

## 13.5mm DIAMETER LED HOLDER

### 1. SCOPE (적용범위)

This Product Specification covers the 13.5mm DIAMETER LED HOLDER  
(이 Spec은 13.5mm DIAMETER LED HOLDER 에 대하여 규정한다)

### 2. PRODUCT DESCRIPTION (제품구성)

#### 2.1 PRODUCT NAME AND SERIES NUMBER (제품명 & 제품번호)

Product Name (제품명칭)	Parts Number (제품번호)
13.5mm Diameter LED Holder Assembly (Tray Packing)	104228-0210

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS(치수, 재질, 도금 및 마킹)

See the appropriate Sales Drawings for information on dimensions, materials, platings, and markings. (관련도면 참조)

### 3. APPLICABLE DOCUMENTS AND SPECIFICATIONS

Sales drawing : SD-104228-001  
Packing specification : PK-104228-001

### 4. RATINGS (정격)

ITEM (항목)		STANDARD (규격)	
Rated Voltage (Max.) LED Holder 자체 최대허용전압 (According to UL Test Condition for only LED Holder)		250V [ AC (rms 실효치)/DC]	
Rated Current Ampere (Max.) 최대허용전류 (According to UL Test Condition)	Solid Wire [refer to 8] [8항 참조]	AWG#22(0.3mm <sup>2</sup> )	3.0A Max.
		AWG#20(0.5mm <sup>2</sup> )	
	Strand Wire [refer to 8] [8항 참조]	AWG#18(0.8mm <sup>2</sup> )	3.0A Max.
		AWG#22 (0.45mm <sup>2</sup> )	
Set real using Rated Voltage (Max.) Set 실제사용 최대 허용전압 (According to KS C IEC 60598)		AC50V [AC (rms 실효치)/DC]	
Ambient Temp. Range (Operating and Non-operating) 사용온도 범위		-40°C ~ + 105°C Include Terminal Temperature Rise 통전에 의한 온도상승 포함. (By UL Conditions)	

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## 5. PERFORMANCE(성능)

ITEM 항 목	TEST CONDITION 시험 조건	REQUIREMENT 규 격
Examination of Product Resistance 제품 검사	Visual inspection 육안검사 실시 No physical damage 물리적 손상이 없을 것	Meets requirements of product drawing. 도면의 요구사항을 충족 할 것

### 5-1. ELECTRICAL REQUIREMENTS(전기적 특성)

ITEM 항 목	TEST CONDITION 시험 조건	REQUIREMENT 규 격
1 <b>Contact Resistance</b> 접촉 저항	Mate LED Holder & Wire : apply a maximum voltage of <b>20 mV</b> and a current of <b>100mA</b> . Wire resistance shall be removed from the measured value.  LED Holder에 Wire를 결합하여, <b>20mV</b> 이하의 전압, <b>100mA</b> 이하의 전류를 인가한다. 저항 측정 값에서 전선 저항치는 제외한다  (EIA 364-23)	<b>30 milliohms</b> <b>MAXIMUM</b>
2 <b>Dielectric Withstanding Voltage</b> 내 전압	Mate LED Holder & Wire : apply a voltage of <b>1,500 VAC</b> for 1 minute between adjacent terminals and between terminals to ground. (Without Heat sink)  LED Holder에 Wire를 결합하여, 인접단자 간 그리고 단자와 그라운드간에 <b>AC1,500V</b> 를 1분간 인가한다. (Heat sink가 없는 LED Holder자체 Test) (EIA 364-20)	No breakdown 이상 없을 것  current leakage < <b>0.5 mA</b> 누설전류 < <b>0.5 mA</b>
3 <b>Insulation Resistance</b> 절연 저항	Mate LED Holder & Wire : apply a voltage of <b>500 VDC</b> between adjacent terminals and between terminals to ground.  LED Holder에 Wire를 결합하여, 인접단자 간 그리고 단자와 그라운드간에 <b>DC500V</b> 를 인가한다  (EIA 364-21)	<b>500 Mega-ohms</b> <b>MINIMUM</b>
4 <b>Temperature Rise</b> 온도 상승	Mate LED Holder & Wire : measure the temperature rise at the rated current. (by UL Test Condition)  LED Holder에 Wire를 결합하여, 정격 전류를 인가하여 온도 상승을 측정한다. (UL Test 조건)  (EIA 364-70)	<b>+30°C</b> <b>MAXIMUM</b>

