



III.A.

690 Chesterfield Pkwy W • Chesterfield MO 63017-0760
Phone: 636-537-4000 • Fax 636-537-4798 • www.chesterfield.mo.us

Architectural Review Board Staff Report

Project Type: 2nd Amended Architectural Elevations

Meeting Date: January 12, 2017

From: Cecilia Hernandez
Project Planner

Cc: Aimee Nassif, Planning & Development Services Director

Location: 17485 North Outer 40 Road

Applicant: Frisella Properties, LLC

Description: **MPD Investments, Lot 1 (Metro Lighting) 2nd AAE:** Architectural Elevations and an Architect's Statement of Design for a 4.02 acre tract of land zoned "PI" Planned Industrial District located west of Boone's Crossing, and north of North Outer 40 Road (17U520148).

PROPOSAL SUMMARY

The request is for the addition of 36 color-changing LED up-lighting on a single-story building (as shown in the image below) within the MPD Investments development. These fixtures are already in place, and were placed without going through the necessary permit process. When a notice of violation was given, the lights were turned off in order to go through the necessary approval process.

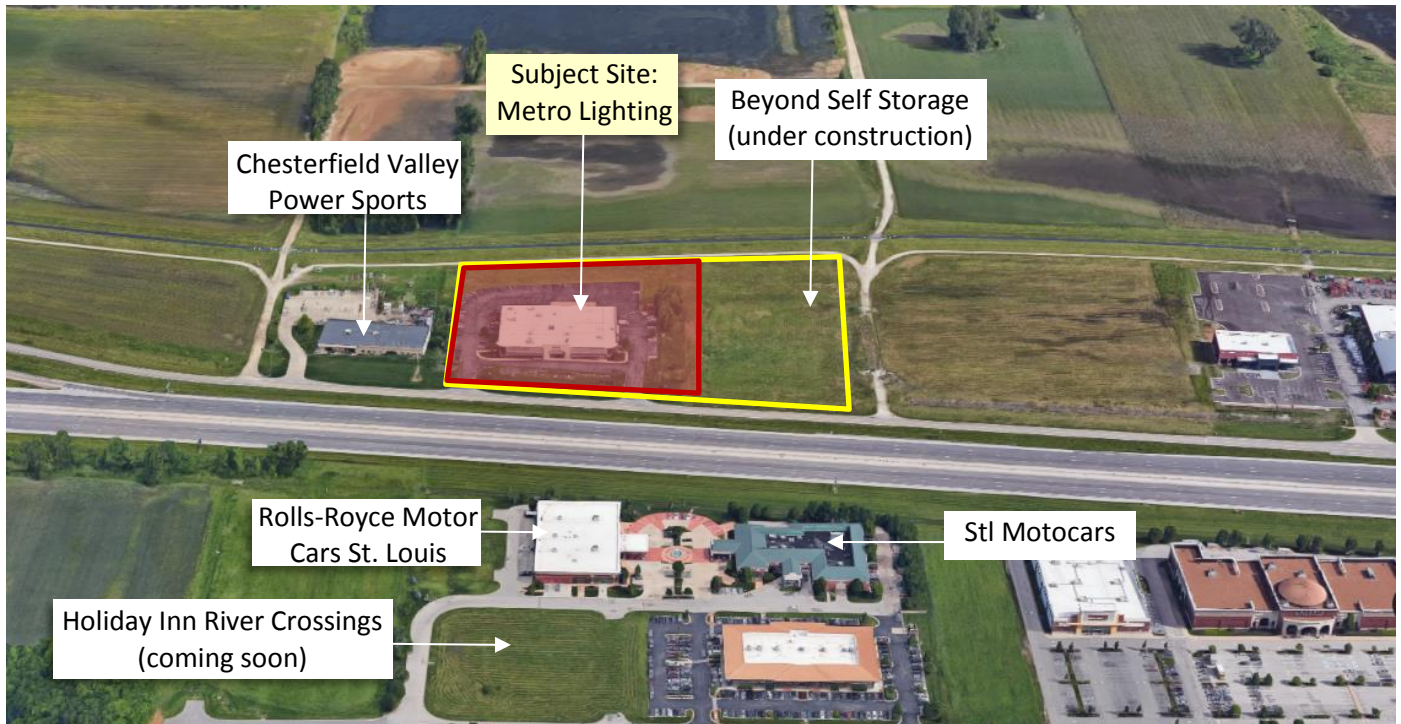
The applicant has submitted a statement of design which is attached as a part of the submittal packet. There are no other changes proposed in this application.



