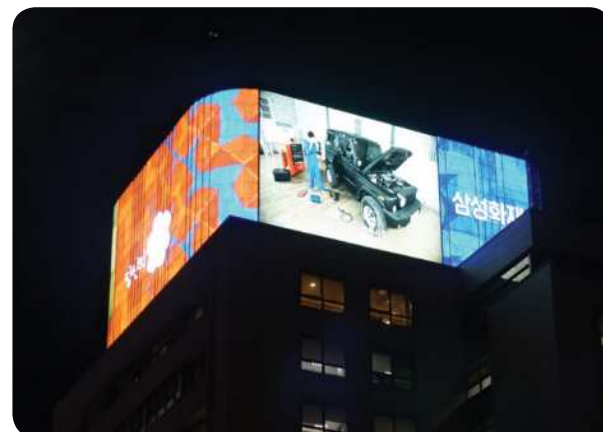
〈기본형 시스템 구성〉



〈경기장 시스템 구성〉



삼성화재 본사 “디지털스퀘어”



특징

- 미디어파사드와 LED전광판의 조합
- 3면형 DISPLAY
- 미려한 곡면처리 기술

LED SCREEN : 15mm pitch
미디어파사드 : 37.5mm pitch

옥외 SMD LED제품 / Outdoor SMD LED product

LED CHIP성능 개선으로 최근 옥외 환경에 SMD LED를 적용하는 사례가 늘고 있습니다. SMD LED는 LAMP LED보다 가시각이 넓으며, 혼색성이 좋습니다.

By the improvement in the LED CHIP performance, recently there are more cases of applying SMD LED in the outdoor environment. SMD LED has wider angle of visibility and good color mixing ability.



SUNTEC(싱가폴) (W)12.3×(H)14.4m / 16mm pitch / SMD TYPE



수원컨벤션센터 / 8mm pitch / SMD TYPE



SBS프리즘타워(상암동) / 12.5mm pitch / SMD TYPE



강남구청 / 12.5mm pitch / SMD TYPE



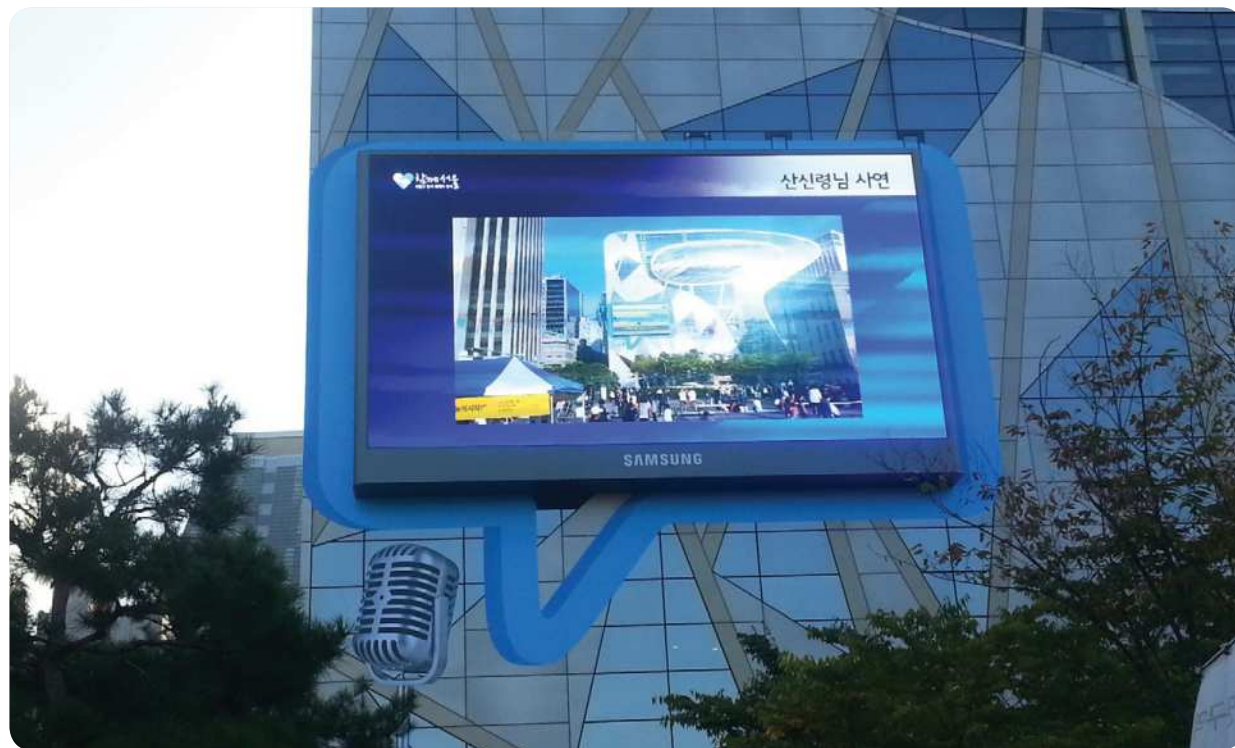
대전 “은혜정이거리” - (L)214m×(W)13.3m / 29mm pitch

