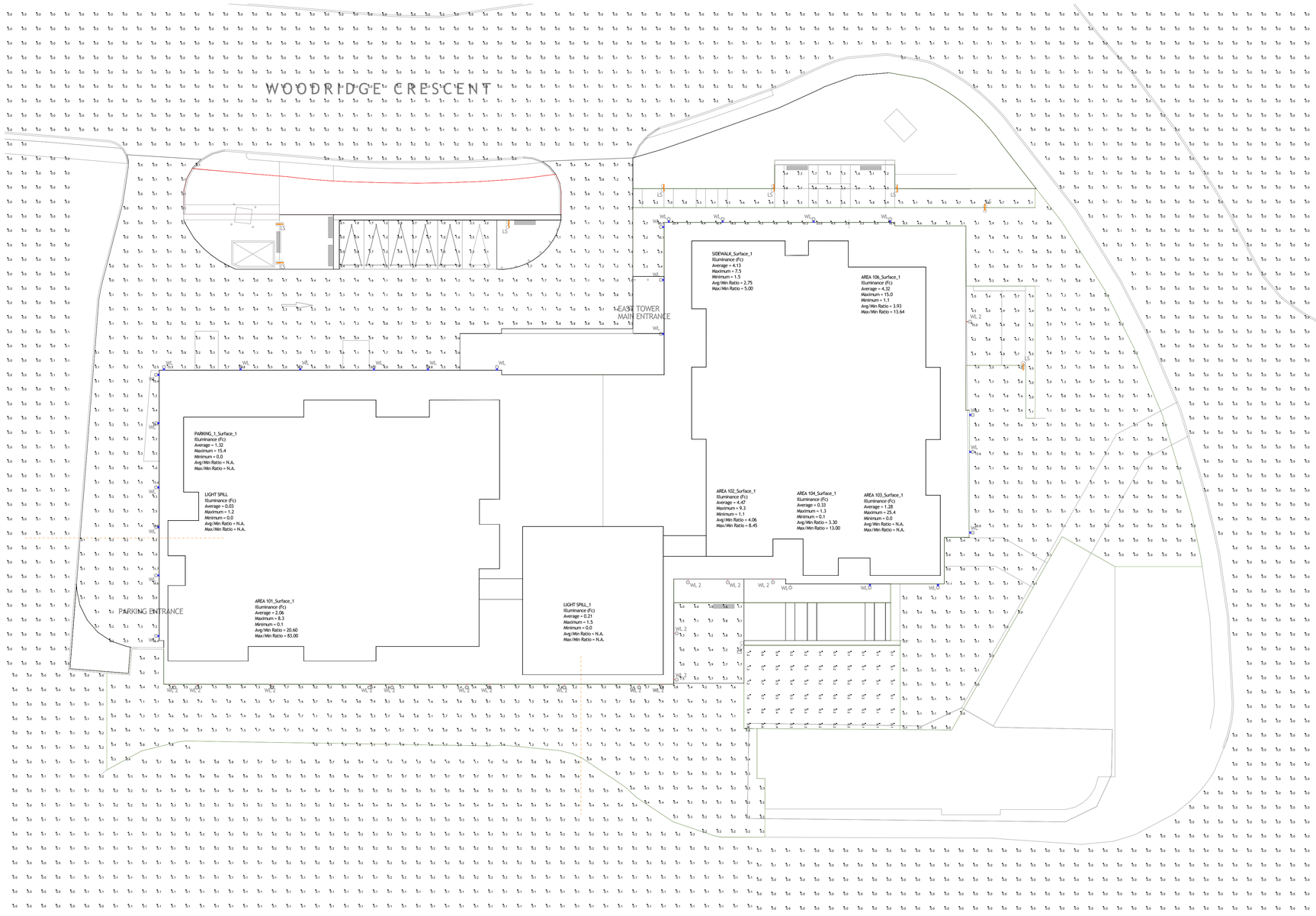

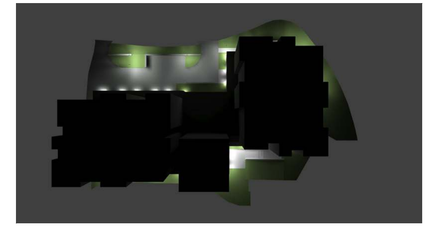

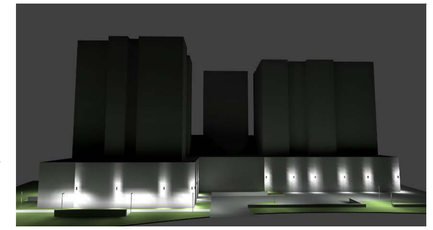

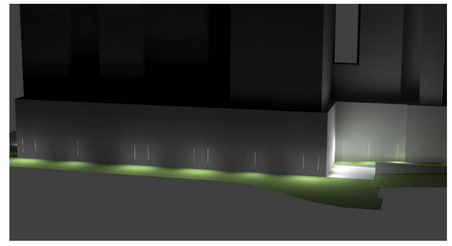

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Lumens	Lum. Watts
	128	WL2	SINGLE	0.900	K-HE-40-1440-HD-24V_IES%2002	504	4.2576
	8	LS	SINGLE	0.900	LUMENPULSE - BLDS-SD-120_277-CSL-M80-35K-CRI 80-4	5530	80
	24	WL	SINGLE	0.900	SPECTRUM - C06xxSQUDXT-13L-XH-GL-13L-XH-xxK-EX-TCY-GLMW (Up_Down)	1923	36.8

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
AREA 101_Surface_1	Illuminance	Fc	2.06	8.3	0.1	20.60	83.00
AREA 102_Surface_1	Illuminance	Fc	4.47	9.3	1.1	4.06	8.45
AREA 103_Surface_1	Illuminance	Fc	1.28	25.4	0.0	N.A.	N.A.
AREA 104_Surface_1	Illuminance	Fc	0.33	1.3	0.1	3.30	13.00
AREA 106_Surface_1	Illuminance	Fc	4.32	15.0	1.1	3.93	13.64
LIGHT SPILL	Illuminance	Fc	0.03	1.2	0.0	N.A.	N.A.
LIGHT SPILL_1	Illuminance	Fc	0.21	1.5	0.0	N.A.	N.A.
PARKING_1_Surface_1	Illuminance	Fc	1.32	15.4	0.0	N.A.	N.A.
SIDEWALK_Surface_1	Illuminance	Fc	4.13	7.5	1.5	2.75	5.00

MVP LIGHTING
Stewart Impey | Principal
o: 613-800-9909 ext #3
c: 613-282-0997

Drawn By:
Checked By:
Date:2021-04-27
Scale:

BAYSHORE

MVPBHR10427A

NEW OFFICE/WAREHOUSE

2780 LANCASTER ROAD, OTTAWA, ON

ELECTRICAL

ELECTRICAL SPECIFICATIONS:

1. COMPLY WITH THE REQUIREMENTS OF THE INSTRUCTIONS TO BIDDERS, THE GENERAL CONDITIONS OF THE CONTRACT AND THE SUPPLEMENTARY GENERAL CONDITIONS INCLUDED IN THE TENDER DOCUMENTS.

2. CONTRACTOR SHALL FOLLOW THE BIDDING DOCUMENT PROJECT SCHEDULE. UPON AWARD, CONTRACTOR SHALL SUBMIT WORK SCHEDULE AND EQUIPMENT DELIVERY SCHEDULE TO PROJECT MANAGER & ENGINEER FOR REVIEW AND APPROVAL.

3. [VERIFY FOR EACH PROJECT] ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE PROJECT MANAGER.

4. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND BY-LAWS AND BE INSTALLED BY LICENSED WORKMEN SKILLED IN THAT PARTICULAR PORTION OF THE CONTRACT.

5. ANY CONFLICT OR QUESTIONS THAT ARISE IN RELATION TO THE DESIGN DOCUMENTS DURING THE TENDER PERIOD SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IF THIS PROCEDURE IS NOT FOLLOWED, REROUTING AND MODIFICATION AS REQUIRED TO COMPLETE THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

6. GIVE ALL NOTICES, OBTAIN ALL NECESSARY PERMITS AND PAY ALL APPLICABLE FEES AND INSPECTION COSTS AND DELIVER TO ENGINEER ALL NECESSARY FINAL CERTIFICATES OF INSPECTION AND APPROVAL WHICH MAY BE REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER WORK, AS EVIDENCE THAT WORK INSTALLED CONFORMS WITH LAWS AND REGULATIONS OF ALL GOVERNING AUTHORITIES, BEFORE FINAL CERTIFICATE OF PAYMENT MAY BE CONSIDERED DUE. FURNISH COPIES OF ALL DRAWINGS AS MAY BE REQUIRED TO COMPLY WITH ABOVE. NOTIFY INSPECTION AUTHORITIES IN SUFFICIENT TIME FOR THEM TO INSPECT WORK.

7. EXAMINE SITE AND LOCAL CONDITIONS AFFECTING WORK UNDER THIS DIVISION TO ENSURE THAT WORK UNDER THIS DIVISION CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO DRAWINGS. NO ALLOWANCE WILL BE MADE LATER FOR ANY EXPENSE INCURRED THROUGH FAILURE TO MAKE THIS EXAMINATION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH, EXISTING CONDITIONS.

8. GUARANTEE ALL WORK FOR 12 MONTHS FROM THE DATE OF ACCEPTANCE.

9. ENSURE THAT ALL PRECAUTIONS ARE TAKEN TO PROTECT ALL PERSONNEL FROM HAZARDS DURING THE WORK. PROTECT ALL EQUIPMENT FROM DAMAGE FROM ANY CAUSE INCLUDING WEATHER.

10. USE ONLY NEW, FULLY CSA AND ULC APPROVED FOR USE AS INSTALLED MATERIALS, AND TO MEET THIS SPECIFICATION IN ALL RESPECTS.

11. INSPECT ALL EQUIPMENT UPON DELIVERY AND NOTIFY PROJECT ENGINEER OF ANY DAMAGE OR DEFICIENCIES.

12. COORDINATE MATERIAL STORAGE WITH THE SITE SUPERINTENDENT AND OTHER TRADES.

13. CONTRACTOR TO NOTIFY PROJECT MANAGER IN WRITING MINIMUM OF THREE (3) WORKING DAYS BEFORE SCHEDULED SUBSTANTIAL COMPLETION TO ARRANGE INTERIM INSPECTION AND EQUIPMENT COMMISSIONING. NOTIFY PROJECT MANAGER IN WRITING OF ANY CHANGES IN SCHEDULE.

14. DURING THE COURSE OF CONSTRUCTION AND UPON COMPLETION, REMOVE ALL RUBBISH AND WASTE RESULTING FROM THIS WORK, TO THE SATISFACTION OF THE ENGINEER. CHECK, CLEAN AND REPAINT WHERE NECESSARY, ALL ELECTRICAL EQUIPMENT AND LEAVE IN A FIRST CLASS CONDITION.

15. THE WORK AS COVERED BY THESE SPECIFICATIONS AND PLANS IS INTENDED TO COMPLY EXACTLY WITH THE LATEST RULES AND REGULATIONS OF THE INSPECTION AUTHORITIES, AND THESE RULES ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, ANY RULING BY THE INSPECTION AUTHORITY SHALL BE FINAL. ALL CHANGES AND ALTERATIONS TO THE CONTRACTOR'S WORK REQUIRED BY AN AUTHORIZED INSPECTOR OR ANY AUTHORITY HAVING JURISDICTION DUE TO THE CONTRACTORS WORK SHALL BE CARRIED OUT AT NO EXPENSE TO THE OWNER.

16. MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF EQUIPMENT SPECIFIED HEREIN SHALL BE CONSIDERED PART OF THIS SPECIFICATION.

17. PROVIDE ELECTRONIC COPY (PDF FORMAT) OF SHOP DRAWINGS FOR ALL SYSTEMS AND EQUIPMENT FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING INFORMATION:
a. FLOOR ANCHORING METHOD AND FOUNDATION TEMPLATE.
b. DIMENSIONED CABLE ENTRY AND EXIT LOCATIONS.
c. DIMENSIONED POSITION AND SIZE OF BUS.
d. OVERALL WEIGHT, LENGTH, HEIGHT AND DEPTH, GAUGE AND TYPE OF MATERIALS.
e. DIMENSIONED LAYOUT OF INTERNAL AND FRONT PANEL.
f. MOUNTED COMPONENTS.
g. ELECTRICAL CHARACTERISTICS AND PERFORMANCE DATA.
h. WIRING DIAGRAMS.
i. NAME OF CONTRACTOR C/W SIGNED REVIEW STAMP.
j. NAME OF COMPONENT, SERVICE OR SYSTEM.
k. NUMBER OF PAGES FOR EACH TYPED PAGE (IE. PG 1 OF 5).

18. SUBMIT ELECTRONIC (PDF FORMAT) COPY OF OPERATION & MAINTENANCE (O&M) MANUALS FOR APPROVAL. PROVIDE A COPY OF THE FOLLOWING IN THE MANUALS:
a. LETTER OF WARRANTY
b. ELECTRICAL SAFETY AUTHORITY (ESA) INSPECTION CERTIFICATE.
c. CITY INSPECTION REPORT
d. UPDATED PANEL SCHEDULES, C/W ELECTRICAL COMPANY'S NAME, DATED AND CIRCUIT BREAKER SIZES.
e. SHOP DRAWINGS
f. AS BUILTS
g. LIST OF SUPPLIERS C/W ADDRESS AND PHONE NUMBERS.
h. SEISMIC REVIEW LETTER.

19. SUPPLY ALL NECESSARY TOOLS, EQUIPMENT AND PERSONNEL AND PROVIDE DEMONSTRATION AND TRAINING TO OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE.

20. AFTER AWARD OF CONTRACT, SUBMIT A DETAILED COST BREAKDOWN INDICATING MATERIAL AND LABOUR COSTS FOR EACH PORTION OF THE WORK, INCLUDING DEMOLITION, LIGHTING, POWER DISTRIBUTION, COMMUNICATIONS, FIRE ALARM, ETC. TO BE APPROVED BY THE ENGINEER.

21. EXISTING ELECTRICAL SYSTEMS HAVE BEEN ONLY PARTIALLY INDICATED. REGARD INFORMATION RELATED TO EXISTING INSTALLATION AS A GUIDE ONLY. DETERMINE STATUS, QUANTITIES AND LOCATION OF EQUIPMENT AND SYSTEMS, ON SITE, PRIOR TO COMMENCEMENT OF REMOVAL AND/OR EXTENSION OF SAME.

22. THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION.

23. THESE ELECTRICAL DRAWINGS AND SPECIFICATIONS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

24. THE WORD "PROVIDE" SHALL DENOTE "SUPPLY, INSTALL, CONNECT AND TEST".

25. LABELING:
a. FOR ALL NEW, RELOCATED AND EXISTING-TO-REMAIN ELECTRICAL DEVICES WITHIN THE CONTRACT AREA, PROVIDE CLEAR "BROTHER P-TOUCH" LABELS INDICATING CIRCUIT AND PANEL AT ALL EQUIPMENT, DEVICES, RECEPTACLES AND JUNCTION BOXES.
b. TRACE EXISTING CIRCUITS AND UPDATE PANEL SCHEDULES.

28. CHECK WITH BUILDING MANAGEMENT PRIOR TO CORE DRILLING AND CUTTING OF FLOOR SLAB, REGARDING BUILDING REQUIREMENTS AND POLICIES. PRIOR TO SLAB CUTTING OR CORING, FIRST SCAN THE SLAB AND COORDINATE DRILLING TO MINIMIZE CUTTING OF THE REINFORCING STEEL. FIRE STOP ALL NEW FIRE RATED PENETRATIONS. THE CONTRACTOR IS TO INCLUDE IN TENDER PRICE ALL WORK ASSOCIATED WITH CORE DRILLING AFTER NORMAL WORKING HOURS. OBTAIN WRITTEN VERIFICATION OF THE LOCATIONS FROM THE ARCHITECT AND/OR INTERIOR DESIGNER PRIOR TO DRILLING. CUTTING TORCHES SHALL NOT BE USED FOR MAKING HOLES. PATCH ALL HOLES THROUGH SLAB WITH FIRE-STOP CAULKING (ULC LISTED). PATCHED SURFACES ARE TO BE PRIME FINISHED, READY FOR FINAL COVERING BY OTHERS.

29. SEISMIC RESTRAINT SYSTEM (SRS):
a. GENERAL:
a.a. PROVIDE DESIGN, SUPPLY AND INSTALLATION OF COMPLETE SRS FOR ALL SYSTEMS, EQUIPMENT SPECIFIED FOR INSTALLATION ON THIS PROJECT AS PER ONTARIO BUILDING CODE (2012) [NATIONAL BUILDING CODE 2010], CSA S832-06(R.2011).
a.b. DESIGN TO BE BY PROFESSIONAL ENGINEER SPECIALIZING IN DESIGN OF SRS AND REGISTERED IN PROVINCE OF ONTARIO. INCLUDE ALL COSTS ASSOCIATED WITH THIS WORK AS IT RELATES TO DIVISION [16] [26] [27] [28] INSTALLATIONS. SUBMIT DESIGN SKETCHES C/W PROFESSIONAL STAMP PRIOR TO START OF INSTALLATIONS, C/W INSTALLATION REQUIREMENTS.
a.c. ACCEPTABLE MATERIALS: KORFUND-SAMPSON, MASON INDUSTRIES, TELCOUSTICS, VIBRA-SONIC CONTROL, VIBRON.
a.d. SUBMITTALS TO INCLUDE FULL DETAILS OF DESIGN CRITERIA.
a.e. SUBMIT ADDITIONAL COPY OF SHOP DRAWINGS AND PRODUCT DATA TO STRUCTURAL ENGINEER FOR REVIEW OF CONNECTION POINTS TO BUILDING STRUCTURE.
a.f. INSTALL VIBRATION ISOLATION EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ADJUST MOUNTINGS TO LEVEL EQUIPMENT. ENSURE PIPE, DUCT AND ELECTRICAL CONNECTIONS TO ISOLATED EQUIPMENT DO NOT REDUCE SYSTEM FLEXIBILITY. ENSURE THAT PIPE, CONDUIT AND DUCT PASSING THROUGH WALLS AND FLOORS DO NOT TRANSMIT VIBRATIONS.

30. ANCHORING METHODS:
a. ELECTRICAL EQUIPMENT, FIXTURES, CONDUIT AND CABLING IS TO BE SECURELY ANCHORED OR FASTENED TO THE BUILDING STRUCTURE USING DRILLED HOLE WEDGE ANCHORS FOR CONCRETE STRUCTURES OR STEEL CLAMPS FOR STEEL STRUCTURES.
a.a. AIR, FUEL OR POWDER ACTUATED DEVICES OR ANY OTHER EQUIVALENT TYPE OF FASTENING DEVICES ARE NOT TO BE USED.
a.b. WHERE ANCHORING METHOD FORMS PART OF SEISMIC RESTRAINT REQUIREMENTS, ANCHORING METHODS TO COMPLY WITH SEISMIC RESTRAINT SYSTEMS (SRS).

b. LUMINAIRE SUPPORTS:
b.a. FOR RECESSED OR SURFACE MOUNTED LIGHTING IN SUSPENDED CEILING INSTALLATIONS, SUPPORT LUMINAIRES INDEPENDENTLY FROM CEILING, BY MEANS OF A MINIMUM OF TWO CHAIN HANGERS BOLTED TO DIAGONAL CORNERS OF THE FIXTURE BODY AND SECURED TO BUILDING STRUCTURE IN ACCORDANCE WITH ESA, AND SEISMIC RESTRAINT SYSTEMS (SRS).