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## 5-2. MECHANICAL REQUIREMENTS(기계적 특성)

ITEM 항 목		TEST CONDITION 시험 조건	REQUIREMENT 규 격
5	Wire Insertion /Retention Forces Wire 삽입력 및 받거력	<p>Insert Wire into the LED Holder and withdraw the wire it at a rate of <b>25 ± 6</b> mm per minute [When wire insertion condition : refer to 10]</p> <p>LED Holder에 Wire를 각각 25 ± 6 mm/분의 속도로 삽/받거를 실시한다. [와이어 삽입 조건 10항 참조]</p> <p>(EIA 364-13)</p>	<p>Initial (초기) Wire Insertion force (Wire삽입력) : 10.0 N MAX.</p> <p>Wire Retention force (Wire 인발력). - AWG#22~AWG#18 : 20N MIN.</p>
6	Vibration 내진동성	<p>Mate LED Holder &amp; Wire and subject to the following vibration conditions: Vibration Frequency : 20 -500Hz , 3.10G Peak Duration : 15 minutes in each X.Y.Z axes</p> <p>LED Holder와 Wire를 결합하여 아래 진동상태를 가한다. 진동수 : 20 -500Hz , 3.10G Peak 진동시간 : X.Y.Z축 각 15분</p> <p>(EIA 364-28)</p>	<p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b></p> <p>Discontinuity(순간단락) &lt; 1 microsecond</p>
7	Shock (Mechanical) 내충격성	<p>Mate LED Holder &amp; Wire and shock at <b>30 G's</b> with ½ sine wave (<b>11 milliseconds</b>) shocks in the ±X,±Y,±Z axes (<b>18 shocks total</b>).</p> <p>LED Holder 와 Wire를 결합하여 반정현파 <b>30G (490ms<sup>2</sup>)</b>의 충격을 ±X,±Y,±Z축 방향에 <b>3회</b> 가한다. (총 <b>18회</b>)</p> <p>(EIA 364-27)</p>	<p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b></p> <p>Discontinuity(순간단락) &lt; 1 microsecon</p>
8	Thermal Aging 내열성	<p>Mate LED Holder &amp; Wire : expose to: <b>648 hours at 105 ± 2°C</b></p> <p>LED Holder 와 Wire를 결합하여 주위온도 105 ± 2°C에서 648시간 방치 후 꺼내어 측정한다.</p> <p>(EIA 364-17)</p>	<p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b></p>
9	Cold Resistance 내한성	<p>Mate LED Holder &amp; Wire: Duration: <b>500 hours</b>; Temperature: <b>-40 ± 3°C</b></p> <p>LED Holder 와 Wire를 결합하여 주위온도 -40 ± 3°C에서 500시간 방치 후 꺼내어 측정한다.</p> <p>(EIA 364-59)</p>	<p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b></p>

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### 5-3. ENVIRONMENTAL REQUIREMENTS(환경적 특성)