LED Screen

1. 홍보 · 광고 스크린 / LED Screen for Information & Advertising

홍보 및 광고용 LED 스크린은 상업광고, 기업홍보, 시정홍보용 등으로 사용되고 있습니다.

LED Screen for Information & Advertising is used for commercials, companies, civic promotion etc.



서울시청(W)12.8×(H)7.2m / 12.5mm Pitch



부산은행(부산) (W)14.5×(H)8.75m / 15.625mm Pitch



국립중앙박물관(서울) (W)11.26×(H)3.58m / 8mm Pitch

• 옥외용 – 지주 설치형 (적용 PITCH : 10mm ~ 20mm) / Outdoor – Pole type (Dot Pitch : 10mm ~ 20mm)



대전통계센터(대전) (W)7.2×(H)3.9m / 18.75mm Pitch

• LED전자 현수막



전자현수막(서울) (W)6×(H)1.44m / 15mm Pitch

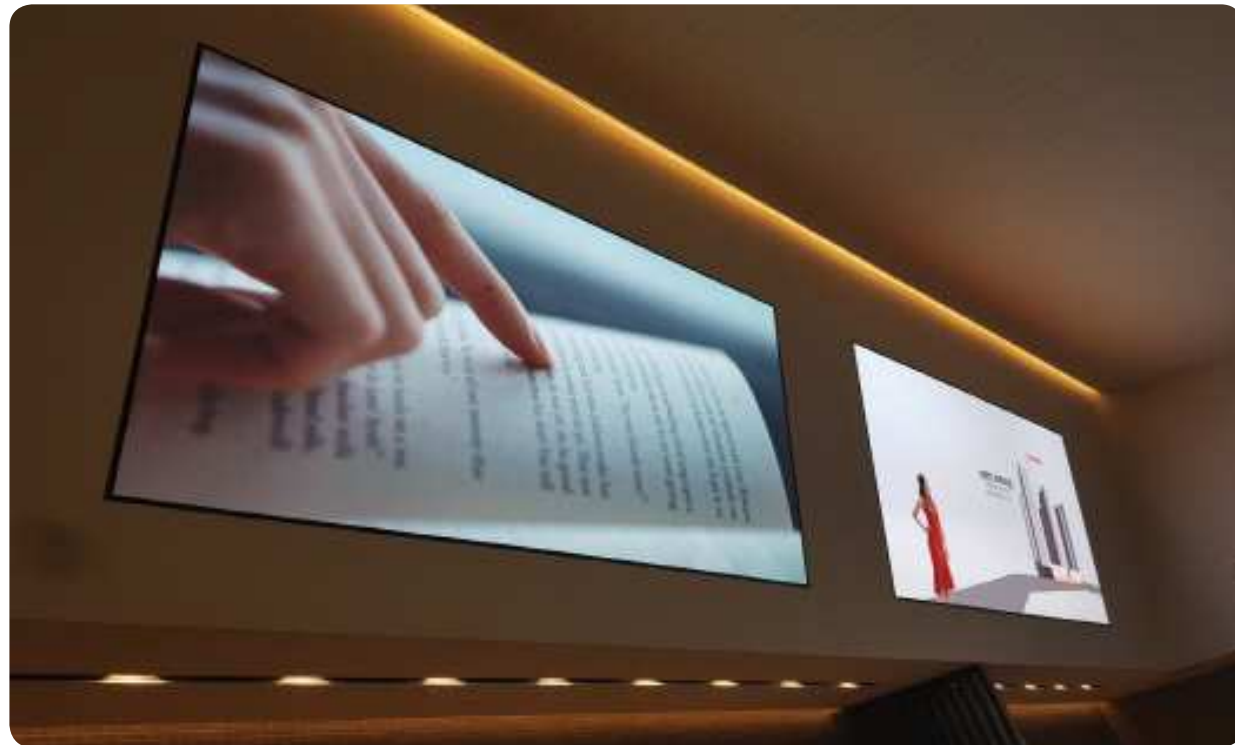


전자현수막(대구) (W)6×(H)1.92m / 15mm Pitch

• 실내용 스크린 (적용 PITCH : 3mm ~ 10mm) / Indoor Screen (Dot Pitch : 3mm ~ 10mm)

실내의 고해상도 DISPLAY에 프로젝터, PDP, LCD를 대체하기 위해서 LED Screen을 적용하는 추세입니다. LED Screen을 적용할 경우 화면 사이의 간격 없이 대형화시킬 수 있으며 고 해상도 구현이 가능합니다.

The current trend is LED Screen replacing projector, PDP, LCD for Indoor high resolution Display, In case LED Screen is applied, It can enlarge screen without space. Also, high resolution is possible.