32. GROUNDING AND BONDING:
a. PROVIDE GROUNDING AND BONDING OF ALL EQUIPMENT WITH APPROVED FITTINGS AND CONDUCTORS OF AMPLE CAPACITY IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE. ALL CONDUCTORS SHALL HAVE GREEN INSULATION OR BE COLOUR CODED WITH PERMANENTLY ATTACHED GREEN TAPE 21MM WIDE AT EACH END. PROVIDE INSULATED GROUND/BONDING CONDUCTOR IN EACH CONDUIT.

33. WIRING AND RACEWAYS:
a. ALL INTERIOR WIRING SHALL BE COPPER RW90 #12 CONDUCTOR MINIMUM.
b. ALL EXTERIOR UNDERGROUND WIRING TO BE COPPER RWU-90, MINUS 40 C RATED.
c. AC-90 (BX) MAY BE USED IN REMOVABLE CEILINGS AND METAL PARTITION WALLS, MAXIMUM LENGTH 3 METERS.
d. ALL NEW RACEWAYS SHALL BE THIN WALL ELECTRICAL METALLIC TUBING (EMT) RAIN-TIGHT COUPLING AND CONNECTORS UNLESS OTHERWISE INDICATED. CONDUITS TO BE COMPLETE WITH STEEL SET-SCREW COUPLINGS AND CONNECTORS AND NYLON BUSHING.
e. USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION TO MOTORS.
f. USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION TO EQUIPMENT IN DAMP, WET OR CORROSIVE LOCATIONS.
g. SURFACE CONDUIT TO RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.
h. ALL CONDUITS AND JUNCTION BOXES TO BE ANCHORED TO THE BUILDING STRUCTURE.
i. PROVIDE A POLYPROPYLENE PULL STRING IN ALL EMPTY CONDUITS.
j. EXISTING FEEDERS RELOCATED UNDER THIS CONTRACT TO BE REWIRED: SPLICE NEW WIRE TO EXISTING WIRE FROM JUNCTION BOX TO JUNCTION BOX, OR FROM JUNCTION BOX TO EXISTING EQUIPMENT.
k. CONTRACTOR MAY RE-USE EXISTING CONDUIT AND/OR GRID PULL BOXES WHERE SUITABLE FOR RE-USE WITH NEW OR RELOCATED RUNS.
l. REMOVE AND DISPOSE OF ANY REDUNDANT EXISTING WIRING.
m. 120V CIRCUITS OF LENGTH GREATER THAN 25m TO BE #10 AWG MINIMUM OR AS REQUIRED TO LIMIT VOLTAGE DROP WITHIN CODE SPECIFIED VALUE.
n. MINIMUM SIZE CONDUIT TO BE 21mm UNLESS SPECIFIED OTHERWISE.

35. LUMINAIRES:
a. PROVIDE LIGHTING FIXTURES, COMPLETE WITH LAMPS, AS INDICATED IN LIGHT FIXTURE SCHEDULE.
b. EACH LUMINAIRE CONNECTED TO A BRANCH CIRCUIT EXCEEDING 150V-TO-GROUND, WITH DOUBLE-ENDED LAMPS AND CONNECTED TO A BALLAST OR DRIVER, SHALL HAVE INTEGRAL DISCONNECTING MEANS AS PER THE CANADIAN ELECTRICAL CODE.

36. FIXTURE INSTALLATION: DO NOT MOUNT FIXTURES ABOVE PIPES, DUCTS OR EQUIPMENT. CHECK LAYOUTS OF WORK BY OTHER TRADES ON PROJECTS AND PLAN COOPERATIVELY WITH OTHERS TO AVOID CONFLICT. PROVIDE LONGER HANGERS TO CLEAR OBSTRUCTIONS, IN EVENT OF UNAVOIDABLY TIGHT LOCATIONS. PROVIDE CHAIN HANGERS FOR ALL FIXTURES IN T-BAR CEILINGS.

37. MOLDED CASE CIRCUIT BREAKERS:
a. BOLT-ON MOLDED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40 C AMBIENT.
b. COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS.
c. CIRCUIT BREAKERS WITH INTERCHANGEABLE TRIPS AS INDICATED.
d. MOLDED CASE CIRCUIT BREAKER TO OPERATE AUTOMATICALLY BY MEANS OF THERMAL AND MAGNETIC TRIPPING DEVICES TO PROVIDE INVERSE TIME CURRENT TRIPPING AND INSTANTANEOUS TRIPPING FOR SHORT CIRCUIT PROTECTION.

DEMOLITION NOTES:

1. UNLESS OTHERWISE NOTED, MATERIALS FOR REMOVAL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE TAKEN FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS.
2. DISCONNECT AND MAKE SAFE ALL SYSTEMS TO BE DEMOLISHED INCLUDING PANELS, FEEDERS, BRANCH CIRCUITS AND EQUIPMENT BY OTHER DIVISIONS. COORDINATE WITH OTHER DIVISIONS.
3. MAINTAIN EXISTING REMAINING CIRCUITS, SYSTEMS, ETC., WHICH PASS THROUGH AREA OF CONSTRUCTION AND IN CLOSE PROXIMITY. PROVIDE NECESSARY COMPONENTS TO MAINTAIN SYSTEMS. ENSURE COMPONENTS WILL BE CONCEALED WHEN CONSTRUCTION IS COMPLETE.
4. REINSTATE IMMEDIATELY ANY REMAINING EXISTING SYSTEMS IN-ADVERTENTLY INTERRUPTED DURING CONSTRUCTION.
5. THE DRAWINGS INDICATE KNOWN CONDITIONS AND MAY NOT INDICATE ALL DEMOLITION REQUIREMENTS. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO TENDER SUBMISSION AND VERIFY REQUIREMENTS AND INCLUDE ALL COSTS IN TENDER.
6. REMOVE REDUNDANT CONDUIT AND WIRING BACK TO SOURCE UNLESS OTHERWISE NOTED, AND MAKE SAFE.
7. DEVICES FROM DEMOLITION ARE NOT TO BE REUSED UNLESS NOTED OTHERWISE. NEW DEVICES SHALL BE SUPPLIED WHERE NECESSARY.
8. ALL FIRE ALARM DEVICES TO REMAIN IN OPERATION. PROTECT SMOKE DETECTORS FROM DUST EXPOSURE DURING CONSTRUCTION.
9. ENSURE FIRE ALARM SYSTEM IS OPERATIONAL AT THE END OF EACH SHIFT.
10. AFTER DEMOLITION WORK IS COMPLETE AND MINIMUM THREE (3) WORKING DAYS PRIOR TO PROCEEDING WITH NEW WORK, NOTIFY ENGINEER FOR INSPECTION.

GENERAL NOTES:

1. ELECTRICAL WORK TO BE DONE IN ACCORDANCE WITH THE ELECTRICAL SAFETY CODE OF ONTARIO, AND WITH NEW ARCHITECTURAL/INTERIOR DESIGNER'S LAYOUT (LOCATION/MOUNTING HEIGHTS). CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS, PAY ALL APPLICABLE FEES AND INSPECTION COSTS.
2. COORDINATE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCE.
3. ENSURE ELECTRICAL COMPONENTS (IE. WIRING, CONDUIT, ETC.) RELATING TO THE AREA OF WORK ARE INDEPENDENTLY SECURED TO COMPLY WITH CODE REQUIREMENTS. IT IS NOT ACCEPTABLE TO SECURE THE COMPONENTS TO DUCTWORK, DUCT WORK TO CONDUIT, OR ANY OTHER SYSTEMS.
4. ENSURE ALL EXISTING CEILING MOUNTED BOXES ARE CLOSED PRIOR TO COMPLETION OF PROJECT. PROVIDE LABELLED AND COLOUR CODED COVER PLATES (IE. PANEL NAME AND CIRCUIT NUMBER) AS REQUIRED.
5. MINIMUM THREE (3) WORKING DAYS PRIOR TO CLOSING CEILING, NOTIFY THE ENGINEER FOR CEILING INSPECTION.

LIGHTING NOTES:

1. CLEAN LAMPS, LENSES, INTERIOR AND VISIBLE SURFACES OF LUMINAIRES. REPLACE DEFECTIVE LAMPS, BALLAST AND DAMAGED LENSES.
2. LUMINAIRES IN CONSTRUCTION AREA ARE TO BE INDEPENDENTLY SUPPORTED, INCLUDING EXISTING TO REMAIN, RELOCATED AND NEW, TO COMPLY WITH CODE REQUIREMENTS.
3. ADD, RELOCATE AND CONNECT LIGHT FIXTURES TO SUIT INDICATED LAYOUT, EXTEND CONDUIT AND WIRING AS NECESSARY AND CONNECT LUMINAIRES TO EXISTING CIRCUITS. TURN OVER SURPLUS FIXTURES TO OWNER.
4. WHERE AIR SUPPLY TROFFER ARE BEING RELOCATED BY MECHANICAL CONTRACTOR TO EXISTING LIGHT FIXTURE, ELECTRICAL CONTRACTOR TO COORDINATE DISCONNECTION AND RECONNECTION AS REQUIRED.
5. MODIFY ALL AFFECTED (RELOCATED OR REWIRED) 347V LIGHT FIXTURES TO PROVIDE BALLAST DISCONNECTS AS PER OESC.
6. BRING TO THE ATTENTION OF THE ENGINEER ANY CONFLICTS OR REQUIRED CLARIFICATION.
7. FAILING TO COORDINATE, THE CONTRACTOR WILL MODIFY THE INSTALLATION AT HIS EXPENSE, IF REQUIRED.

COLOR CODING:

APPLICABLE TO NEW OR RELOCATED WORK UNLESS OTHERWISE NOTED.
1. TO CONFORM TO CLIENT'S BUILDING CODING SYSTEM.
2. COLOUR CODE CONDUITS AND BOXES.
3. CODE WITH PLASTIC TAPE OR PAINT WHERE CONDUITS ENTER WALLS, CEILING, OR FLOOR AND AT 15 METER INTERVALS.
4. COLOURS: 25mm WIDE PRIME COLOUR AND 20mm WIDE AUXILIARY COLOUR.

SERVICE	PRIME COLOUR	AUXILIARY COLOUR
UP TO 250V	BLUE	
UP TO 600V	YELLOW	

DRAWING LIST

SYMBOL	DESCRIPTION
E1	ELECTRICAL TITLESHEET
E2	ELECTRICAL SITE LIGHTING WORK

LIGHTING LEGEND

SYMBOL	DESCRIPTION
ⓔ	EXTERIOR POLE MOUNTED LIGHT FIXTURE – TYPE AS SHOWN
①	WALL MOUNTED LIGHT FIXTURE – TYPE AS SHOWN

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	CATALOG NUMBER	LAMPS PER FIXTURE				VOLT	MOUNTING	REMARKS
			QTY	TYPE	WATTS	COLOUR			
1	NEW LED ARCHITECTURAL EXTERIOR LINEAR	SPECTRUM LIGHTING INC	1	LED	–	3500K	120V	SURFACE	–
	–	C0618SQUDXT-13L-XN-GL-13L-XN-35K-EX-WL-TCY-GL-MW						–	–
2	NEW LED ARCHITECTURAL EXTERIOR WALL PACK	KLUS DESIGN	1	LED	–	3500K	120V	WALL	FIXTURE TO BE MOUNTED IN VERTICAL POSITION.
	–	K-HE-35-1440-HD-24V						–	C/W ALL REQUIRED LED DRIVERS
3	NEW LED ARCHITECTURAL EXTERIOR POLE FIXTURE	LUMENPULSE	1	LED	–	3500K	120V	POLE	–
	–	BLDS-SD-120-CSL-560-35K-CRI80-4-BK-DIM						–	–

NOTES:
1. COORDINATE AIMING OF FIXTURES WITH ARCHITECT AND CLIENT REPRESENTATIVE.

Client

DATE	REVISION	REF
2021-04-28	ISSUED FOR SITE PLAN APPROVAL	0

Goodkey Weedmark
Consulting Engineers

GOODKEY WEEDMARK & ASSOCIATES LIMITED
1688 Woodward Dr. 613 727-5111 Voice
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Project north
Nord du projet

Seal/Sceau

LICENSED PROFESSIONAL ENGINEER
J.W.MOFFAT
100120151
2021-04-28
PROVINCE OF ONTARIO

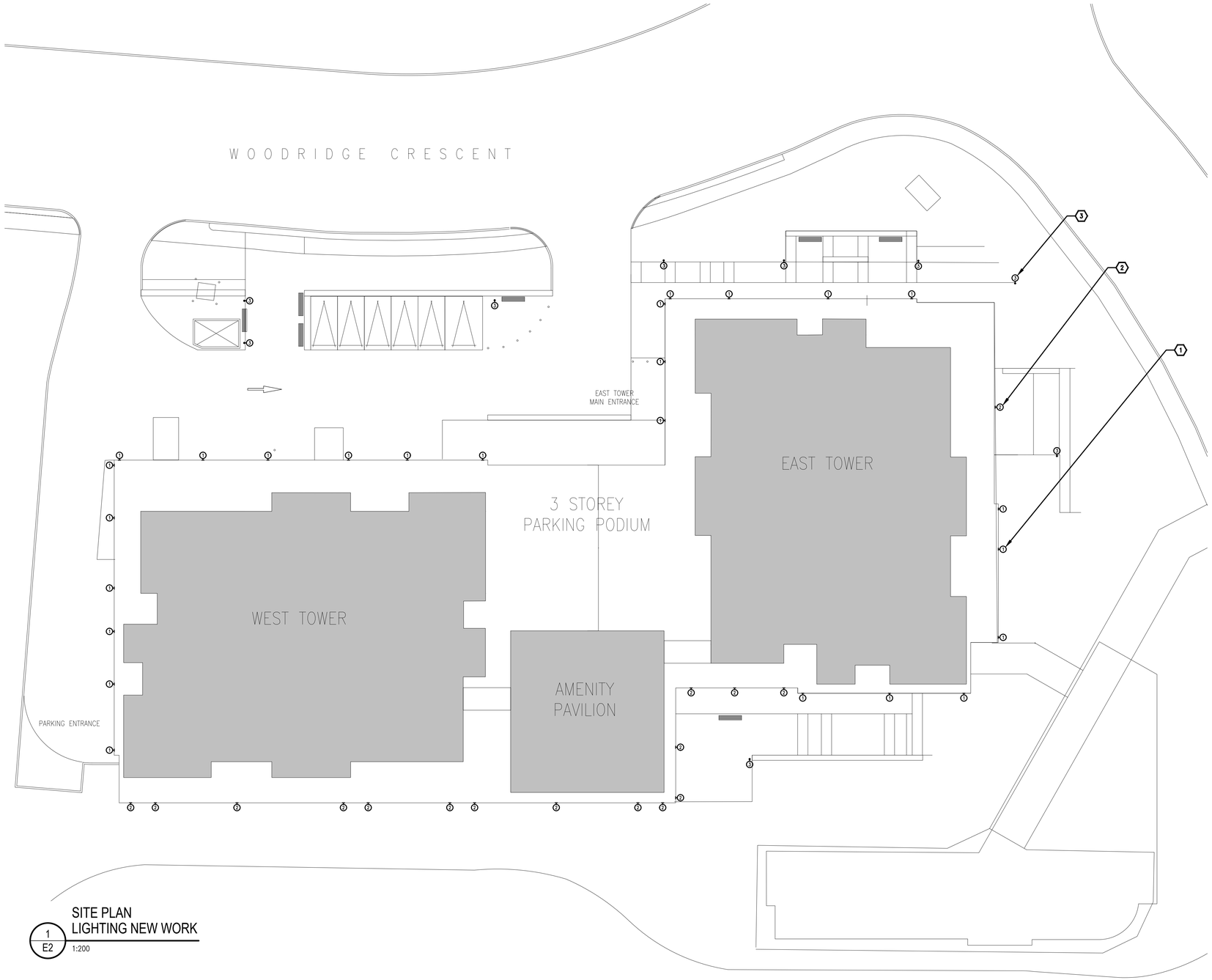
Project/Projet

100 BAYSHORE DR. - APARTMENT BUILDING

Drawing title/Titre du dessin

ELECTRICAL TITLESHEET

Scale / Échelle	AS NOTED	Project no./No. du projet	2020-502
Design by / Conçu par	J.MOFFAT	Drawing/Dessin	E1
Drawn by / Dessiné par	C.BEHAN		
Reviewed by / Examiné par	J.MOFFAT		OF 2
Date / Date	APRIL 2021	Revision no:	–
		Acad file/Fichier:	–



1
E2
SITE PLAN
LIGHTING NEW WORK
1:200

DRAWING NOTES

1. TYPICAL:
PROVIDE NEW TYPE '1' LIGHT FIXTURE C/W CONDUIT AND WIRE AND CONNECT TO NEW TIME CLOCK SYSTEM AND NEW EXTERIOR LIGHTING CIRCUIT. COORDINATE EXACT LOCATION, MOUNTING AND MOUNTING HEIGHT ON SITE WITH CLIENT REPRESENTATIVE AND ARCHITECT.

2. TYPICAL:
PROVIDE NEW TYPE '2' LIGHT FIXTURE C/W CONDUIT AND WIRE AND CONNECT TO NEW TIME CLOCK SYSTEM AND NEW EXTERIOR LIGHTING CIRCUIT. COORDINATE EXACT LOCATION, MOUNTING AND MOUNTING HEIGHT ON SITE WITH CLIENT REPRESENTATIVE AND ARCHITECT.

3. TYPICAL:
PROVIDE NEW TYPE '3' LIGHT FIXTURE C/W CONDUIT AND WIRE AND CONNECT TO NEW TIME CLOCK SYSTEM AND NEW EXTERIOR LIGHTING CIRCUIT. COORDINATE EXACT LOCATION, MOUNTING AND MOUNTING HEIGHT ON SITE WITH CLIENT REPRESENTATIVE AND ARCHITECT.

Client

2021-04-28	ISSUED FOR SITE PLAN APPROVAL	0
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Project north
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Seal/Sceau

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2021-04-28
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Project/Projet

100 BAYSHORE DR. - APARTMENT BUILDING

Drawing title/Titre du dessin

ELECTRICAL SITE LIGHTING WORK

Scale / Echelle	AS NOTED	Project no./No. du projet	2020-502
Design by / Conçu par	J.MOFFAT	Drawing/Dessin	E2
Drawn by / Dessiné par	C.BEHAN		
Reviewed by / Examiné par	J.MOFFAT		OF 2
Date / Date	APRIL 2021	Revision no:	—
		Acad file/Fichier:	—

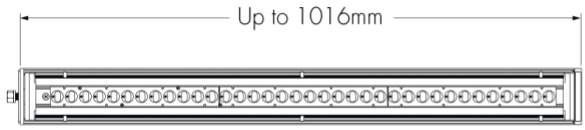
Specification Sheet

lumenblade
Small
BLDS

Project Name _____ **Qty** _____

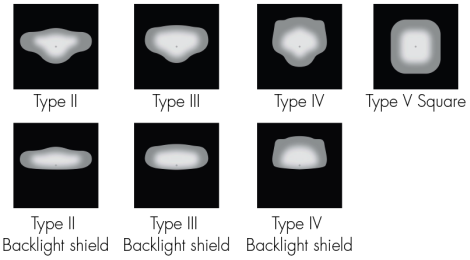
Type _____ **Catalog / Part Number** _____

Side and front views



Bottom view
L120 or L140 (3 boards) shown

Distributions



Colours and Colour Temperatures

Control

ON/OFF 0-10V

Motion detector options

Rating

IP66 (optical chamber)

Certifications

Description

The Lumenpulse Lumenblade Small is an outdoor LED luminaire that uses a rectilinear version of the Lumencentro light engine to create a continuous line of light. Its seen-but-not-seen, minimalist design is sustainable, blends with both contemporary and heritage architectures, provides a high level of security, and is sensitive to the natural environment. The Lumenblade Small is available in several lengths, a number of distributions and output options, and provides a stellar quality of light that brings the night to life.