ITEM 항 목		TEST CONDITION 시험 조건	REQUIREMENT 규 격								
10	<b>Temperature Cycling (Thermal)</b> 열 충격	Mate LED Holder & Wire : expose to <b>25</b> cycles of: LED Holder 에 Wire를 결합하여 아래 상태에서 500 cycles 방치. <table border="0"> <tr> <td><u>Temperature °C</u></td> <td><u>Duration (Minutes)</u></td> </tr> <tr> <td>온도</td> <td>시간 (분)</td> </tr> <tr> <td><b>-40 +0/-3</b></td> <td><b>30</b></td> </tr> <tr> <td><b>+105 +3/-0</b></td> <td><b>30</b></td> </tr> </table> (EIA 364-32)	<u>Temperature °C</u>	<u>Duration (Minutes)</u>	온도	시간 (분)	<b>-40 +0/-3</b>	<b>30</b>	<b>+105 +3/-0</b>	<b>30</b>	No Damage 이상 없을 것  Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b>
<u>Temperature °C</u>	<u>Duration (Minutes)</u>										
온도	시간 (분)										
<b>-40 +0/-3</b>	<b>30</b>										
<b>+105 +3/-0</b>	<b>30</b>										
11	<b>Humidity /temperature cycling</b> 온.습도 Cycle	Mate LED Holder & Wire : 25~65°C, 50~80%RH, 0.5hour ramp, 1.0hour dwell, repeat 10 cycles . Wire가 결합된 LED Holder를 25에서 65°C 사이의 온도에서 50%에서80% RH를 10Cycle을 반복 한다 (EIA 364-31)	No Damage 이상 없을 것  Contact Resistance (접촉저항) <b>40 milliohms MAXIMUM</b>								
12	<b>Corrosive Atmosphere: Sulfur Dioxide Gas (SO<sub>2</sub>)</b> 아황산 가스	96 hours exposure to 25± 2 ppm SO <sub>2</sub> gas at 40 ± 2°C ,80 ± 5%  주위온도 40 ± 2°C, 습도80 ±5%에서 25± 2ppm의 아황산가스에 96시간 방치한다. (JISC 0092)	No Damage 이상 없을 것  Contact Resistance (접촉저항) <b>30 milliohms MAXIMUM</b>								

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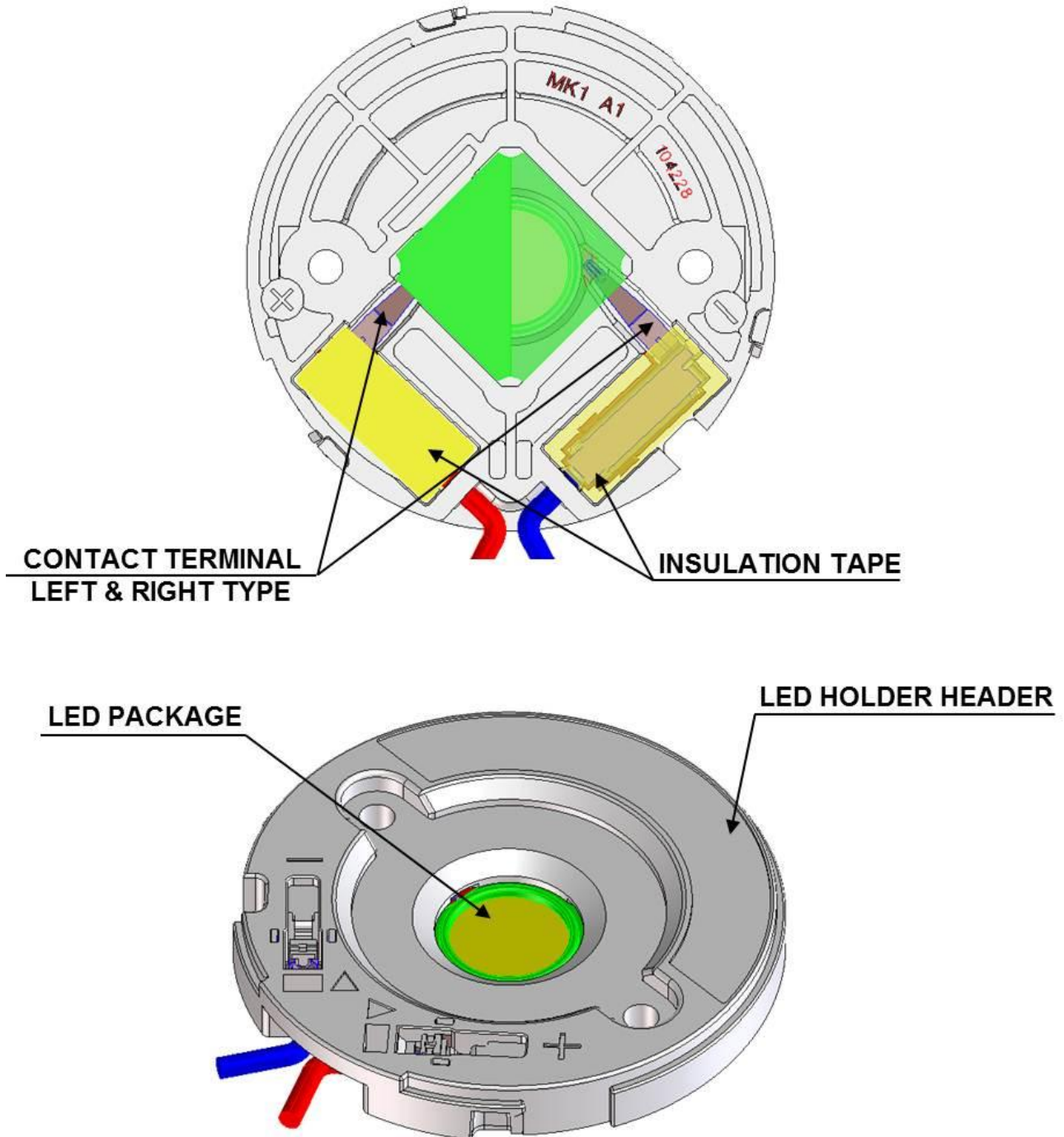
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## 6. PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.  
See Packaging drawing PK-104228-001 for more information.