모델하우스 LED 전광판(서울) (W)8.0×(H)4.5m / 3.9mm Pitch



부영 송도타워(인천) (W)8.4×(H)17m / 25mm Pitch



삼성화재(서울) (W)5×(H)5.6m / 3.5mm Pitch

• 교회 LED 스크린 (적용 PITCH : 3mm ~ 6mm) / LED Screen for church (Dot Pitch : 3mm ~ 6mm)

유지보수 비용이 적게 들며 고 해상도를 구현할 수 있는 LED Screen이 개발됨에 따라서 빔 프로젝터를 대체하여 많이 사용하고 있습니다.

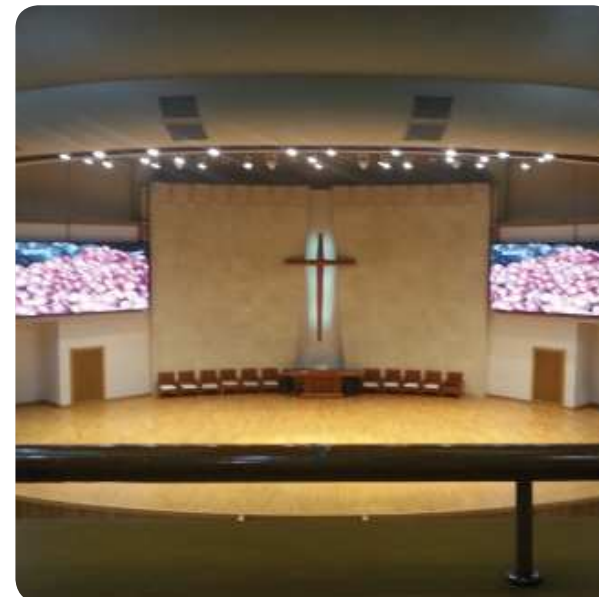
Invention of LED Screen replaces beam projector because it makes high resolution and low cost maintenance.



새에덴교회 (W)6.5×(H)3.5m 3mm Pitch



한소망교회(경기 일산) (W)7.68×(H)4.32m 6mm Pitch



서울신학대학교 성결의 전당(W)4.6×(H)2.6m 4mm pitch



대흥침례교회(대전) (W)4.5×(H)2.5m 2.84mm Pitch

2. 정보표지 전광판 / LED Information Display board

정보표지전광판은 정보를 중앙 운영 서버로부터 수집하여, 전광판에 실시간으로 데이터를 표출하는 시스템입니다.

Information Display board collects information from central operation server. This system shows data at LED screen in real time.



가변정보표지판 (Variable Message System)



환경정보표지판 (Environment Message System)

3. 운동경기중계/스코어보드 / Sport Stadium Screen & Score board

스코어보드는 경기 정보를 실시간으로 관중들에게 제공하는 전광판입니다.