Features

Mounting	Side mounting
Colour and Colour Temperature	2200K, 2700K, 3000K, 3500K, 4000K, 5700K
Distributions	Type II, Type III or Type IV (with or without backlight shield), Type 5 square
1.5G Vibration Rated	Meets 1.5G ANSI C136.31 - 2010 vibration standard for Roadway applications
Options	Corrosion-resistant coating for hostile environments, Surge protector, 5-pin receptacles with and without shorting cap, 7-pin receptacles with and without shorting cap, Motion detector
Pole Mounting Adaptor	Straight pole and Muffler pole adaptor (round and square pole): 102 mm, 127 mm and 152 mm Lumentech pole adaptor (square and round pole): 127 mm (round pole only) and 152 mm
Warranty	5-year limited warranty

Performance

Output (nominal lumens)	Minimum 4000lm (1 board) / Maximum 14000lm (3 boards)
Efficacy	Up to 95 lm/W (Type 5 square, 4000K, M80 lumen output)
Colour Rendering	3 SDCM for CRI 70+ and 2 SDCM for CRI 80+
Lumen Maintenance	TM-21 L95 57,000 hrs (reported, Ta 25 °C [77 °F]) L70 > 120,000 hrs (projected, Ta 25 °C [77 °F])

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info@lumenpulse.com **www.lumenpulse.com** **www.lumenpulse.com/products/1434**

Dark Sky	Dark sky compliant (2200K, 2700K and 3000K colour temperatures, BUG rating of U0)

Physical

Housing Material	Extruded aluminium 6000 alloy series
Lens Material	Clearsite lens
Surface Finish	Super Durable resistant exterior polyester powder coating meets AAMA 2604-98 requirements (5 years Florida exposure), a Corrosion resistant finish (CRC) pre-finish is available to meet ASTM B-117 & ASTM D-1654 (salt spray resistance) and ASTM D-2247 requirements (humidity resistance).
Weight	1 board: 4.54 kg, 2 boards: 5.67 kg, 3 boards: 6.8 kg, Refer to Fixture Weights Table in complete specification sheet for fixture weights with motion detector installed and double configurations

Electrical and control

Voltage	120 volts, 208 volts, 240 volts, 277 volts, 347 volts, 480 volts
Control	On/Off control, 0-10V dimming

Environmental

Storage Temperature	-40°C [-40 °F] to 50°C [122 °F] (device must reach start-up temperature value before operating)
Operating Temperature	-40°C [-40 °F] to 50°C [122 °F]
Start-up Temperature	-25°C [-13 °F] to 50°C [122 °F]
Ingress Protection Rating	IP66 (optical chamber), Wet location rated
Environment	Dry / damp / wet location

EPA and fixture weight tables

*Fixture weights are estimated.

Standard fixture

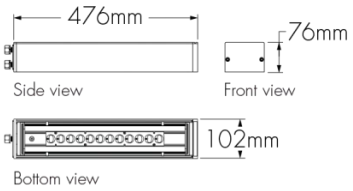
		S40/S60 (1 board)	M80/M100 (2 boards)	L120/L140 (3 boards)
EPA (sq m.)	S1E	0.05	0.08	0.12
	S2E	0.10	0.16	0.24
Weight* (kg)	S1E	4.54	5.67	6.80
	S2E	9.07	11.34	13.60

Fixture with motion detector option

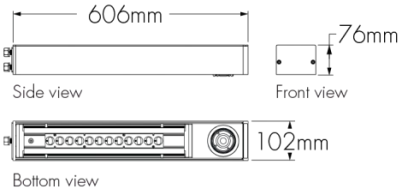
		S40/S60 (1 board)	M80/M100 (2 boards)	L120/L140 (3 boards)
EPA (sq m.)	S1E	0.07	0.10	0.13
	S2E	0.14	0.20	0.26
Weight* (kg)	S1E	5.44	6.58	7.71
	S2E	10.88	13.15	15.42

Dimensions

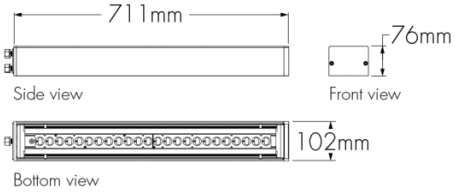
S40 and S60 (1 board)



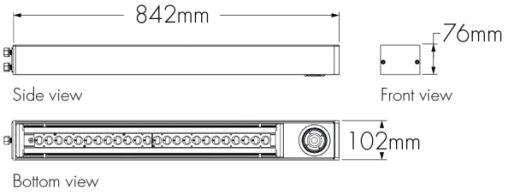
S40 and S60 (1 board) - Motion detector option



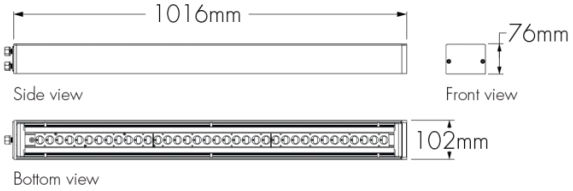
M80 and M100 (2 boards)



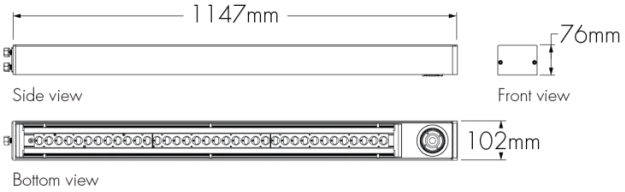
M80 and M100 (2 boards) - Motion detector option



L120 and L140 (3 boards)

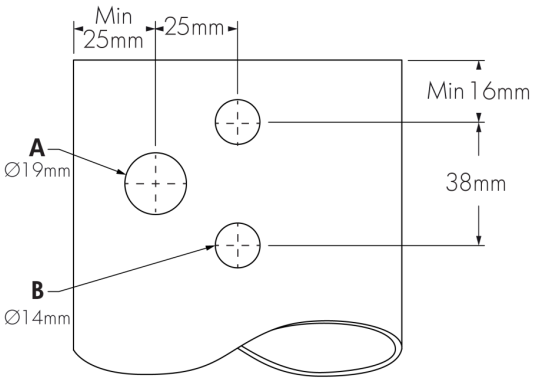


L120 and L140 (3 boards) - Motion detector option



Pole drilling pattern

BLDS-S1E and BLDS-S2E drilling pattern



A - Wire feeding location
B - (2X) for Ø1/2-13 bolts (included with luminaire)

Pole mounting adaptor

	Straight and muffler poles			Lumentech pole	
	102mm	**127mm**	**152mm**	**127mm**	**152mm**
Round shape	**RPA4S**	**RPA5S**	**RPA6S**	**RPA5TS**	**RPA6TS**
Square [1] shape	**SPA4**	**SPA5**	**SPA6**	n/a	**SPA6T**

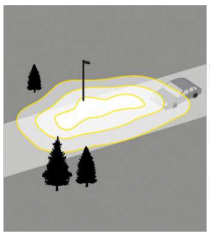
Available configurations*:
S1E Simple
S2E Double

[1] Square poles do not require adaptors, specification codes are used by Lumenpulse to provide appropriate hardware for installation only.

*Consult factory for other configurations.

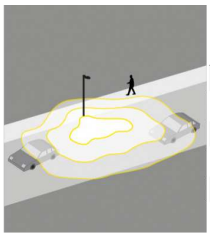
Photometric information

Type II, 4000K, CRI 70+



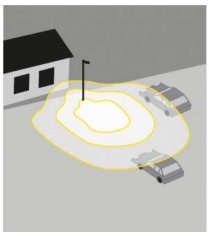
	Nominal output [lm]	Typical delivered output [lm]	Efficiency (lm/W)	BUG Rating B U G	Typical maximum power 120/277V (W)
S40	2,821	78	1 0 1	36
S60	4,122	75	1 0 1	55
M80	6,401	82	1 0 1	78
M100	8,570	75	2 0 2	115
L120	9,547	80	2 0 2	120
L140	10,849*	78	2* 0* 2*	140

Type III, 4000K, CRI 70+



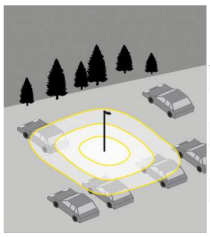
	Nominal output [lm]	Typical delivered output [lm]	Efficiency (lm/W)	BUG Rating B U G	Typical maximum power 120/277V (W)
S40	3,196	89	1 0 1	36
S60	4,670	85	1 0 1	55
M80	7,252	93	2 0 2	78
M100	9,710	84	2 0 2	115
L120	10,816	90	2 0 2	120
L140	12,291*	88	2* 0* 2*	140

Type IV, 4000K, CRI 70+*



	Nominal output [lm]	Typical delivered output [lm]	Efficiency (lm/W)	BUG Rating B U G	Typical maximum power 120/277V (W)
S40	2,663	74	1 0 1	36
S60	3,892	71	1 0 1	55
M80	6,042	77	2 0 2	78
M100	8,091	70	2 0 2	115
L120	9,012	75	2 0 2	120
L140	10,241*	73	2* 0* 2*	140

Type V square, 4000K, CRI 70+



	Nominal output [lm]	Typical delivered output [lm]	Efficiency (lm/W)	BUG Rating B U G	Typical maximum power 120/277V (W)
S40	3,282	91	2 0 1	36
S60	4,797	87	3 0 1	55
M80	7,448	95	3 0 1	78
M100	9,972	87	3 0 2	115
L120	11,109	93	4 0 2	120
L140	12,623*	90	4* 0* 2*	140

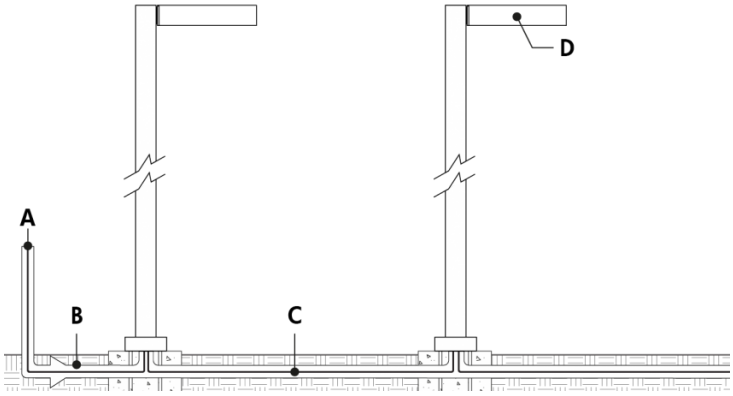
*Photometric performance is measured in compliance with IESNA LM-79-08. Due to rapid and continous advance in LED technology, photometric information is subject to change without notice.

Typical wiring diagrams

Wiring colour code

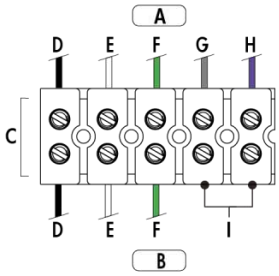
Color	Black	White	Green	Purple	Gray
Use	Line	Line/Neutral	Ground	0-10V+	0-10V -

On/Off control (NO)



A - Power input (120-480V, wiring by others)
B - Conduit (by others)
C - Power wiring (by others)
D - Lumenblade

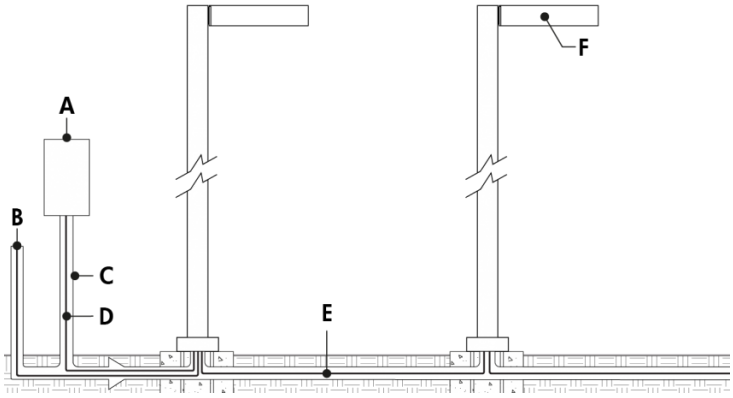
On/Off control (NO) - terminal connector wiring detail



A - To driver
B - Power input or from previous fixture
C - Terminal connector
D - Line
E - Line/Neutral
F - Ground
G - 0-10V -
H - 0-10V +
I - Not required

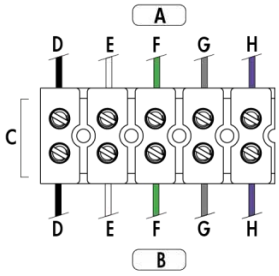
- Consult factory for specific applications and maximum fixture count/cable length recommendations.

0-10V dimming (DIM)



A - Dimmer (by others)
B - Power input (120-480V, wiring by others)
C - Conduit (by others)
D - Data wiring (by others)
E - Power and data wiring (by others)
F - Lumenblade

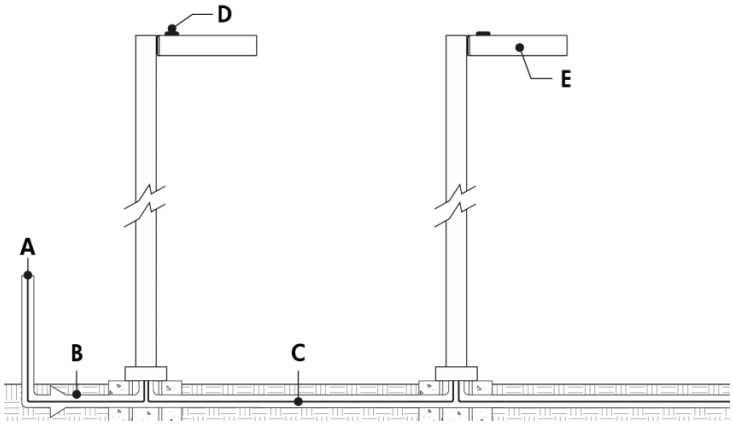
0-10V dimming (DIM) - terminal connector wiring detail



A - To driver
B - Power input or from previous fixture
C - Terminal connector
D - Line
E - Line/Neutral
F - Ground
G - 0-10V -
H - 0-10V +

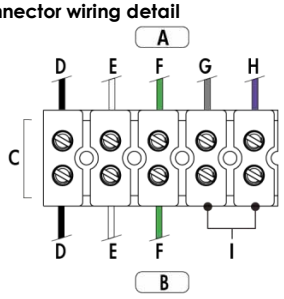
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- 0-10V mA ratings: passive dimmer (Current Sink): 3mA per fixture, active dimmer (Current Source): 0.5mA per fixture.
- 10% minimum dimming value.

5 pins and 7pins receptacle control (SPR5, SPR5 SC, SPR7, SPR7 SC)



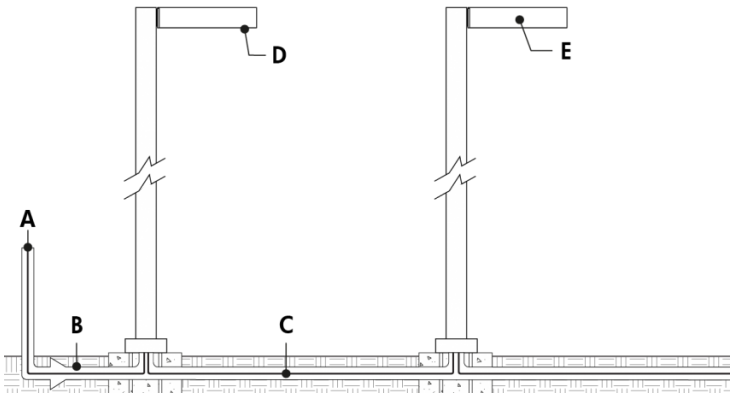
A - Power input (120-480V, wiring by others)
B - Conduit (by others)
C - Power wiring (by others)
D - Photoelectric control
E - Lumenblade

5 pins and 7pins receptacle control (SPR5, SPR5 SC, SPR7, SPR7 SC) - terminal connector wiring detail



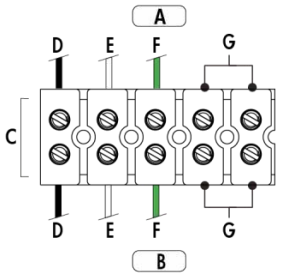
A - To driver
B - Power input or from previous fixture
C - Terminal connector
D - Line
E - Line/Neutral
F - Ground
G - 0-10V -
H - 0-10V +
I - Not required

Motion detector control (MDxx)



A - Power input (120-480V, wiring by others)
B - Conduit (by others)
C - Power wiring (by others)
D - Motion detector
E - Lumenblade

Motion detector (MDxx) - terminal connector wiring detail

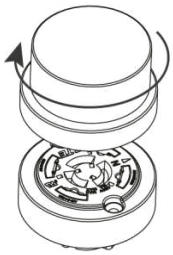


A - To driver
B - Power input or from previous fixture
C - Terminal connector
D - Line
E - Line/Neutral
F - Ground
G- Not required

5-pin and 7-pin receptacle options

SPR5 and SPR7 - 5-pin and 7-pin receptacles

SPR5 SC and SPR7 SC - 5-pin and 7-pin receptacles with shorting cap



Dimming receptacle meets ANSI C136.41 standard

Motion detector options

Programming

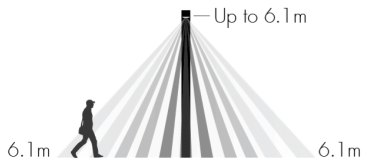
	MD10N - Narrow lens, 10% dimming level		**MD30N -** Narrow lens, 30% dimming level		**MD50N -** Narrow lens, 50% dimming level		**MDPN -** Narrow lens, programmable	
	100% (10V)	**10%** (1V)	**100%** (10V)	**30%** (3V)	**100%** (10V)	**50%** (5V)		*How to provide code:*
High mode [1]	10V		10V		10V		• 5V - 10V (Increment: **0.2V**)	10V
Low mode [2]	1V		3V		5V		• Off • 0V - 9.8V (Increment: **0.2V**)	2.6V
Time delay [3]	5 min		5 min		5 min		• 1min - 30min (Increment: **30 seconds**)	10 min
Cut off [4]	1 hr		1 hr		1 hr		• Disable • 1min - 59min (Increment: **30 seconds**) • 1hr - 5hr (Increment: **1 hour**)	3 hr
Set point [5]	Dis		Dis		Dis		• Disable • Auto • 1fc - 250fc (Increment: **1fc**)	Auto
Sensitivity [6]	Max		Max		Max		• On-Fix • Off-Fix • Low • Med • Max	Med
Ramp up time [7]	3 sec		3 sec		3 sec		• Disable • 1sec - 60sec (Increment: **1 second**)	10 sec
Fade down time [8]	3 sec		3 sec		3 sec		• Disable • 1sec - 60sec (Increment: **1 second**)	10 sec
Photocell On/Off [9]	Dis		Dis		Dis		• Disable • 1fc - 250fc (Increment: **1fc**)	Dis

[1] When the sensor detects motion, the dimming control output ramps up to the selected HIGH light level.
[2] After the sensor stops detecting motion and the time delay expires, the dimming control output fades down to the selected LOW light level.
[3] The selected time period that must elapse after the last time the sensor detects motion for the electric lights to fade to LOW mode.
[4] The time period that must elapse after the lights fade to LOW mode, and the sensor detects no motion for the electric lights to turn OFF.
[5] When enabled, the selectable ambient light level threshold that will hold the electric lights off or at LOW level when the sensor detects motion.
[6] The response of the PIR detector to motion within the sensor's coverage area.
[7] Time period for light level to increase from LOW to HIGH.
[8] Time period for light level to decrease from HIGH to LOW.
[9] When enabled, the sensor will force the load OFF after the light level has exceeded the selected photocell setpoint PRIOR SAVE SEND for at least a minute. It will also force the load ON when the light level goes below the setpoint, even if no motion is detected.
[10] The motion detector programming can be modified on site. A remote is required, order separately. See Remote section in the specification sheet for details.