## 7. LED HOLDER MATED CONDITION WITH LED PACKAGE & INSULATION TAPE

[ LED Package와 절연 Tape가 결합 된 LED Holder ]



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## 8. APPLICABLE WIRES [적용 WIRE]

Wire Range AWG No.	Number of Conductors / Diameter of a conductors (Cross-sectional area of conductors / mm <sup>2</sup> )	Insulation Diameter (mm)	Conductor Type
#22	1 / 0.64(0.3mm <sup>2</sup> )	1.48	Solid
#20	1 / 0.81(0.5mm <sup>2</sup> )	1.65	
#18	1 / 1.02(0.8mm <sup>2</sup> )	1.86	
#22	17/0.76 (Reference ) After soldering : Ø 0.9mm Max.	1.60	Strand
#20	21/0.95 (Reference ) After soldering : Ø 1.1mm Max	1.78	

■ Regarding strand conductor wire, strictly recommend that Pre bond wire type which is dipping into soldering after twisting [ Strand Wire 심선 관련, Wire Twisting 후 Soldering을 하는 Pre bond 형식을 추천함.]

## 9. WIRE STRIP LENGTH [Wire 탈피 길이]



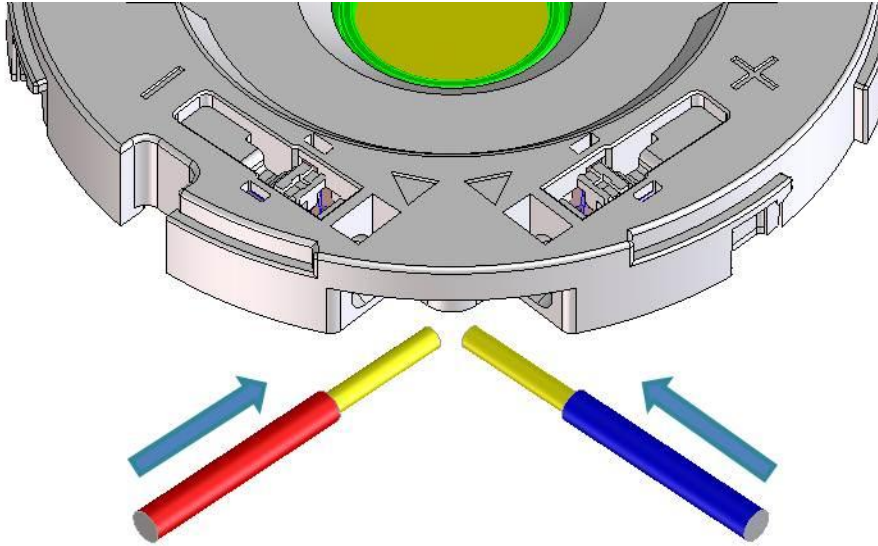
[ Conductor : Bare Copper /Strand wire]