카메라, DVD등의 영상입력 장비와의 실시간 중계가 가능하도록 구축된 시스템입니다.

Sports Stadium Screen & Score board shows game information to audience in real time.

Real time transmission is possible with image input device such as camera and DVD.



월드컵경기장(수원) (W)21m×(H)9.9m 15mm Pitch



월드컵경기장(수원) 운영실



F1경기장(영암) (W)8.64×(H)4.8m



종합운동장(이천)
(W)12.8×(H)7.04m / 20mm Pitch



청주대학교 실내체육관(청주)
(W)5x(H)3m / 8mm pitch

4. LED 미디어 아트 / LED Media Art

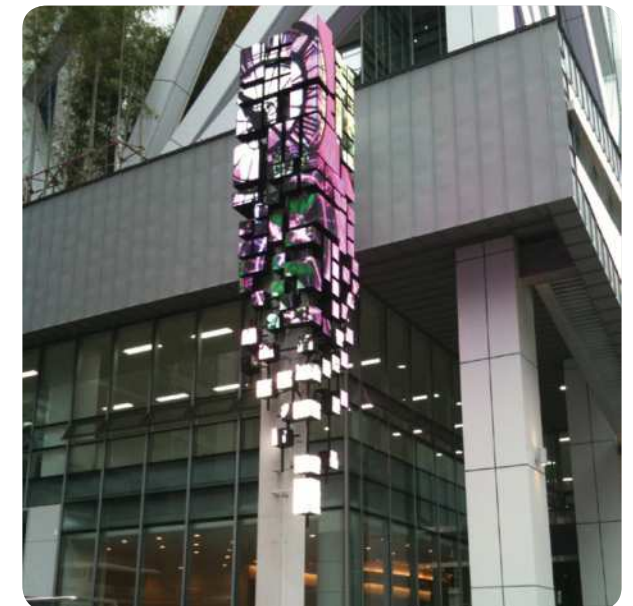
LED Screen과 ART가 만나면서 직사각형의 스크린 형태를 벗어나 다양한 예술적 형태로 설치되어 지역의 상징적 조형예술 작품으로 각광을 받고 있습니다.

LED Media Art is combination between LED Screen and ART. Its set-up shape is not just rectangle but also various artistic shapes.

LED Media Art comes into the light as an regional symbolic artwork.



싱가폴 창이공항(2013)



미디어큐브(서울/2010) 12.5mm Pitch



KT올레캠퍼스(서울/2010) (W)7.7×(H)5.2m / 8mm Pitch



화천물레방아 공원 (2009) (W)3×(H)18m / 6mm pitch



미디어첨성대(서울/2011) (H)5.2m / 12.5mm Pitch

5. 이벤트/이동형 / Event Mobile Screen

EVENT등의 행사장에서 배경화면, 실황 영상을 표출하는 전광판을 구성하는 반제품으로서 주로 렌탈용으로 활용되고 있으며 이동 운반, 설치, 해체가 용이하도록 설계 제작된 전광판 구성용 LED Screen 타일 입니다.

Mobile Screen shows background image or real-time image at event hall. Normally, this LED is for rental, which means transportation, installation, and separation are easy.



VSU-06



VSU-09



VSU-18

• 제품규격 / Product Specifications

	VSU-06	VSU-09	VSU-18
Unit Size	768×384mm	900×600mm	1,200×600mm
Pitch	6 mm	9,375 mm	18,75 mm
Resolution	8,192 pixel	6,144 pixel	2,048 pixel
Type	Board type	Curved board	Transparent
Date Connection	Optic signal	Optic signal	Optic signal



6. 경관조명 / LED Architectural Lighting

빛샘전자는 LED조명기술에 LED영상제어기술을 융합하여 건물의 실내외 경관을 심미적인 빛으로 연출하여 예술적 차원으로 승화시키는 차원높은 경관조명을 제공합니다.

LED Architectural Lighting is fusion technology between LED lighting technology and LED Screen operation technology. This technology makes in/outdoor view artistic level providing esthetic light.



기업체 사옥(서울)



백화점 실내(JAPAN)



롯데백화점(서울)



제주 리젠트 호텔(제주)



제주 리젠트 호텔(제주)