Dimming: When motion is detected within the sensor's coverage area, the sensor sends a signal to ramp the load up to the selectable High Mode level unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting, the lights will go to the selectable Low Mode level based on the signal from the sensor. If desired, a cut off time delay will trigger to eventually turn the lights OFF.
Non dimming: When motion is detected within the sensor's coverage area, the sensor sends a signal to turn the load ON unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting, the lights will go OFF based on the signal from the sensor.
Dusk to dawn control: When photocell on/off is enabled, and the ambient light falls below the photocell setpoint, the sensor ramps the load up to the selectable High Mode level. If no motion is detected for the duration of the time delay setting, the lights will go to the selectable Low Mode level. If the cut off time delay is disabled, the load will remain on, at High or Low level, based on motion detection, until the ambient light increases above the photocell setpoint.

Coverage area

Narrow lens (MD10N, MD30N, MD50N and MDPN)*

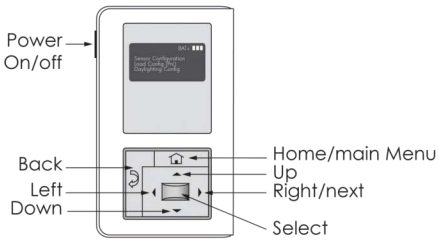


* Maximum 6.1 m height, 12.2 m diameter coverage area

High temperatures at the covered area (above 31 °C - 33 °C) reduce the detection zone of the sensor. Consider adding more sensors if the ambient temperatures are expected to be high. Additionally, high floor level temperature may require larger movement for detection. Coverages shown in the diagrams are maximum, measured in linear feet. They represent coverage for full-step walking motion, with no obstacles.

Remote (order separately)

MDRC001 - Remote to program motion detector on site



Remote to program motion detector on-site.

- Compatible with all motion detector options.

How to order

Housing	Mounting	Voltage	Lens [2]	Output (nominal lumens)	Colour and Colour Temperature	Colour Rendering	Distributions	Finish	Control	Options	Pole Mounting Adaptor [18]
BLDS Lumenblade small [1]	**SD** Side mounting	**120** 120 volts **208** 208 volts **240** 240 volts **277** 277 volts **347** 347 volts **480** 480 volts	**CSL** Clearsite lens	**S40** 4000lm (1 board, 476 mm) [3] [4] **S60** 6000lm (1 board, 476 mm) [3] **M80** 8000lm (2 boards, 711 mm) [3] **M100** 10000lm (2 boards, 711 mm) [3] **L120** 12000lm (3 boards, 1016 mm) [3] **L140** 14000lm (3 boards, 1016 mm) [3]	**22K** 2200K [5] **27K** 2700K [5] **30K** 3000K **35K** 3500K **40K** 4000K **57K** 5700K	**CRI 70** CRI 70+ [6] **CRI 80** CRI 80+ [7]	**2** Type II **2BLS** Type II backlight shield **3** Type III **3BLS** Type III backlight shield **4** Type IV **4BLS** Type IV backlight shield **5S** Type V square	**BK** Black Sandtex® **BRZ** Bronze Sandtex® **SI** Silver Sandtex® **BKTX** Textured black **BRZTX** Textured bronze non-metallic **GRATX** Textured medium grey **GRNTX** Textured green **WHTX** Textured white **CC** Custom colour and finish (please specify RAL colour) [8] [9] [10]	**DIM** 0-10V dimming [11]	**CRC** Corrosion-resistant coating for hostile environments [12] **SP** Surge protector [13] **SPR5** 5-pin receptacle [14] **SPR5 SC** 5-pin receptacle with shorting cap [14] **SPR7** 7-pin receptacle [14] **SPR7 SC** 7-pin receptacle with shorting cap [14] **MD10N** Motion detector 10% factory-set dimming level (narrow lens) [15] [16] **MD30N** Motion detector 30% factory-set dimming level (narrow lens) [15] [16] **MD50N** Motion detector 50% factory-set dimming level (narrow lens) [15] [16] **MDPN** Motion detector programmable, factory-set dimming level (narrow lens) [15] [16] [17]	**RPA4S** Round pole adaptor for Ø102 mm pole **RPA5S** Round pole adaptor for Ø127 mm pole **RPA6S** Round pole adaptor for Ø152 mm pole **SPA4** Square pole adaptor for Ø102 mm pole **SPA5** Square pole adaptor for Ø127 mm pole **SPA6** Square pole adaptor for Ø152 mm pole **RPA5TS** Round pole adaptor for Lumentech Ø127 mm pole **RPA6TS** Round pole adaptor for Lumentech Ø152 mm pole **SPA6T** Square pole adaptor for Lumentech Ø152 mm pole

Notes:

1. Product code is for a single fixture only (S1E configuration). For double configuration (S2E), a second product code must be completed.
2. Consult factory for Softsite lens option. Available for 3000lm (1 board), 5000lm (2 boards) and 7000lm (3 boards) outputs.
3. Motion detector options add 130 mm to total length of fixture.
4. Available up to 277V.
5. Available for CRI 80 only.
6. Binning within a 3-step McAdam ellipse, with the exception of 2200K and 5700K.
7. Binning within a 2-step MacAdam ellipse, with the exception of 5700K.
8. Specify RAL number followed by "TX" for textured finish (ex: RAL9007TX) or STX for Sandtex finish (ex: RAL9007STX). Textured or Sandtex finishes are recommended for the durability of all products. If a finish is not specified with the RAL number (ex: RAL9007), a glossy finish will be provided. Please consult factory for other RAL textures and glosses, or to match alternate colour charts. Final colour matching results may vary.
9. Charges apply for RAL colours. Consult factory for details.
10. Longer lead times can be expected for custom RAL colour finishes.
11. DIM control can be used as NO (On/off control) if no data is required.
12. Use only when exposed to salt spray and harsh chemicals. This option is not required for normal outdoor exposure.
13. Not available with 347V and 480V voltage options when combined with 4000 lumens.
14. Only one receptacle can be specified per fixture, cannot be combined with motion detector option.
15. The motion detector programming can be modified on site. A remote is required, order separately. See Remote section in the specification sheet for details.
16. Only one motion detector can be specified per fixture, cannot be combined with a receptacle.
17. The motion detector is programmed in the factory, as per the settings requested at the time of the order.
18. Consult Pole Mounting Adaptor section for standard available configurations.

lumenpulse™

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6" SQUARE DIRECT / INDIRECT
FOCUSED ILLUMINATION

cylinders

C0618SQUDXT, C0624SQUDXT - WALL MOUNT

APPLICATION

6" square x 18" or 24" high direct / indirect XT series cylinder luminaire for accent and general illumination.

FEATURES

Spectrum's Cylinder series provides traditional architectural style with high performance and energy efficient illumination. Rugged design with flexible mounting, finish and LED options make these extremely versatile fixtures. Quick change LED module with interchangeable optics for job site flexibility and fixture upgrade.

FINISH

Multi-stage polyester powder-coat process applied on our dedicated paint lines. See mounting and color pages for standard finishes. All exposed materials are chromate pretreated to resist corrosion.

ELECTRONICS

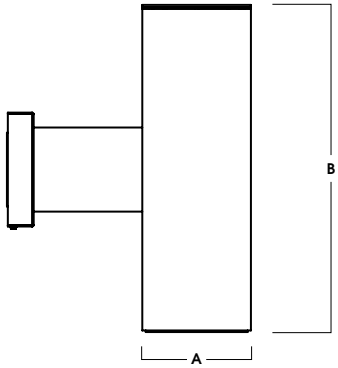
LED system features Xicato LED module with proprietary phosphor technology that provides consistent stable color with CCT control of +/- 100K over life of the light engine. Base CRI is 83 with 2-step MacAdam Ellipse binning. High CRI is 98 with 1 x 2-step MacAdam Ellipse binning. Variety of electronic 120V/277V and dimming drivers. 1 or 2 circuit operation.

CONSTRUCTION

Fabricated seamless aluminum fixture housing. Silicone gasket seals optical chamber. Specular primary optical reflectors provide high efficiency illumination. Impact resistant tempered glass lenses. Stainless steel hardware with galvanized steel brackets to resist corrosion. Die-cast aluminum trim.

CODE COMPLIANCE

BAA compliant. ETL certified to meet US and Canadian standards. Suitable for dry or damp locations. Wet Location Option. Manufactured and tested to UL standards No. 1598/8750.



SERIES	A	B
C0618SQUDXT	6.0	18.0
C0624SQUDXT	6.0	24.0

Fixture Weight: 17.2 lbs

LUMENS / WATTAGE DATA

PART NUMBER	SOURCE LUMENS	DELIVERED LUMENS[2]	SYSTEM WATTS[3]	LPW
C06xxSQUDXT10Lx2	2000	1374	18.2	75
C06xxSQUDXT13Lx2	2600	1852	26.0	71
C06xxSQUDXT20Lx2	4000	2849	43.4	66

SERIES	UPLIGHT[4]			DOWNLIGHT				CCT		DRIVER / DIMMING[6]		OPTIONS[7]		TRIM		MOUNTING[11]		FINISH[12]	
C0618SQUDXT 6" x 18" Cylinder C0624SQUDXT 6" x 24" Cylinder	LUMENS[1]		OPTICS	LUMENS[1]		OPTICS		83 CRI		EX	Electronic Driver, 120V/277V	WL	Wet Location	TCY[8]	Same Color as Cylinder	WM3	Wall Mount 3" Extension	MW[13]	Matte White
	10L	1000 Lm	XN[5] 12°	10L	1000 Lm	XN[5]	13°	27K	2700K	DS10X	10%, 0-10V, 120V/277V	FS	Fuse Holder and Fuse	TPT	Platinum Silver	WM5	Wall Mount 5" Extension	MB[13]	Matte Black
	13L	1300 Lm	ND 20°	13L	1300 Lm	ND	21°	30K	3000K	DO10X	1%, 0-10V, 120V/277V	2CIR	2 Circuit	TCC	Custom Color			PT[13]	Platinum Silver
	20L	2000 Lm	MD 38°	20L	2000 Lm	MD	39°	35K	3500K	DS2W1	ELV/MLV, 120V							CC	Custom Color
			WD 45°			WD	44°	40K	4000K							EMERGENCY BATTERY OPTIONS		See Page 6 for Full Range of Color Options (83-90095)	
			XW 58°			XW	56°	98 CRI						LENS		EMRM	7W Remote EM		
								27HK	2700K					GL[9]	Clear Glass Lens	EMEN	7W Remote with Enclosure		
								30HK	3000K					SO[10]	Micro Prism Solite™ Lens				
								35HK	3500K					FG	Frosted Glass Lens				
								40HK	4000K										

EXAMPLE: C0624SQUDXT20LWD20LWD35KEX/TCYSO/WM5/MW

NOTES:
1 Nominal Source Lumens at Any CCT **2** Nominal Delivered Lumens at 83 CRI at Any CCT with MD-GL, MD-TCY-SO-MW **3** At 83 CRI **4** ¼" Clear Glass Only **5** 13L Max/XN not Available with 98 CRI Option **6** Contact Factory for Additional Options **7** See Product Options Page for Details **8** Standard Finish **9** Standard Lens for All Indirect and Direct: XN, ND **10** Standard Lens for Direct: MD, WD, XW **11** See Mounting Page for Details on Components and Finishes **12** See Color Page for More Options/Consult Factory for Special Finishes **13** Standard Finishes

SPECTRUM LIGHTING INC.

PROJECT:

TYPE:

5 YEAR WARRANTY

MADE IN THE USA

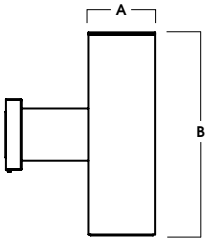
6" SQUARE DIRECT / INDIRECT

FOCUSED ILLUMINATION / FIXTURE OPTIONS

cylinders

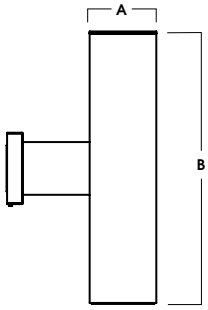
SERIES SIZES

C0618SQUDXT



A	B
6.0 152.4 mm	18.0 457.2 mm

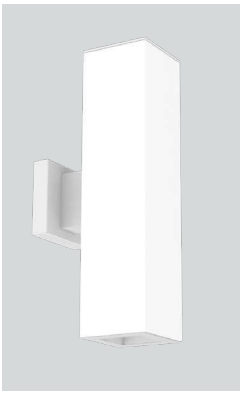
C0624SQUDXT



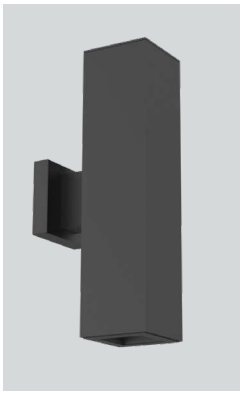
A	B
6.0 152.4 mm	24.0 609.6 mm

STANDARD FINISHES

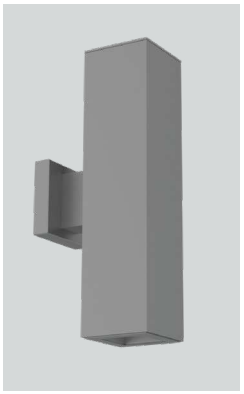
MW
MATTE WHITE



MB
MATTE BLACK

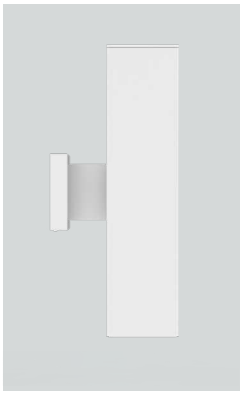


PT
PLATINUM SILVER

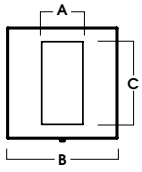


WALL MOUNT DETAIL

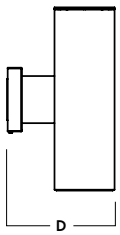
WM3
WALL MOUNT 3" EXTENSION



FRONT VIEW

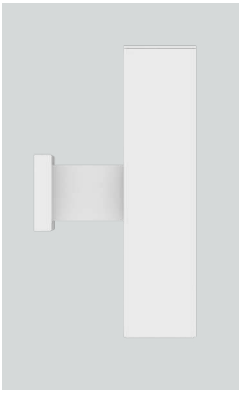


SIDE VIEW

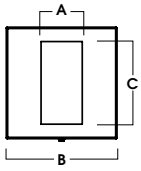


A	B	C	D
2.4 61.0 mm	6.4 162.6 mm	4.7 119.4 mm	10.7 271.8 mm

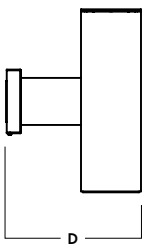
WM5
WALL MOUNT 5" EXTENSION



FRONT VIEW



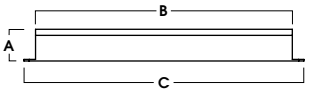
SIDE VIEW



A	B	C	D
2.4 61.0 mm	6.4 162.6 mm	4.7 119.4 mm	13.4 340.4 mm

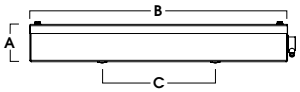
EMERGENCY BATTERY OPTIONS

EMRM* - 7W REMOTE EMERGENCY BATTERY (50' MAX)



A	B	C
1.3	12.6	13.0

EMEN* - 7W REMOTE EMERGENCY BATTERY WITH ENCLOSURE (50' MAX)



A	B	C
2.0	17.0	6.2

*OTHER EM BATTERY SIZES AVAILABLE, CONSULT FACTORY

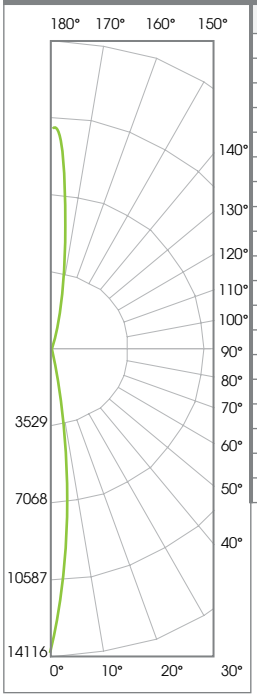
6" SQUARE DIRECT / INDIRECT

FOCUSED ILLUMINATION / PHOTOMETRIC DATA

C06xxSQUDXT-13LXNGL-13LXN-xxKEX-TCY-GLMW

13Lx2 XTRA NARROW - 83 CRI

CANDLEPOWER CURVE — **TEST: SP-00633_1**



Angle	CP at 0°
0	14116
10	2223
20	506
30	134
40	14
50	17
60	12
70	7
80	3
90	1
100	4
110	1
120	2
130	3
140	4
150	214
160	398
170	1813
180	10121

ZONAL LUMENS

0-20	889	46%
0-40	1127	59%
0-60	1147	60%
0-90	1162	60%
90-120	9	0%
90-150	58	3%
90-180	761	40%
Total Lumens	1923	100%

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Height*	FC at Center	Diameter of Beam**	FC at Beam**
5.5'	467	1.2'	231
6.5'	334	1.4'	165
7.5'	251	1.6'	124
8.5'	195	1.8'	97
10.0'	141	2.1'	70
12.0'	98	2.5'	48
14.0'	72	2.9'	36
16.0'	55	3.4'	27

* From aperture to horizontal surface below.
** At IESNA defined Beam Angle, to 50% Max. CP.

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Distance*	FC at Center	Diameter of Beam**	FC at Beam**
4.0'	882	0.8'	437
5.0'	565	1.0'	280
6.0'	392	1.2'	194
8.0'	221	1.5'	109
10.0'	141	1.9'	70
12.0'	98	2.3'	49
14.0'	72	2.7'	36
16.0'	55	3.1'	27

* From top of fixture to horizontal surface above.
** At IESNA defined Beam Angle, to 50% Max. CP.