Acceptable	Non-Acceptable
<p>Strand Wire      Solid Wire</p>	<p>The insulation, conductor not be damaged in any way.</p>

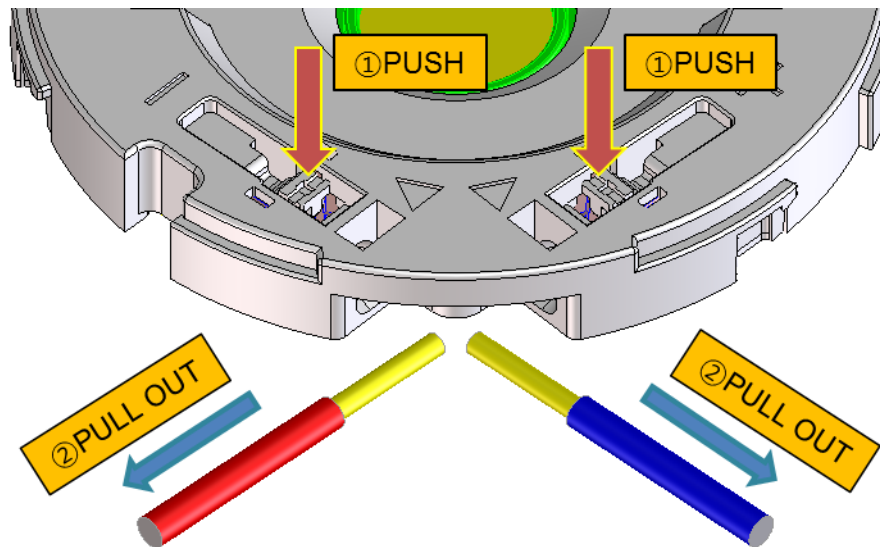
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## 10. WIRE INSERTION [Wire 삽입]



## 11. The Method of Wire Separation from LED Holder [LED Holder로부터 Wire 분리 방법]



- 1) Push the Lever slightly with fingers or tools to separate the wire.  
[Lever 를 손가락이나 Tool 로 가볍게 눌러 Wire 를 분리한다.]
- 2) Pull the wire after push the Lever had better than Pull the wire and push the lever at the same time.  
[동시에 Lever 을 누르면서 Wire 를 당기면서 Wire 을 분리 하는 것보다 Lever 을 누른 후 Wire 를 당겨 분리 한다.]
- 3) The tip for the easy way to separate the wire is that push the wire forward slightly then push the lever.  
[Wire 를 쉽게 빼는 방법은 앞으로 Wire 를 살짝 밀고 Push Lever 을 누르면 더 용이 하게 Wire 를 분리]

※ Use the new conductor cutting off the wire if it used more than 3 times [ for the wire wearing]  
[3 회이상 사용한 Wire 는 절단 후 새로운 심선을 탈피 하여 사용 할 것 [Wire 마모 현상]

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## 12. Test Sequence (테스트 순서)

Test Items	Test Group											
	1	2	3	4	5	6	7	8	9	10	11	12
	Test Sequence(a)											
Examination of Product	1,12	1,10	1,5	1,5	1,3	1,5						
Contact Resistance (Low Level)	3,10	2,9	2,4	2,4		2,4						
Insulation Resistance	4,8	3,7										
Dielectric Withstanding Voltage	5,9	4,8										
Vibration	6											
Mechanical Shock	7											
Wire insertion force	2											
Wire Retention force	11											
Temperature Cycling		5										
Thermal Aging			3									
Humidity/Temperature cycling		6										
SO2 gas				3								
Temperature Rise						3						

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