Daytime image



Evening Image



HISTORY OF SUBJECT SITE

According to St Louis County records, the building was built in 1989. Over the years there have been many amendments to elevations and to the site itself.

STAFF ANALYSIS

Unified Development Code (UDC):

The Unified Development Code requires that all lighting be fully shielded, cut off optics, however, there is a provision in the UDC (Sec. 31-04-03L.2) which allows the Planning Commission to approve decorative lighting fixtures when it can be proven that there will be no off-site glare light trespass, and the proposed fixtures will improve the appearance of the site. As identified by the applicant in the statement of design, lighting shield guards would be used to ensure that no light leakage is emitted into the sky.

The UDC also requires that the exterior building lighting be architecturally integrated with the building style, material, and color, specifying that the color of exterior lamps should be consistent with that on surrounding buildings. The proposed exterior building lighting is integrated with the architectural elements of the building by aligning with the solar panel awnings, and the central archway of the building, however, the various colors of the exterior lamps show no consistency with that on surrounding buildings. It should be noted, however, that this area has not been fully developed and thus may set a precedence for future development of this area.

The UDC provides guidelines for material and color practices which encourages the use of compatible colors, materials and detailing to adjacent buildings and properties. Due to the amount of lighting proposed, as well as this type of lighting having been recently denied by the City for the Holiday Inn Express at River Crossings (identified in the context map above), and given that neither the existing property to the west, nor the property under construction to the east has lighting

like this, this type of multi-colored up-lighting may not be consistent or compatible with adjacent properties.

Additionally, the UDC provides specific design requirements for the Chesterfield Valley which are to be applied to commercial and industrial developments. The applicable items are as follows:

1. *Utilize architectural elements from the front façade on the side and rear of the structure.*
2. *Utilize accent lighting and avoid flood lighting for façade and buildings facing I-64/US 40.*

The proposed lighting elements are only to be utilized on the front façade of the structure, and while the proposed architectural lighting elements are not flood lights, their architectural application on the building does flood the façade with color, as seen in the images on the following page.

Finally, it should be noted that per Section 31-04-03J.2 of the UDC, *Nonsecurity lighting, other than that used for special and infrequent occasions, shall not be on past approved hours of operation, if any, or 11:00P.M., whichever is later.* Therefore these nonsecurity lights would be required to be turned off at 11:00 P.M.

Comprehensive Plan:

The Chesterfield Valley Design Guidelines contained in Appendix A are intended to be applied to commercial and industrial development in Chesterfield Valley adjacent to North Outer 40 Road, among others. The guidelines specifically identify the image presented by development along I-64/US 40, as a particular concern.

This section identifies the following objectives:

1. *Facades of Buildings Along I-64/US 40 – Care should be taken to make sure that any portion of a building that can be viewed from I-64/US 40 convey the image of high-quality office or commercial development and should be equally uniform in materials and attractiveness as the primary façade of the building if it does not face I-64/US 40.*
2. *Lighting of Buildings Along I-64/US 40 – The facades of buildings facing I-64/US 40 should be lighted to provide an attractive image at night for individuals traveling along I-64/US 40. Accent lighting, as opposed to flood lighting should be used.*

The applicant is proposing a significant amount of façade accent lighting on the southern elevation, facing I-64/US 40. This accent lighting consists of projections of intense colored light across the façade (as seen in the images on the following page). The applicant has submitted additional images of the proposed accent lighting and the light fixture cut sheet with their packet.

Images of proposed colored LED up-lighting:



The applicant has also submitted a video of the changing lights which will be shown at the ARB meeting.