Delivered Lumens: 1923
Luminaire Watts: 36.8
LER: 52

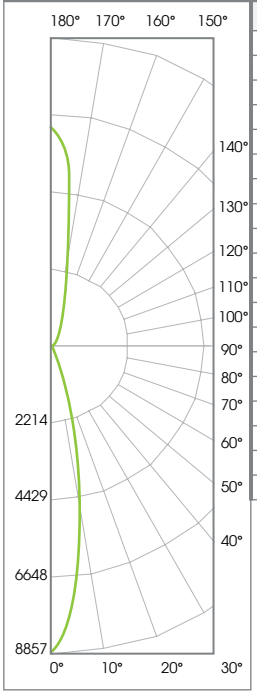
CP @ 0° (Nadir): 14116
Direct Beam Angle: 12°
Indirect Beam Angle: 11°
CRI: 83

Spacing Ratio: N/A
Output Multipliers: 10L x 0.74

C06xxSQUDXT-20LNDGL-20LND-xxKEX-TCY-GLMW

20Lx2 NARROW - 83 CRI

CANDLEPOWER CURVE — **TEST: SP-00633_2**



Angle	CP at 0°
0	8857
10	4619
20	1428
30	332
40	36
50	32
60	24
70	18
80	7
90	0
100	8
110	3
120	3
130	3
140	23
150	542
160	1019
170	3271
180	6375

ZONAL LUMENS

0-20	1346	40%
0-40	1900	56%
0-60	1954	58%
0-90	1996	59%
90-120	16	0%
90-150	140	4%
90-180	1391	41%
Total Lumens	3386	100%

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Height*	FC at Center	Diameter of Beam**	FC at Beam**
5.5'	293	2.0'	142
6.5'	210	2.4'	101
7.5'	157	2.8'	76
8.5'	123	3.2'	59
10.0'	89	3.7'	43
12.0'	62	4.4'	30
14.0'	45	5.2'	22
16.0'	35	5.9'	17

* From aperture to horizontal surface below.
** At IESNA defined Beam Angle, to 50% Max. CP.

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Distance*	FC at Center	Diameter of Beam**	FC at Beam**
4.0'	554	1.4'	268
5.0'	354	1.8'	172
6.0'	246	2.1'	119
8.0'	138	2.8'	67
10.0'	89	3.5'	43
12.0'	62	4.2'	30
14.0'	45	4.9'	22
16.0'	35	5.6'	17

* From top of fixture to horizontal surface above.
** At IESNA defined Beam Angle, to 50% Max. CP.

Delivered Lumens: 3386
Luminaire Watts: 43.4
LER: 78

CP @ 0° (Nadir): 8857
Direct Beam Angle: 21°
Indirect Beam Angle: 20°
CRI: 83

Spacing Ratio: N/A
Output Multipliers: 10L x 0.48, 13L x 0.65
83-0032

6" SQUARE DIRECT / INDIRECT

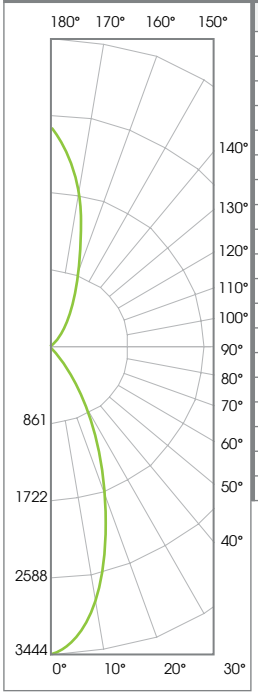
FOCUSED ILLUMINATION / PHOTOMETRIC DATA

cylinders

C06xxSQUDXT-20LMDGL-20LMD-xxKEX-TCY-SOMW

20Lx2 MEDIUM - 83 CRI

CANDLEPOWER CURVE



TEST: SP-00633_3

Angle	CP at 0°
0	3444
10	2818
20	1641
30	500
40	84
50	42
60	27
70	20
80	8
90	1
100	7
110	5
120	4
130	7
140	24
150	388
160	882
170	1653
180	2492

ZONAL LUMENS

0-20	916	32%
0-40	1615	57%
0-60	1695	59%
0-90	1740	61%
90-120	16	1%
90-150	143	5%
90-180	1108	39%
Total Lumens	2849	100%

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Height*	FC at Center	Diameter of Beam**	FC at Beam**
5.5'	114	3.9'	51
6.5'	82	4.6'	36
7.5'	61	5.3'	27
8.5'	48	6.0'	21
10.0'	34	7.0'	15
12.0'	24	8.4'	11
14.0'	18	9.8'	8
16.0'	13	11.2'	6

* From aperture to horizontal surface below.
** At IESNA defined Beam Angle, to 50% Max. CP.

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Distance*	FC at Center	Diameter of Beam**	FC at Beam**
4.0'	215	2.1'	100
5.0'	138	2.7'	64
6.0'	96	3.2'	45
8.0'	54	4.3'	25
10.0'	34	5.4'	16
12.0'	24	6.4'	11
14.0'	18	7.5'	8
16.0'	13	8.6'	6

* From top of fixture to horizontal surface above.
** At IESNA defined Beam Angle, to 50% Max. CP.

Delivered Lumens: 2849
Luminaire Watts: 43.4
LER: 66

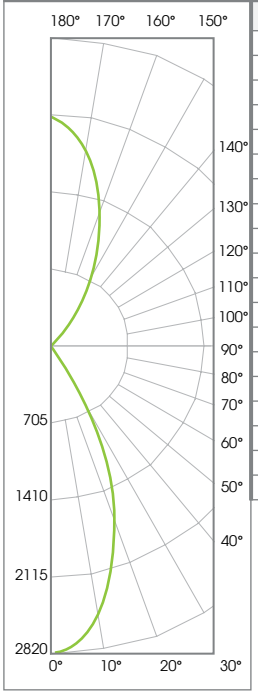
CP @ 0° (Nadir): 3444
Direct Beam Angle: 38.6°
Indirect Beam Angle: 30°
CRI: 83

Spacing Ratio: N/A
Output Multipliers: 10L x 0.48, 13L x 0.65

C06xxSQUDXT-20LWDGL-20LWD-xxKEX-TCY-SOMW

20Lx2 WIDE - 83 CRI

CANDLEPOWER CURVE



TEST: SP-00633_4

Angle	CP at 0°
0	2820
10	2467
20	1600
30	543
40	115
50	51
60	24
70	20
80	8
90	1
100	5
110	4
120	5
130	15
140	82
150	679
160	1209
170	1854
180	2119

ZONAL LUMENS

0-20	822	28%
0-40	1562	53%
0-60	1659	56%
0-90	1703	58%
90-120	15	1%
90-150	223	8%
90-180	1256	42%
Total Lumens	2959	100%

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Height*	FC at Center	Diameter of Beam**	FC at Beam**
5.5'	93	4.4'	40
6.5'	67	5.2'	29
7.5'	50	6.0'	22
8.5'	39	6.8'	17
10.0'	28	8.0'	12
12.0'	20	9.6'	8
14.0'	14	11.3'	6
16.0'	11	12.9'	5

* From aperture to horizontal surface below.
** At IESNA defined Beam Angle, to 50% Max. CP.

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Distance*	FC at Center	Diameter of Beam**	FC at Beam**
4.0'	176	2.9'	78
5.0'	113	3.6'	50
6.0'	78	4.4'	35
8.0'	44	5.8'	19
10.0'	28	7.3'	12
12.0'	20	8.7'	9
14.0'	14	10.2'	6
16.0'	11	11.6'	5

* From top of fixture to horizontal surface above.
** At IESNA defined Beam Angle, to 50% Max. CP.

Delivered Lumens: 2959
Luminaire Watts: 43.4
LER: 68

CP @ 0° (Nadir): 2820
Direct Beam Angle: 43.8°
Indirect Beam Angle: 40.0°
CRI: 83

Spacing Ratio: N/A
Output Multipliers: 10L x 0.48, 13L x 0.65

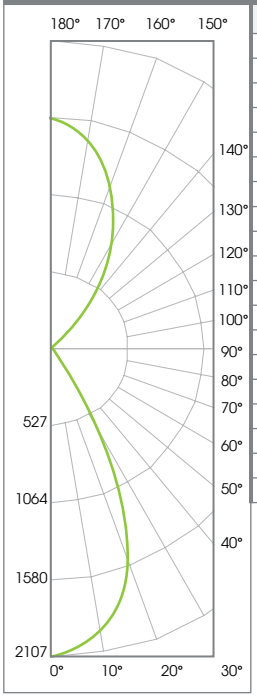
6" SQUARE DIRECT / INDIRECT

FOCUSED ILLUMINATION / PHOTOMETRIC DATA

C06xxSQUDXT-20LXWGL-20LXW-xxKEX-TCY-SOMW

20Lx2 XTRA WIDE - 83 CRI

CANDLEPOWER CURVE



TEST: SP-00633

Angle	CP at 0°
0	2107
10	1941
20	1492
30	536
40	167
50	59
60	24
70	18
80	8
90	2
100	6
110	4
120	7
130	36
140	150
150	765
160	1171
170	1450
180	1590

ZONAL LUMENS

0-20	674	24%
0-40	1413	50%
0-60	1534	54%
0-90	1576	56%
90-120	15	1%
90-150	294	10%
90-180	1261	44%
Total Lumens	2837	100%

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Height*	FC at Center	Diameter of Beam**	FC at Beam**
5.5'	70	5.2'	29
6.5'	50	6.1'	20
7.5'	37	7.1'	15
8.5'	29	8.0'	12
10.0'	21	9.4'	9
12.0'	15	11.3'	6
14.0'	11	13.2'	4
16.0'	8	15.1'	3

* From aperture to horizontal surface below.
** At IESNA defined Beam Angle, to 50% Max. CP.

SINGLE UNIT: PERFORMANCE
INITIAL FOOTCANDLES AND BEAM ANGLE DIAMETERS

Mounting Distance*	FC at Center	Diameter of Beam**	FC at Beam**
4.0'	132	3.7'	54
5.0'	84	4.7'	35
6.0'	59	5.6'	24
8.0'	33	7.5'	14
10.0'	21	9.3'	9
12.0'	15	11.2'	6
14.0'	11	13.1'	4
16.0'	8	14.9'	3

* From top of fixture to horizontal surface above.
** At IESNA defined Beam Angle, to 50% Max. CP.

Delivered Lumens: 2837
Luminaire Watts: 43.4
LER: 65

CP @ 0° (Nadir): 2107
Direct Beam Angle: 50.4°
Indirect Beam Angle: 50.0°
CRI: 83

Spacing Ratio: N/A
Output Multipliers: 10L x 0.48, 13L x 0.65

COLOR OPTIONS - POWDER COAT PAINT FINISHES

NOTE: NO PRINTED IMAGE CAN EQUAL THE EXACT COLOR OF FINISH ON METAL.
SEE INDIVIDUAL SPECIFICATION SHEETS OR CONSULT FACTORY FOR ADDITIONAL INFORMATION.

SPECTRUM
POWDER COAT COLORS

STANDARD CORD / STEM / CANOPY FINISHES

FIXTURE COLOR	STANDARD CORD COLOR	STANDARD CANOPY / STEM COLOR
Matte White, Textured White	Matte White	Matte White
Gloss White	Matte White	Gloss White
Matte Black, Textured Black	Matte Black	Matte Black
All Others	Matte Black	Same Color as Fixture
Custom Color	Contact Factory	Contact Factory

PAINT TIMES

TIER	COST	AVERAGE PAINT TIME*
Tier 1 - Standard Finishes	$	🕐
Tier 2 - Typical Finishes	$$	🕐🕐
Custom Color	Contact Factory	Contact Factory

*CONTACT FACTORY FOR SPECIFIC PRODUCT LEAD TIMES

TIER 1 - STANDARD FINISHES

MW Matte White

GW Gloss White

PT Platinum Silver

MB Matte Black

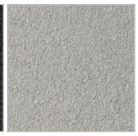
BZ Bronze

TIER 2 - TYPICAL FINISHES

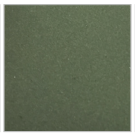
TW Textured White

TB Textured Black

MT* Textured Silver

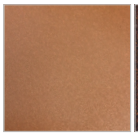


OB* Oil Rubbed Bronze

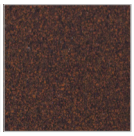


SN Sun Gold

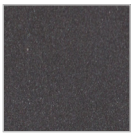
CO Copper Metallic



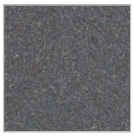
BR Brecchia



GH Graphite

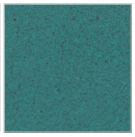


CH Charcoal



AL Almond

VE Verde Green



BL Blue Streak

RD Red Baron

OR Orange

CM Camel

PL Purple

PG Pub Green

TQ Turquoise

SF Sea Foam

PK Pink

AY Aero Yellow

EG Evergreen

LG Lime Green

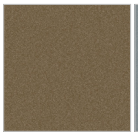
LB Light Blue

BY Burgundy

AK Anodic Black

AM Anodic Malachite

AZ Anodic Bronze



AS Anodic Sapphire

AN Anodic Natural

AC Anodic Champagne

CUSTOM COLOR FINISHES

CONTACT FACTORY

CC
Custom Color

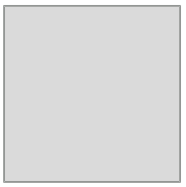
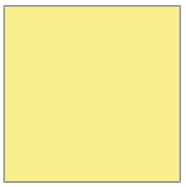
CC

*UNAVAILABLE FOR WET LOCATION

PDS-ZM Fixture

LED fixture number: B7696-A-FC-30-1440/1-24-TBD-GP-TBD-IP67

Power supply 0-10v

IP rating	Fixture	Finish	Cover	LED color	LED output
					
IP67	PDS-ZM Extrusion	Silver anodized	HS Cover frosted	3000 K	HIGH -477lm/ft 1440/1

input voltage	Length	Mounting	Wire lead	length of wire lead
24 V	TBD		TBD	TBD
	to be determined	GP	to be determined	to be determined

PRODUCT DESCRIPTION

Patent Number: US D807,572 S

Fixture Certified to NSF 2 standards when assembled by KLUS

Closet Rated

- Equipped with a small lock that allows the use of system fasteners and extrusion connectors
- Multiple applications
- ETL listed and approved for installation in all closet storage areas when factory built by KLUS as fixtures with 4.5w/ft or less.
- Designed to reach an IP67 waterproof rating

FINISH :

Silver anodized ☐

Fill empty fields

Product nr.	
Fixture type	
Company	
Job name	
Date	

TECHNICAL SPECIFICATION

Application

- for use in interior architecture in numerous configurations
- small lock facilitates building long linear, suspended, and polygonal lighting fixtures
- the sealed version can be used in external applications

Mounting

- mounted to the surface with appropriate mounting adhesives, mounting springs or screws
- can be suspended using UCHO-ZM eye hangers, PUSZ system

Additional information

- the extrusion is suitable for bending into gentle arches, in the plane adjacent to the LED strip
- can be equipped with transparent and frosted covers, as well as aluminum-colored or metallized plastic end caps
- space for LED strip: 0.55" / 14 mm

The side surfaces of the extrusion are smooth, without heat sinks. There is a ‘small lock’ on top of the extrusion which enables you
to connect extrusions into extended polygonal lighting fixtures.

Extrusion bending with covers: HS, LIGER, KA, K-BIS

Minimum internal radius	Minimum external radius
400 mm / 157.5"	400 mm / 157.5"

- minimum radius – bending radius which when exceeded causes destruction (deformation, bending or lack of compatibility with other accessories, e.g. covers, end caps, etc.) of the extrusion,
- internal radius – refers to the extrusion bent so that the cover is facing the inside of the arch,
- external radius - refers to the extrusion bent so that the cover is facing the outside of the arch,
- irregular curves are possible after consultation and individual quotation,
- when bending anodized extrusions, one should be aware of cracking of the anode coating (which may be more or less visible depending on the radius).

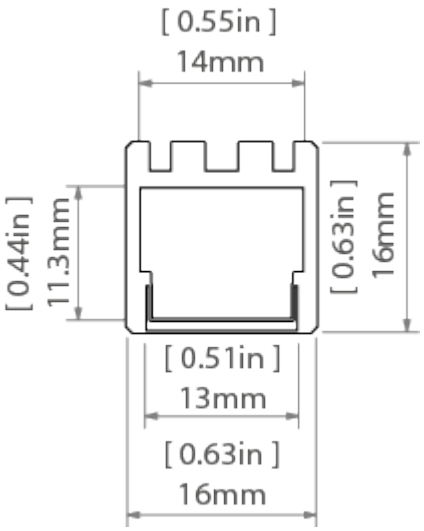
Possibility of making a linear fixture with IP67 protection, which means the fixture is dustproof and waterproof.

Line of Light Chart

✓ = Line of Light
X = Visible dotting

Extrusion:	Tape Series:	FC: HS Frosted / Extrusion specific frosted	LC: Liger Cover	BC: Black Cover	KA: KA frosted	KA-PRO: KA-PRO frosted
PDS-ZM						
	1210	X	X	X	X	X
	1220	X	X	X	X	X
	1275	X	✓	X	X	X
	0530	✓	✓	✓	X	✓
	1910	✓	✓	✓	X	✓
	1820	✓	✓	✓	X	✓

TECHNICAL DRAWING

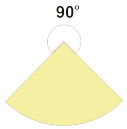

[0.55in]
14mm
[0.44in]
11.3mm
[0.63in]
16mm
[0.51in]
13mm
[0.63in]
16mm

RELATED PRODUCTS

COVERS

BLACK

LIGER Cover
black
Ref: 17040



CLEAR COVERS

HS Cover clear
Ref: 1370

KA Cover clear
Ref: 17036

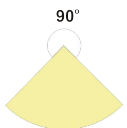
FROSTED COVERS

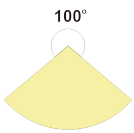
KA Cover frosted
Ref: 17035

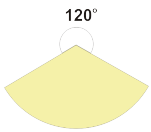
HS Cover frosted
Ref: 1369

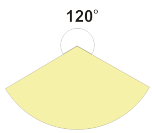
LIGER Cover
frosted
Ref: 17037 (Old
ref. 17031)

PDS-LUK Cover
Ref: 17076









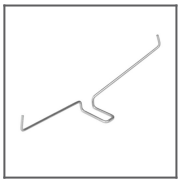
END CAPS

REGULAR END CAPS

PDS-ZM grey
End cap
Ref: 24145

ACCESSORIES

FASTENERS & MOUNTING ACCESSORIES



GP Spring
Ref: 00293

BZP-ZZ Head conductive
Ref: 42215

BZP Head
Ref: 42213

DP-ZZ Fastener
Ref: 00651

PUSZ-LIN-ZM Fastener
Ref: 42256

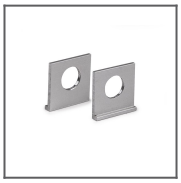
PUSZ-PRET-ZM Fastener
Ref: 42250

FI-10-ZM-P Fastener
Ref: 42244

FI-10-ZM-W Fastener
Ref: 42242

FI-8-LIN-ZM Fastener black
Ref: 42285L9005

FI-8-LIN-ZMZ Fastener black
Ref: 42286L9005



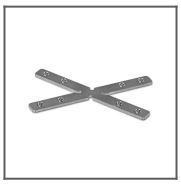
UCHO-ZM Hanger
Ref: 42512

COMPONENTS FOR CONNECTING FIXTURES

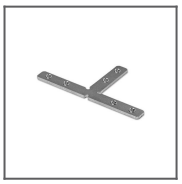
ZM-180 Connector
Ref: 42717

ZM-PION-45 Connector
Ref: 42314

ZM-Y120-G Connector
Ref: 42336



ZM-X60-G Connector
Ref: 42332



ZM-T90-G Connector
Ref: 42328

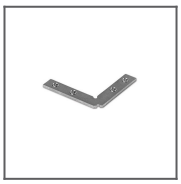
ZM-T60-G Connector
Ref: 42326

ZM-T45-G Connector
Ref: 42324

ZM-PION-120 Connector
Ref: 42320

ZM-135-G Connector
Ref: 42310

ZM-PION-135 Connector
Ref: 42719



ZM-90-G Connector
Ref: 42306

ZM-60-G Connector
Ref: 42304

ZM-45-G Connector
Ref: 42338

ZM-135 Connector
Ref: 42720

ZM-120 Connector
Ref: 42728

ZM-90 Connector
Ref: 42716

ZM-PION-90 Connector
Ref: 42718

ZM-120-G Connector
Ref: 42308

MOUNTING SETS

RG-1 Mounting set Silver
Ref: 42647NI

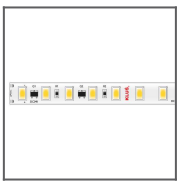
LED TAPES

HIGH EFFICACY

K-HE-1920-HD-24V
Ref: K-HE-1920-HD-24V

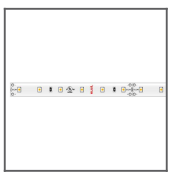
K-HE-0960-HD-24V
Ref: K-HE-0960-HD-24V

K-HE-1440-HD-24V
Ref: K-HE-1440-HD-24V

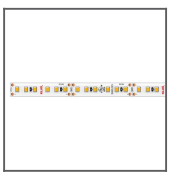


K-HE-0480-HD-24V
Ref: K-HE-0480-HD-24V

CRI95+

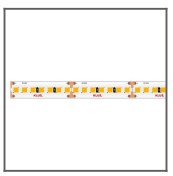


K-CR-1210-24V
Ref: K-CR-1210-24V



K-CR-1220-24V
Ref: K-CR-1220-24V

K-CR-1275-24V
Ref: K-CR-1275-24V



K-CR-1820-HD-24V
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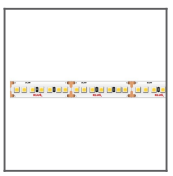
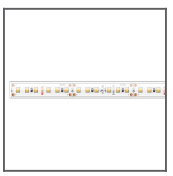


K-CR-1910-HD-24V
Ref: K-CR-1910-HD-24V

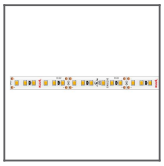
WP-K-CR-1210-24V
Ref: WP-K-CR-1210-24V



WP-K-CR-1220-24V
Ref: WP-K-CR-1220-24V

WP-K-CR-1275-24V
Ref: WP-K-CR-1275-24V

WHITE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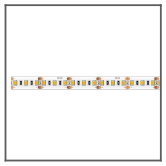
K-1275-12V
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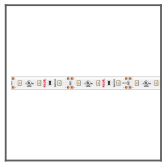
K-1210-12V
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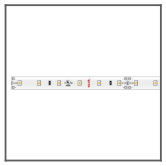
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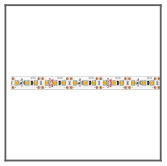
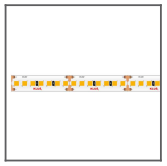
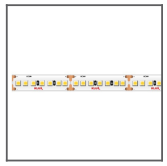

K-1220-12V
Ref: K-1220-12


K-1820-HD-24V
Ref: K-1820-HD-24

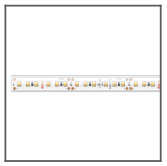

K-1910-HD-24V
Ref: K-1910-HD-24


K-1275-24V
Ref: K-1275-24


WP-K-1210-12V
Ref: WP-K-1210-12


WP-K-1220-12V
Ref: WP-K-1220-12


WP-K-1220-IP65-12V
Ref: WP-K-1220-IP65-12V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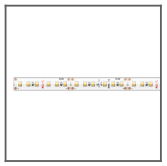
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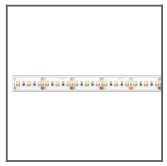
WP-K-1275-12V
Ref: WP-K-1275-12


WP-K-1275-24V
Ref: WP-K-1275-24


WP-K-1210-24V
Ref: WP-K-1210-24


WP-K-1640-HD-IP65-24
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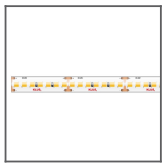
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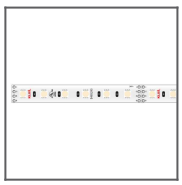
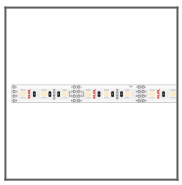
RGB/ RGBW


K-1275-RGB-24V
Ref: K-1275-RGB-24V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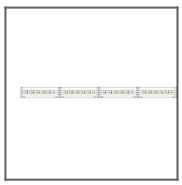
K-1530-RGB+W-24V
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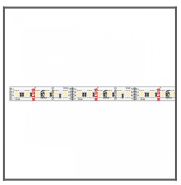
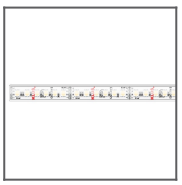

K-1920-120-RGB-24V
Ref: K-1920-120-RGB-24V


WP-K-1920-120-RGB-24V
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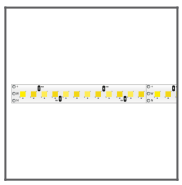
ADJUSTABLE WHITE/ DIM TO WARM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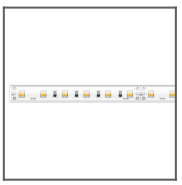
WP-K-27/65-1920-24V
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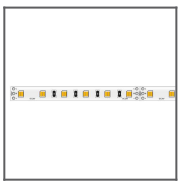
K-27/65-1920-24V
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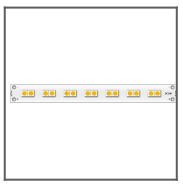
K-30/18-1770-24V
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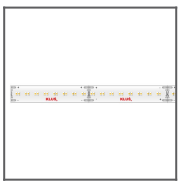
K-30/18-1770-010V-24V
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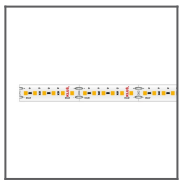
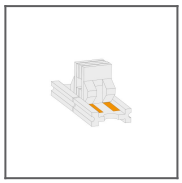
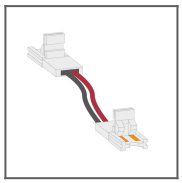
LONG RUN


K-LR-1000-24V
Ref: K-LR-1000-24

WHITE LED STRIP CONNECTORS



C1-0W
Ref: C1-0W



C2-1.5W
Ref: C2-1.5W

C3-6W
Ref: C3-6W

MARKETING MATERIALS

Presentation set
6
Ref: 90125

Constant Voltage 0-10 Dimmable LED Driver

The KLUŚ Constant Voltage Driver is an electronic Class 2, 0-10V dimmable LED driver with an integrated junction box, making it the perfect choice for tape lighting, tube lighting, linear lighting and multiple other commercial lighting applications. The UL enclosure is rated IP66 for indoor or outdoor installations and includes a separate input and output wiring compartment, each with three ⅞" knockouts for easy installation. The driver features hiccup mode, over current and short circuit protection, as well as an efficiency over >84% resulting in low operating case temperature. This driver is dimmable down to 1% with a 0-10V dimmer.

UL Enclosure with Integrated Junction Box
(12.1" L x 2.36" W x 1.40" H)

Installation: Has an integrated junction box with multiple ⅞" knockouts
Driver Type: Class 2 Single Channel
Dimming: 0-10V Dimmable Down to 1%
Input Voltage: Universal 120VAC to 277VAC, 50/60Hz
Output Voltage: 12VDC & 24VDC
IP Rating: IP66
Listing: Available in UL Listed, Class P, Type HL
Certifications: UL8750
Warranty: 5-Year

CLASS 2 | 12 / 24VDC | DIMMABLE | DIM DOWN TO 1%
TYPE HL | LISTED | MX | RoHS Compliant
CLASS P | SELV | IP66 | 120 - 277VAC

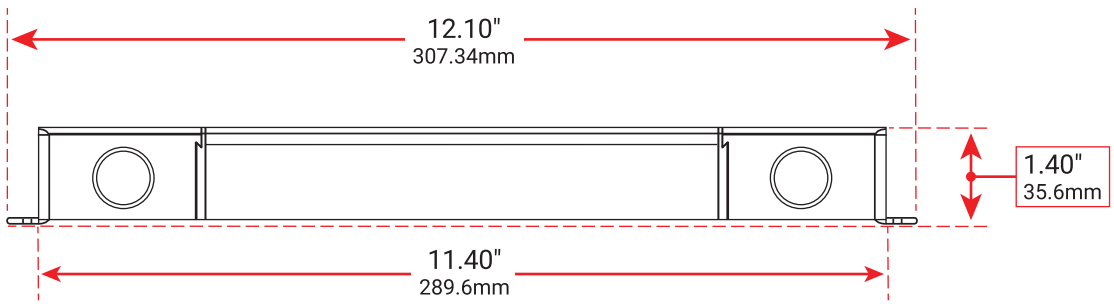
Ordering Guide

Part #	Maximum Power	Output	Dimming
010-30-24	30 Watt Max	24VDC	0-10V Dimming
010-60-24	60 Watt Max	24VDC	0-10V Dimming
010-96-24	96 Watt Max	24VDC	0-10V Dimming
010-50-12	50 Watt Max	12VDC	0-10V Dimming

Dimensions

Length: 12.10" (307.34mm)
Width: 2.36" (59.94mm)
Height: 1.40" (35.6mm)

Integrated Junction Box
(Drawing Not to Scale)

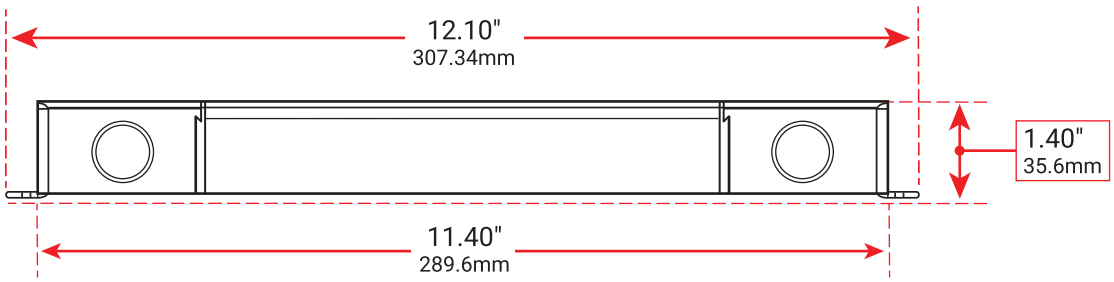


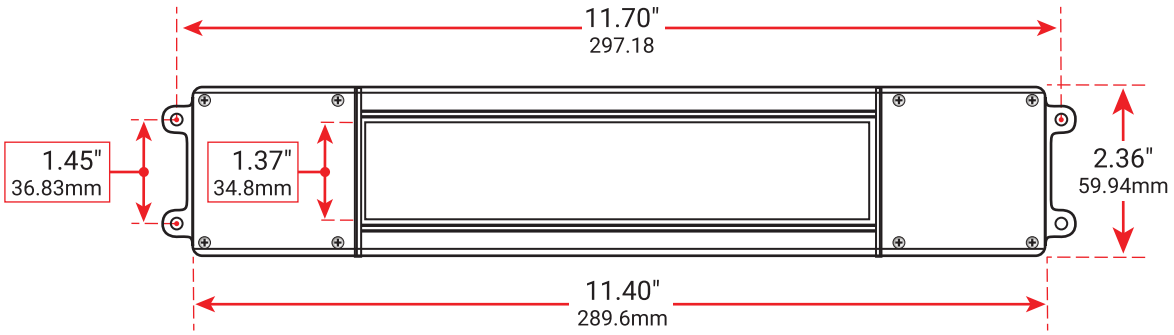
Constant Voltage 0-10 Dimmable LED Driver

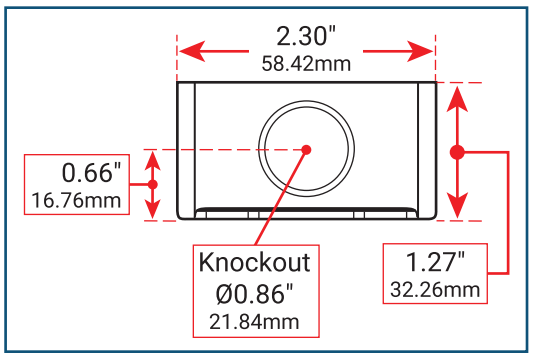
Specifications

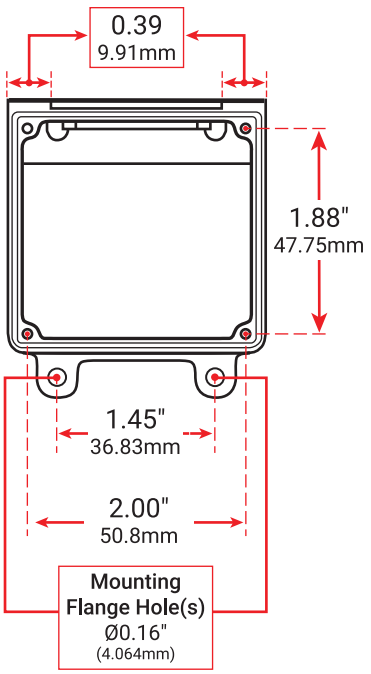
Part Numbers:	010-30-24V	010-50-12V	010-60-24V	010-96-24V
Input				
Input Voltage Range	120 - 277VAC ± 10%			
Input Frequency	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz
Input Current	0.96A Max	0.96A Max	0.96A Max	0.96A Max
Inrush Current	5A Max@120VAC 30A Max@277VAC	5A Max@120VAC 30A Max@277VAC	5A Max@120VAC 30A Max@277VAC	5A Max@120VAC 30A Max@277VAC
Efficiency	> 84% Max	> 80% Max	> 84% Max	> 84% Max
Power Factor	> 0.91	> 0.95	> 0.95	> 0.95
THD	< 20%	< 20%	< 20%	< 20%
Output				
Output Voltage	24VDC	12VDC	24VDC	24VDC
Max Load	30W	50W	60W	96W
Output Current @ Max Load	1.3A	4.2A	2.6A	4.1A
Output Ripple	< 3%	< 3%	< 3%	< 3%
Line Regulation	< 2%	< 2%	< 2%	< 2%
Load Regulation	< 3%	< 5%	< 3%	< 3%
Turn-On Delay Time	< 0.3 Sec	< 0.3 Sec	< 0.3 Sec	< 0.3 Sec
Environmental				
Env. Protection Rating	IP66	IP66	IP66	IP66
Ambient Operating Temp.	-25°C - +40°C (-13°F - 104°F)	-25°C - +40°C (-13°F - 104°F)	-25°C - +40°C (-13°F - 104°F)	-25°C - +40°C (-13°F - 104°F)
Max Case Temp. (Tcase)	80°C (176°F)	80°C (176°F)	80°C (176°F)	80°C (176°F)
Storage Temperature	-40°C - +85°C (-40°F - 185°F)	-40°C - +85°C (-40°F - 185°F)	-40°C - +85°C (-40°F - 185°F)	-40°C - +85°C (-40°F - 185°F)
Expected Lifetime	50k hours (>65°C) Tc	50k hours (>65°C) Tc	50k hours (>65°C) Tc	50k hours (>65°C) Tc
Audible Noise	<24dB Class A	<24dB Class A	<24dB Class A	<24dB Class A
Dimming (Dimming Models Only)				
Dimming Control	0 - 10V	0 - 10V	0 - 10V	0 - 10V
Minimum Dimming Level	1%	1%	1%	1%
Dimming Curves	Linear	Linear	Linear	Linear
Current Consumption	0.2mA Max Source/Sinc	0.2mA Max Source/Sinc	0.2mA Max Source/Sinc	0.2mA Max Source/Sinc
Protection				
Over Current Protection	Yes	Yes	Yes	Yes
Over Voltage Protection	Yes	Yes	Yes	Yes
Over Temp. Protection	Yes/Hiccup Mode	Yes/Hiccup Mode	Yes/Hiccup Mode	Yes/Hiccup Mode
Over Load Protection	Yes/Current Limit	Yes/Current Limit	Yes/Current Limit	Yes/Current Limit
Short Circuit Protection	Yes/Current Limit	Yes/Current Limit	Yes/Current Limit	Yes/Current Limit

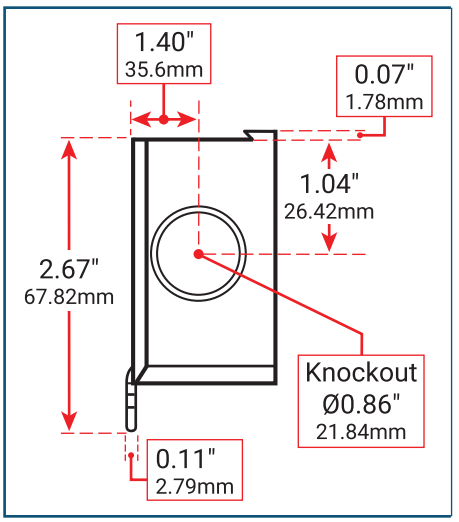
Constant Voltage 0-10 Dimmable LED Driver



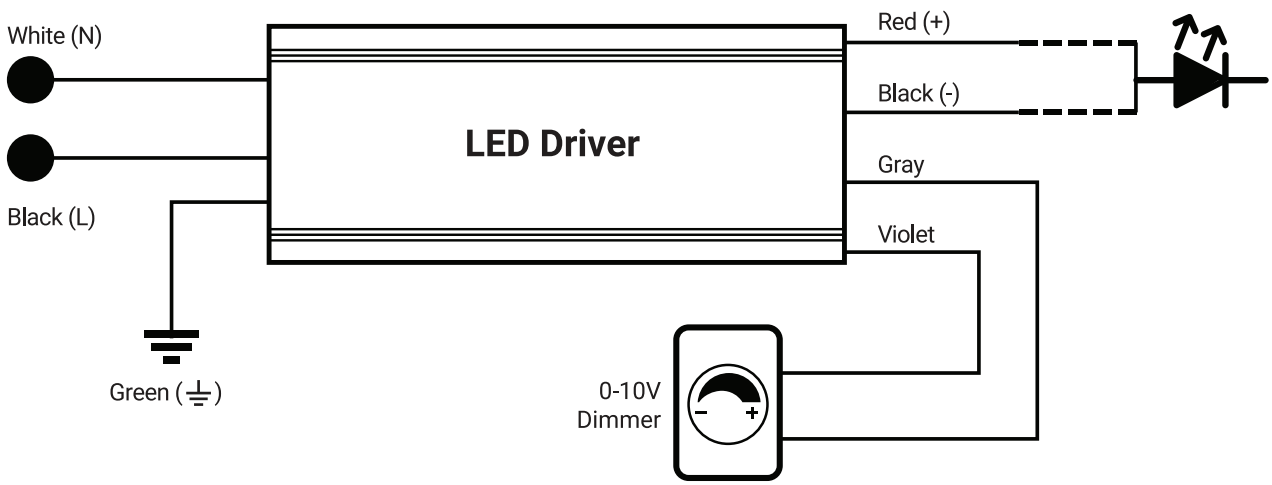




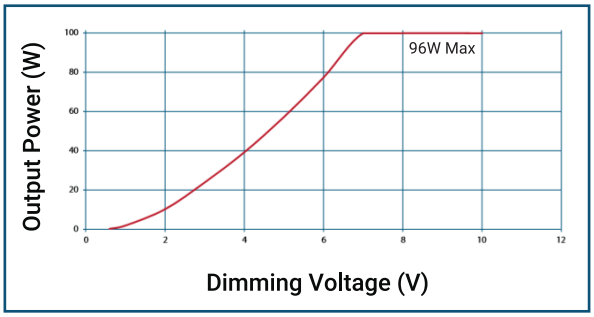




Constant Voltage 0-10 Dimmable LED Driver



Dimming Curve



Compatible 0-10V Dimmers

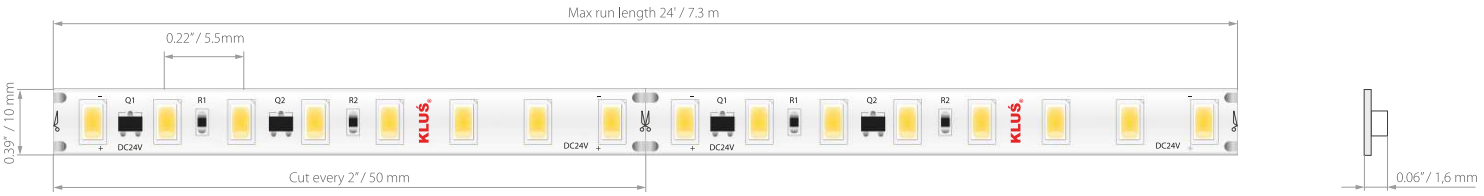
Dimming	Part Number
Lutron	Diva - DVTV
Lutron	Diva - NFTV
Lutron	Nova T - NTFTV
Leviton	Illumitech - IP7
Watt Stopper	DCLV1
Lightolier Controls	ZP600FAM120
Philips	Sunrise - SR1200ZTUNV

www.KlusDesign.com
Vero Beach, FL 32962 / United States / Customer Service: sophia@klusdesign.com / (Ph.) 772 321 2260, 772 569 6655

Rev. 001 ❖ 9/24/2020

K-HE-1440-HD-24V
FLEXIBLE LED STRIP DATA SHEET

- CRI 95+ / R9 values up to 99
- Television Lighting Consistency Index (TLCI)* 95+
- Efficiency up to 126 lm/w
- Lumen output up to 543 lm/ft
- IP64 KLUS clear coat
- Superior color consistency and dimming performance
- Clean line of light when paired with most KLUS extrusions and LIGER cover
- * TLCI provides a way to quantify a light source superior for electric camera or broadcast film lighting.