DEPARTMENTAL INPUT

Applications of accent lighting can be permitted if they are found to be architecturally integrated with the building design and harmonious with the surrounding area. As such, Staff is requesting a recommendation from the Architectural Review Board (ARB) on the Second Amended Architectural Elevations. All recommendations made by the ARB will be included in Staff's report to the Planning Commission.

MOTION

The following options are provided to the Architectural Review Board for consideration relative to this application:

- 1) "I move to forward the Amended Architectural Elevations for MPD Investments, Lot 1 (Metro Lighting), as presented, with a recommendation for approval (or denial) to the Planning Commission."
- 2) "I move to forward the Amended Architectural Elevations for MPD Investments, Lot 1 (Metro Lighting), to the Planning Commission with the following recommendations..."

Attachments

1. Architectural Review Packet Submittal

**STATEMENT
OF
DESIGN**



STATEMENT OF DESIGN FOR METRO CHESTERFIELD

The lighting project for METRO Lighting/METRO Electric Supply in Chesterfield was created and designed to enhance and beautify the front façade of our building in a sophisticated, high-tech manner, utilizing the latest in energy-saving LED technology and design. It also provides for safety and security for our customers and employees and those of the twenty-four hour veterinary clinic that shares the building.

The fixtures are manufactured by Color Kinetics, the leading manufacturer in the world of LED, color changing lighting technology and are sold throughout the world in a large part because of their unmatched innovations. The fixtures themselves can change color modes to include and display the entire color spectrum. Our plan is to have them display the entire color spectrum programmed over a long period of time which would not cause any spectacular and/or sudden changes to anyone viewing them from the highway or any other location. A zip-drive video (marked METRO) of the fixtures changing colors on the façade were included in the original packet and will be sent to you again. The specific fixtures that adorn the METRO Lighting building's façade have won dozens of awards and accolades from around the world for their innovation. These awards include their lighting of churches, monuments, government buildings and even city halls to name just a few.

The building's highway frontage is visible to thousands of vehicles passing each day. Obviously, we wanted a very tasteful look to reflect our professional image in the lighting industry and to the public. To avoid distraction to drivers, the LED's change color very gradually in the color-changing mode so that there is not a noticeable color change while traffic is driving by the building. To those driving by one evening it would seem that the building is lit in blue and on another evening it may seem to be lit up in green and so on. There is also a single-color mode where the LED's do not change colors. The fixtures themselves were chosen in part to physically fit unnoticed above our unique awning-style energy-saving solar panels. We have had dozens of compliments on how stylish the building looks with its lit façade and how nice the lighting enhances it. In the opinion of many and even discounting the hundreds of store signs in their many different colors, shapes and sizes that blare out on our streets and byways each evening, our façade is a very elegant way to adorn the front of our building, promote energy conservation and add sophistication, value and prestige to the building and to the City of Chesterfield.

The design has two distinct components: the small center arch located in the higher portion of the façade in the middle of the building, projects changing colors or, when programmed, one color across the arch itself. The second portion of the project projects color changing or, again, one color across each side of the center façade from the center façade to either end of the building. Both are simple but sophisticated ways to light a building in a classic manner.

The system is controlled and programmed by a plug-in controller within the building. It can be programmed to display colors to commemorate dozens of different events. To mention just a few:

Breast Cancer Awareness Month
Self-Care Women's Health

Christmas
Easter

National Birth Defects Prevention Month
Prostate Cancer Awareness
Cervical Awareness Month
American Heart Month
National Alcohol Awareness Month
National Birth Defects Prevention Month
Bullying Awareness
American Diabetes Month
National Cancer Prevention Month
National Men's Health Week

Memorial Day
Independence Day
Columbus Day
St. Patrick's Day
Labor Day
Cardinals
Blues
MIZZOU

Attached you will find color photos showing the front, sides and back of the building showing the building elevations. Also attached are aerials of the lighting at night showing how the lighting does not project past the height of the building. The fixtures are fully adjustable to angle properly on the façade so the light they emit does not project into the sky. We also purchased and installed an additional accessory, lighting shield guards, as a secondary assurance that there is no light leakage upward into the sky.