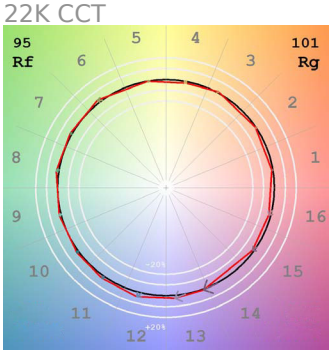


TECHNICAL DATA

Model	IP protection	Power consumption	Color temperature	Lumen output	Lumens per watt	Diode QTY per foot	Input voltage	Beam Angle	Max run length	LED width
K-HE-22-1440-HD-24V	IP 64	4.4 W/ft	2200 K	379 lm/ft	88 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-25-1440-HD-24V	IP 64	4.4 W/ft	2500 K	408 lm/ft	95 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-27-1440-HD-24V	IP 64	4.4 W/ft	2700 K	460 lm/ft	106 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-30-1440-HD-24V	IP 64	4.4 W/ft	3000 K	477 lm/ft	111 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-35-1440-HD-24V	IP 64	4.4 W/ft	3500 K	504 lm/ft	114 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-40-1440-HD-24V	IP 64	4.4 W/ft	4000 K	532 lm/ft	118 L/W	48 pcs/ft	24 V	120 °	24'	10 mm
K-HE-50-1440-HD-24V	IP 64	4.4 W/ft	5000 K	543 lm/ft	126 L/W	48 pcs/ft	24 V	120 °	24'	10 mm

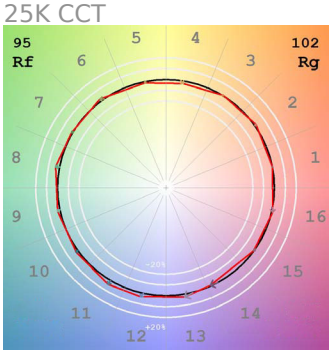
TM-30 DATA

22K CCT



Hue Bin	Rf	Chroma	Hue
1	96	-1	0.01
2	96	0	0.01
3	97	1	-0.01
4	96	-1	-0.02
5	96	0	0.01
6	94	3	0.04
7	97	2	0.00
8	95	2	0.01
9	96	2	0.00
10	97	2	0.00
11	96	2	-0.01
12	92	4	-0.04
13	88	2	-0.10
14	87	-2	-0.14

25K CCT

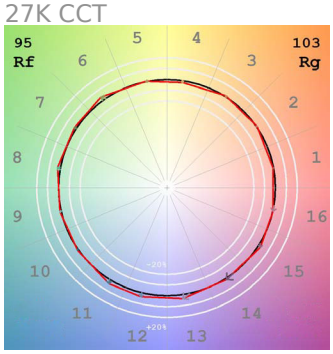


Hue Bin	Rf	Chroma	Hue
1	97	0	0.01
2	96	1	0.00
3	96	1	-0.01
4	95	-2	-0.03
5	97	-1	0.01
6	95	2	0.03
7	95	1	0.02
8	95	4	0.00
9	95	2	0.01
10	96	2	0.00
11	94	4	0.00
12	93	3	-0.02
13	93	3	-0.08
14	87	-2	-0.07

15	93	-2	-0.05
16	92	-2	-0.04

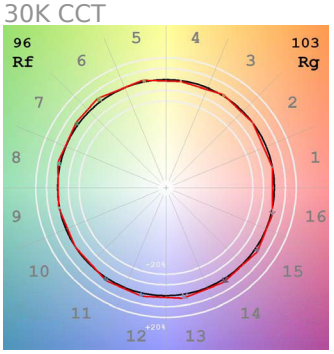
15	94	-1	-0.02
16	93	1	-0.04

27K CCT



Hue Bin	Rf	Chroma	Hue
1	97	-1	0.00
2	97	0	0.00
3	95	1	0.01
4	96	-2	-0.01
5	96	1	0.02
6	93	4	0.03
7	95	2	0.00
8	95	3	-0.02
9	97	1	0.00
10	98	1	0.01
11	94	3	0.02
12	93	4	0.00
13	93	3	-0.07
14	87	1	-0.08
15	94	2	-0.03

30K CCT

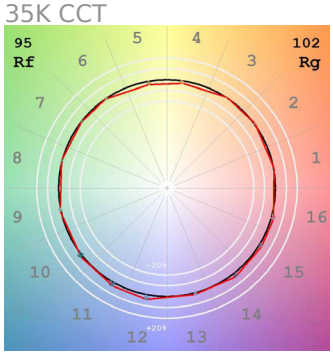


Hue Bin	Rf	Chroma	Hue
1	97	0	-0.01
2	98	0	0.00
3	96	1	0.02
4	96	-1	0.00
5	96	2	0.02
6	94	4	0.01
7	95	3	-0.01
8	95	2	-0.02
9	97	1	-0.01
10	98	0	0.00
11	95	2	0.02
12	94	3	0.01
13	95	3	-0.04
14	91	2	-0.06
15	94	3	-0.03

16	92	0	-0.05

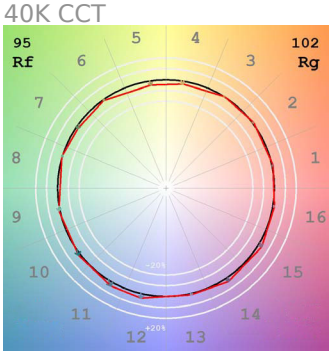
16	93	1	-0.05

35K CCT



Hue Bin	Rf	Chroma	Hue
1	97	0	0.00
2	97	1	-0.01
3	97	0	0.00
4	95	-2	-0.02
5	95	-3	0.00
6	96	0	0.02
7	96	0	0.02
8	98	1	0.00
9	96	1	0.03
10	93	1	0.04
11	92	3	0.05
12	93	4	0.01
13	96	1	-0.02
14	94	3	-0.02
15	91	2	-0.02

40K CCT

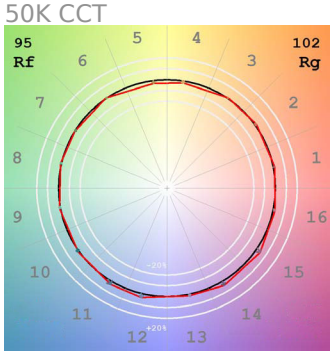


Hue Bin	Rf	Chroma	Hue
1	96	1	0.00
2	97	1	-0.01
3	96	1	-0.01
4	94	-2	-0.02
5	94	-4	-0.01
6	97	0	0.01
7	93	-2	0.03
8	97	1	0.01
9	94	1	0.04
10	93	1	0.04
11	92	3	0.05
12	93	4	0.01
13	97	1	-0.02
14	95	3	-0.02
15	91	4	-0.03

16	93	2	-0.04

16	95	1	-0.01

50K CCT



Hue Bin	Rf	Chroma	Hue
1	96	1	0.00
2	96	1	-0.01
3	96	1	-0.01
4	96	-2	-0.02
5	95	-2	0.00
6	97	1	0.01
7	95	0	0.02
8	97	1	0.01
9	96	1	0.02
10	95	1	0.03
11	93	3	0.05
12	94	3	0.01
13	96	1	-0.02
14	95	4	-0.01
15	91	4	-0.02

16	95	2	-0.01

KLUŚ Inspiring Solutions

General instructions
for an exemplary LED extrusion

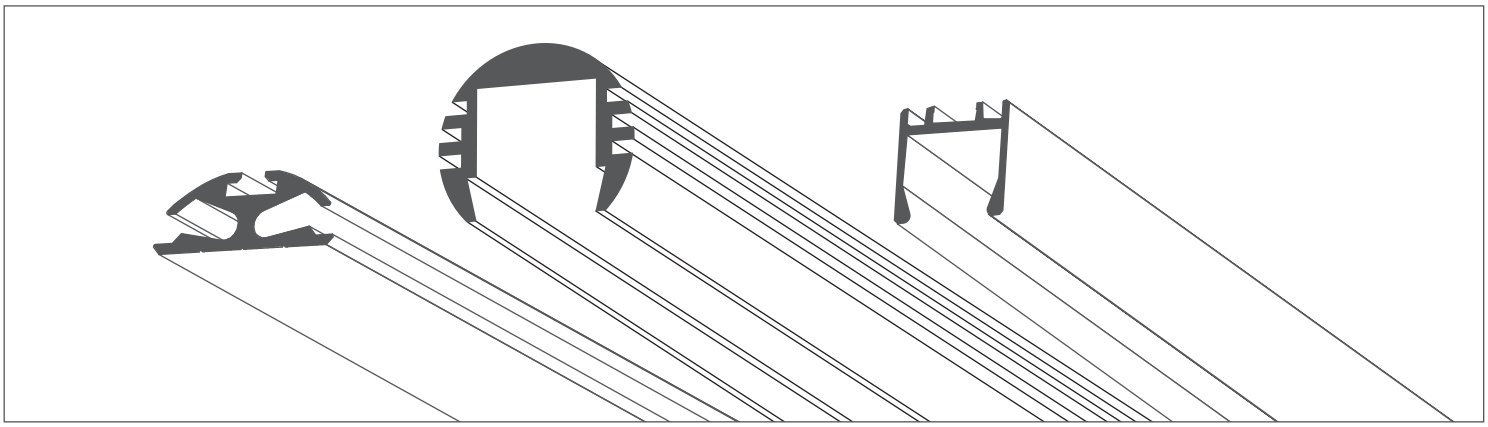


Table of contents

Cutting and drilling p.2

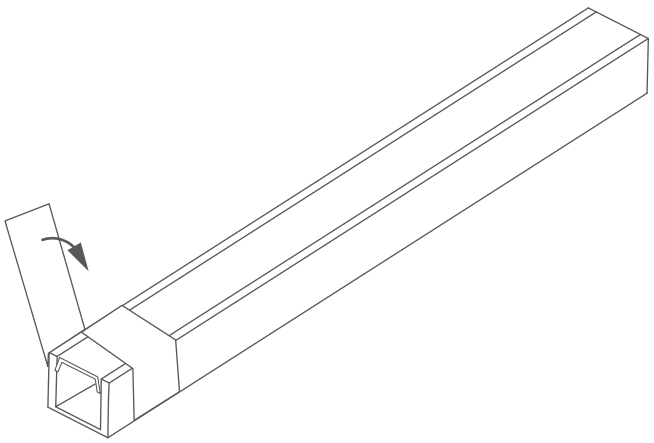
Adhering and connecting LED strips p.3

Attaching covers and end caps p.4

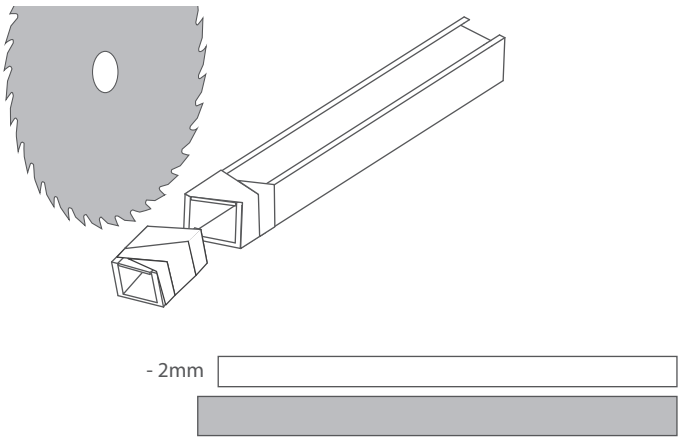
Sealing the extrusion p.5

Connecting extrusions using ZM connectors p.6

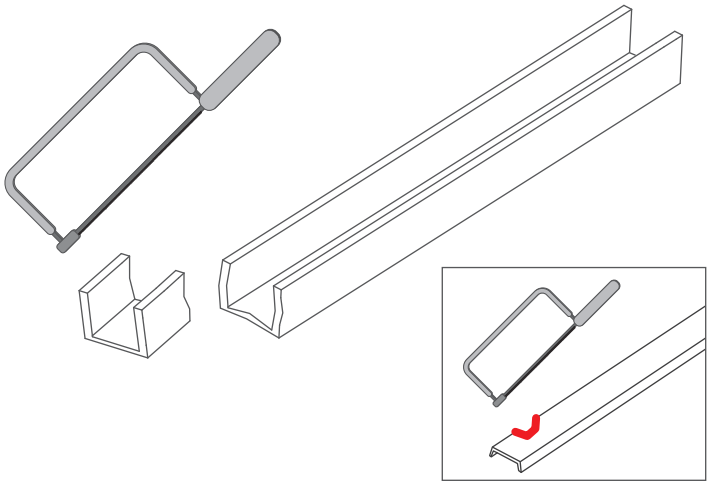
1. Before cutting the extrusion with the cover, secure the cutting point with self-adhesive tape.



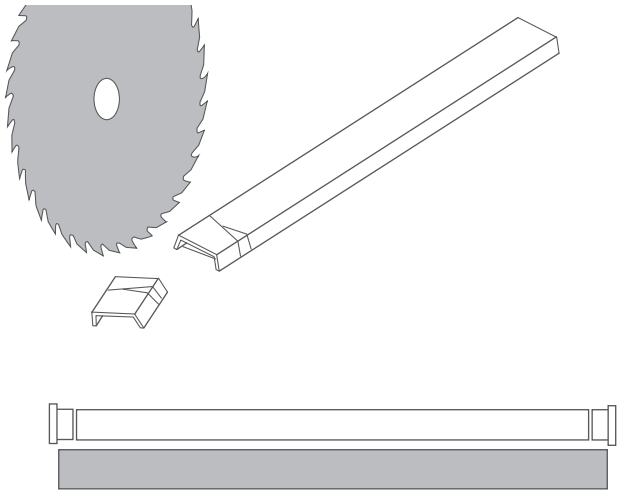
2. Use a mechanical saw to cut.
NOTE! It is recommended that the cover be cut 2 mm shorter than the extrusion to account for its thermal expansion.



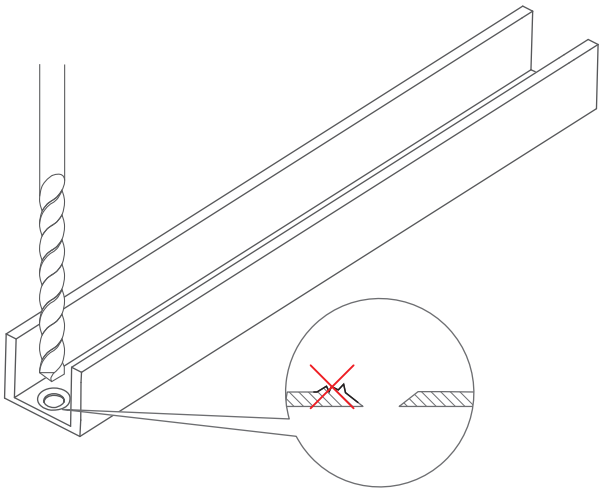
NOTE! Low precision cutting of the extrusion and cover can be done with a hand saw, however, uneven, jagged edges will remain, and the covers may break.



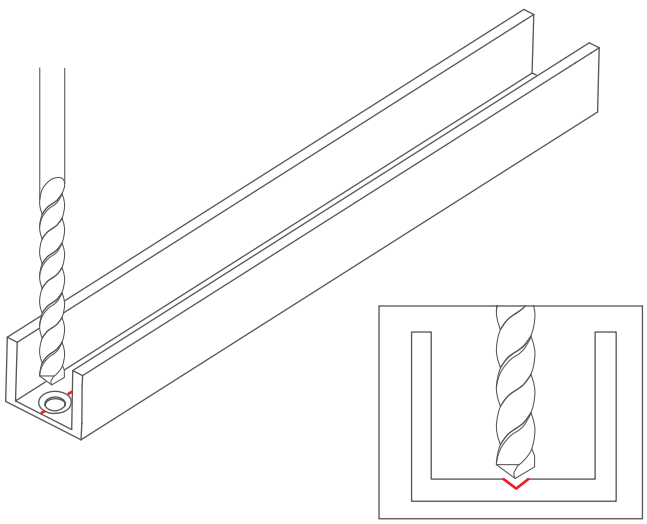
NOTE! For some extrusions there are dedicated end caps that require adequate shortening of the cover.



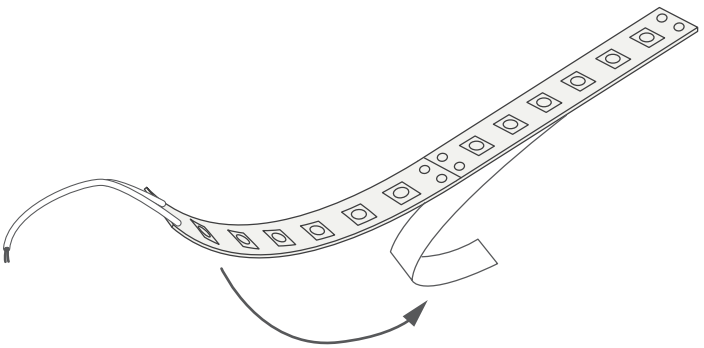
3. Drill a hole in the extrusion in the selected place.
NOTE! Make sure that there are no burrs around the hole after drilling as they can damage the LED strip or cable.



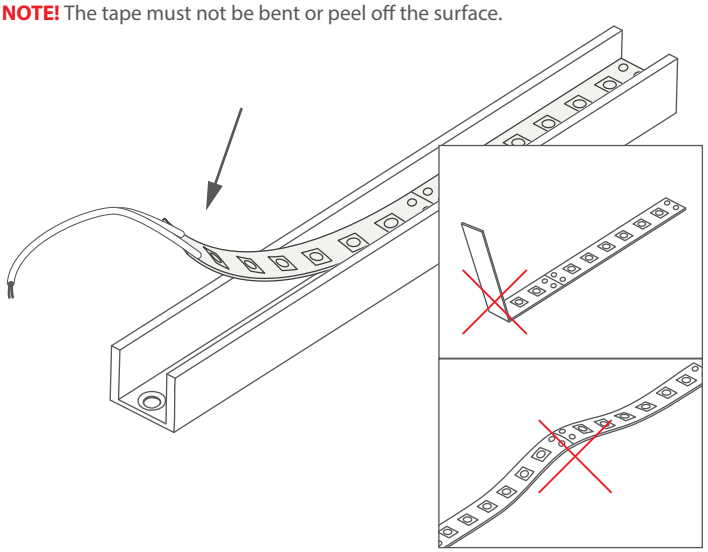
NOTE! Some extrusions feature one or more special grooves that make it easier to start drilling.



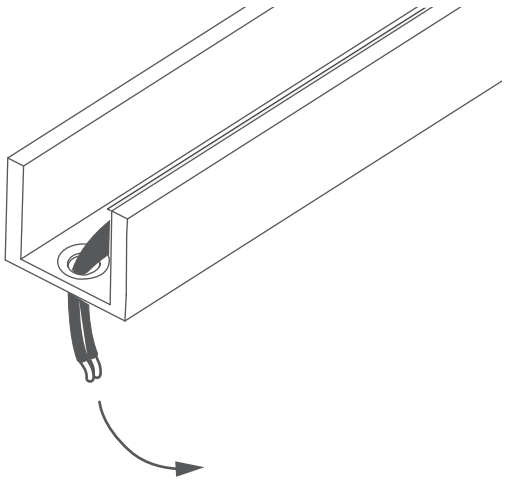
1. Remove the protective layer of the LED strip.



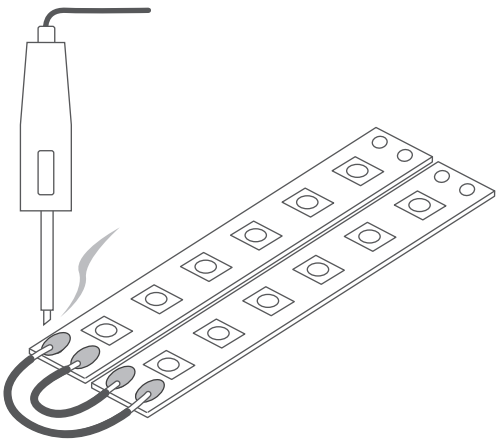
2. Attach the tape in the extrusion using the adhesive provided on the LED strip.
NOTE! The tape must not be bent or peel off the surface.



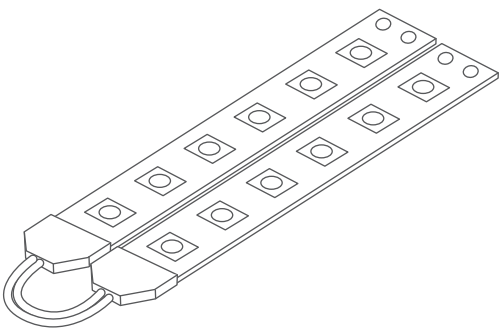
3. Lead the power cable through the drilled hole.



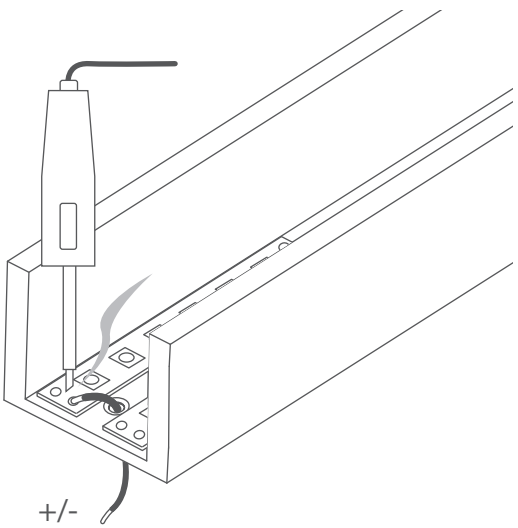
4. Connect the LED strips with wires by soldering.



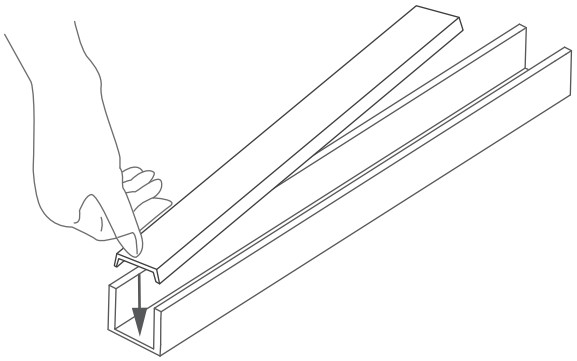
OPTIONALLY: The LED strips can also be connected using a system of LED strip connectors. More information at www.klusdesign.com



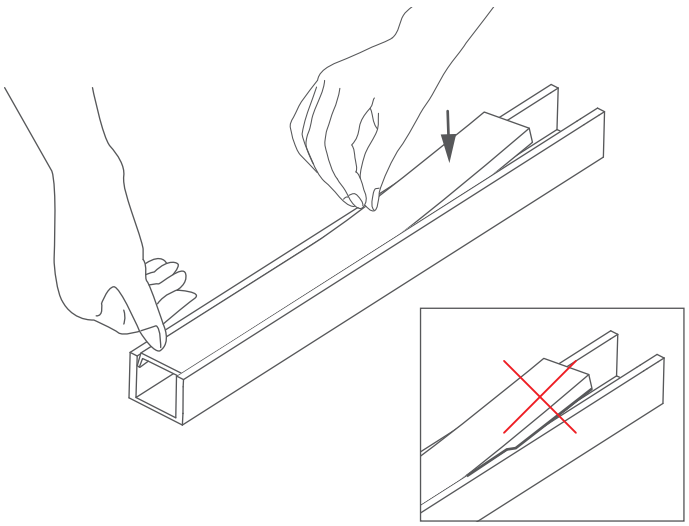
OPTIONALLY: The power cords can be led out from one pole of a given strip. This method is used to power suspended lighting fixtures.



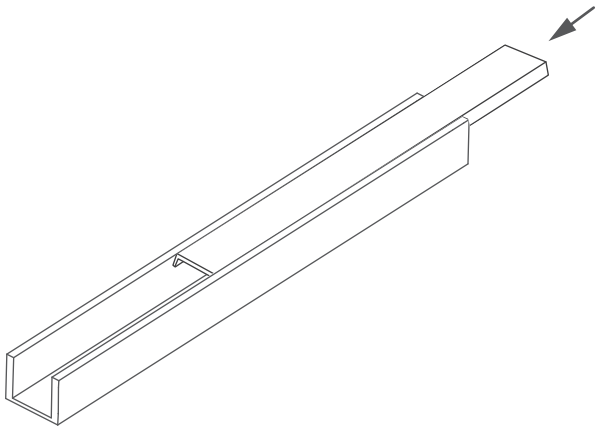
1. . Insert the tip of the cover into the extrusion.



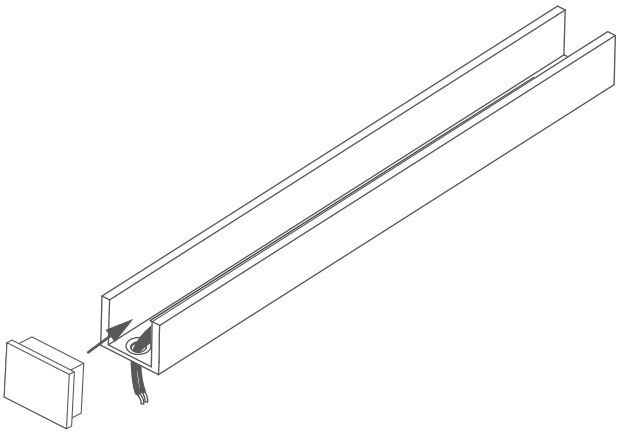
2. Press in the subsequent sections of the cover. Be careful not to bend or break the wings of the cover.



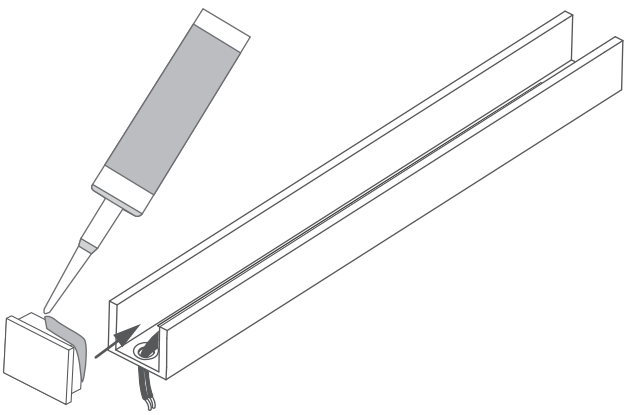
OPTIONALLY: Short sections, can also be inserted from the edge of the extrusion.



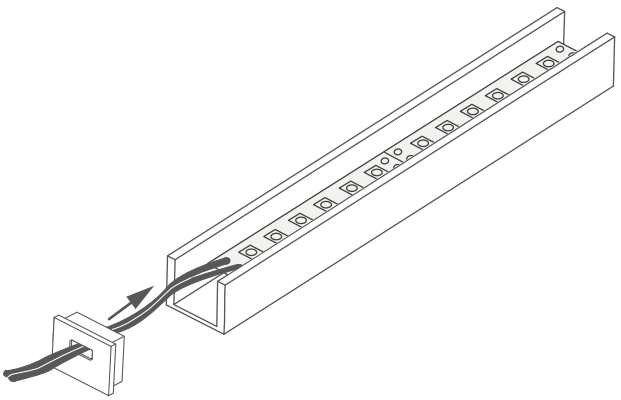
3. Insert an end cap into the edge of the extrusion. Individual extrusions have a shape that allows easy installation of dedicated end caps.
NOTE! Some end caps require an adequately shortened cover. This should be taken into account when cutting the extrusion and the cover.



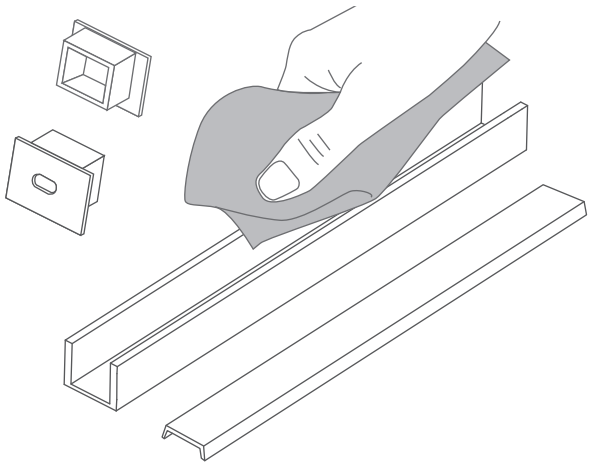
OPTIONALLY: It is recommended to attach the end caps to the extrusion with use of glue.



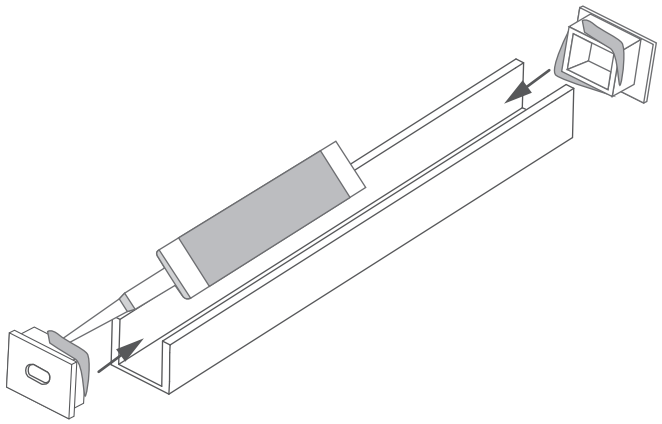
OPTIONALLY: Power cables can be run through the end caps in which case the extrusion does not need to be drilled through.



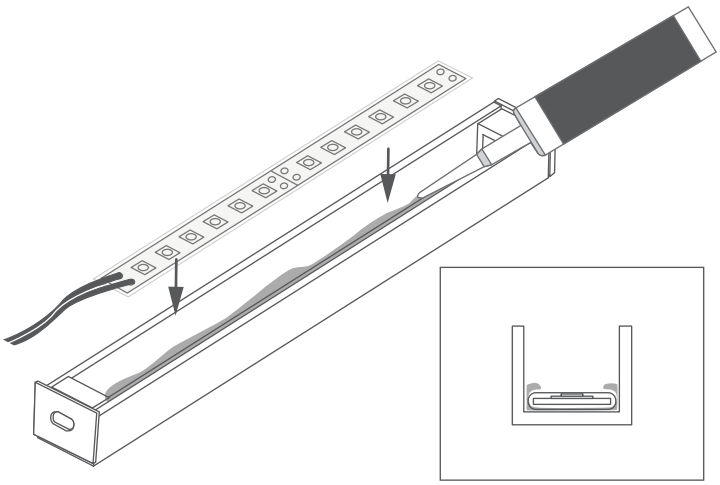
1. Clean dust and dirt from the extrusion and accessories.



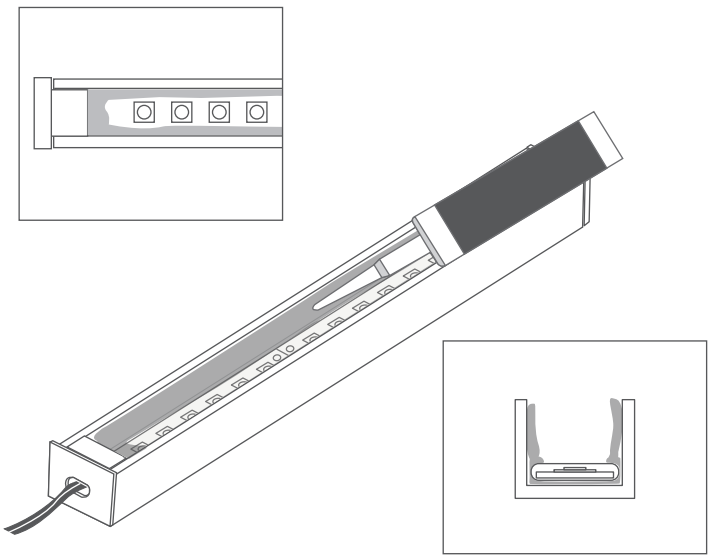
2. Attach the end caps with glue.



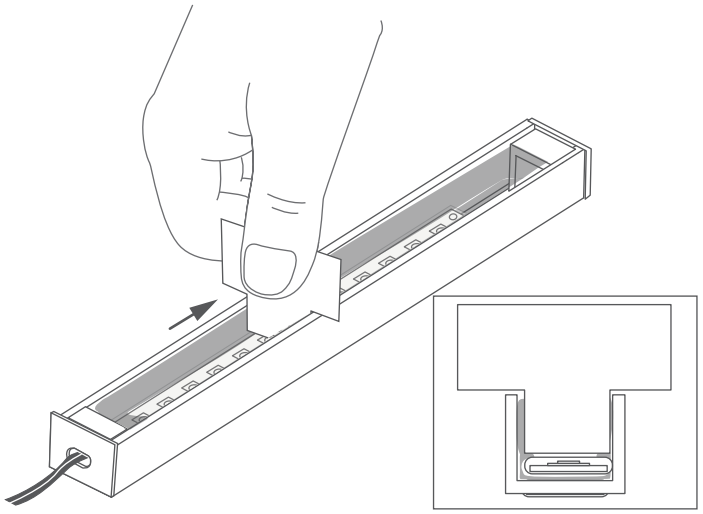
3. Apply a silicone layer to the bottom of the profile and embed the LED strip in it.
NOTE: The LED strip must have separate protection against moisture.
We recommend a silicone sleeve or heat shrink tubing if the strip in the sleeve does not fit into the extrusion.



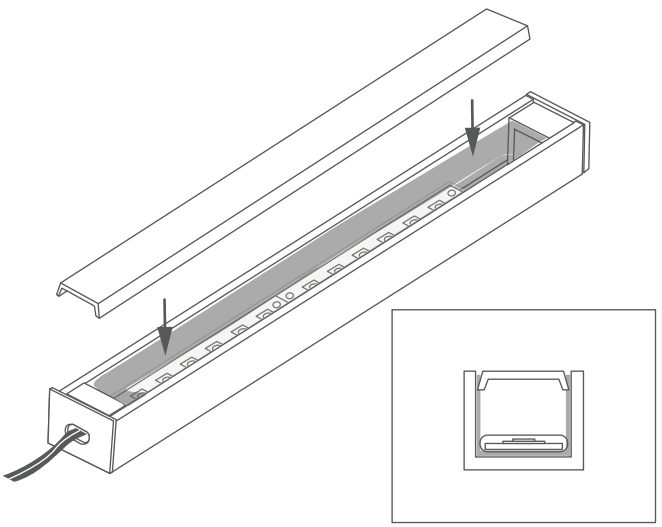
4. Apply a second layer of silicone on the extrusion walls and the end caps.



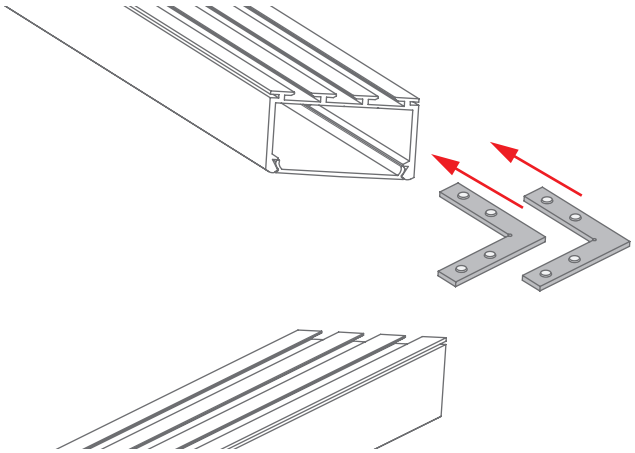
5. Remove the excess silicone with a rectangular tool (e.g. a piece of cardboard), taking care not to damage the tape. The silicone layer must be even and must not obscure the LEDs.



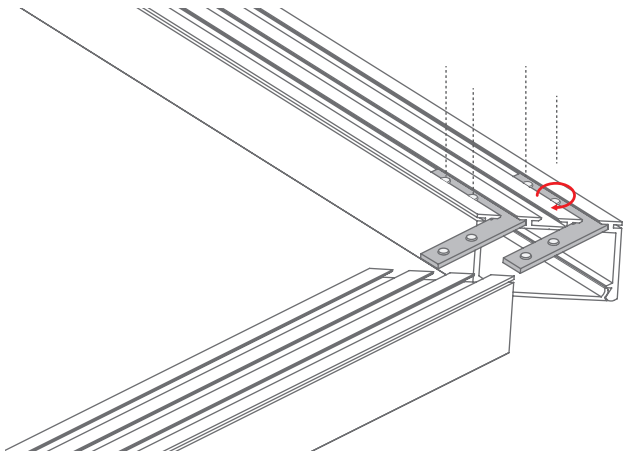
6. Insert the cover.



1. Slide the connectors into the small locks of the extrusion.



2. Tighten the two pressure screws in each connector with an Allen wrench.



3. Slide the other half of the extrusion onto the connectors and tighten the pressure screws with an Allen wrench.