In addition, you will find included elevations on a number of different scenarios of the colors that would be included in our request. We are also including a video of the full color spectrum mode and the speed of the changing colors of this program.

We apologize for not realizing that a permit was required. There was no hard wiring and as high-tech as the fixtures are they simply screw into the building and plug into one another. We sincerely hope that you see the carbon benefits and the enhancements that this project brings to the building and to the community itself and allow for its approval. Thank you.

Sincerely,

William Frisella
President
METRO Lighting/METRO Electric Supply

ADJACENT PROPERTIES



(17501)
SURDYKE

(17485)
METRO

NORTH OUTER 40

I 67



Google Earth

(17501)
SURDYKE

(17485)
METRO

NORTH OUTER 40

I-64



Metro



New STORAGE UNIT
FACILITY
Adjacent
Property



from Metro
looking south



SURDYKE
MOTORSPORT

Adjacent
Property

Metro
Fast side



FIXTURE CUT SHEETS



**WARD &
BURTON, INC.**

architecturally oriented lighting

130 W Monroe Kirkwood, Missouri 63122
314-821-7800 (phone) 314-821-6226 (FAX)

www.wardandburton.com

To:			Job/Project Name:		
ST. LOUIS METRO ELECTRIC-ST. LOUIS 929 Hanley Industrial Ct Brentwood, MO 63144 PH: 314-963-8330 Fax 314-645-8958			METRO CHESTERFIELD COLOR KINETICS , MO Bid Date: 5/7/2015 SLSQ: JWH		
Qty	Type	Mfg	Description	Unit Price	Extd. Price
			SPECIFIER PRICING, 50% OFF OF DN		
36	A	PCK	423-000002-16 COLORGRAZE MX4 POWERCORE, RGBA, 4FT, 10°X60°, 2476 LUMENS	\$524.50	\$18,882.00
36	B	PCK	120-000081-03 GRAZE POWERCORE GLARE SHIELD, 4FT	\$16.00	\$576.00
3	C	PCK	108-000055-00 COLORGRAZE MX, LEADER CABLE, 50FT, UL	\$105.00	\$315.00
30	D	PCK	108-000057-00 JUMPER END-TO-END	\$21.00	\$630.00
3	E	PCK	106-000004-00 DATA ENABLER PRO	\$349.00	\$1,047.00
1	F	PCK	103-000019-00 IPLAYER 3	\$799.00	\$799.00
1	G	PCK	103-000020-00 8-TRIGGER CONTROLLER KEYAPD FOR IPLAYER 3	\$263.00	\$263.00
	NOTE	PCK	\$1000.00 FACTORY COMISSIONING CHARGE DUE AT PROJECT COMPLETION		
TOTAL:					\$22,512.00
MFG Code			TERMS		

*** Please reference QUOTE NUMBER when placing a PURCHASE ORDER.
*** Quotation is VOID if changed.

Philips SERVICE SMART

must be noted on your PO to insure the items ship in a timely manner.

PHILIPS LINES that can be COMBINED on (1) PO

- Chloride (CHLO) - DayBrite (DAYB) - Forecast (FORE) -
- Gardco (GARD) - Hadco (HADC) - Ledalite (LEDA) - Lightolier (LOL) -
- Lumec (LUME) - Optimum (OPTM) - Philips Consumer Luminaires (PCL) -
- Philips Controls (CONT) - Stonco (STON) - Thomas Decorative (THOD)

Philips requires UPS or Fed EXP account number for all orders under \$1,000.
to bill freight charges direct.

Failure to send an account number in with a PO will result in a \$100 handling FEE.

PHILIPS REQUIRING A SEPARATE PO -

- Bodine (BODN) - Color Kinetics (PCK) - Strand (STRA)

Do NOT combine with other PHILIPS lines.

NATIONAL ACCOUNT PO's will require the following information

- a copy of the fixture schedule and a copy of the title block including:
- job name and location; architect, name and location;
- lighting designer, name and location as it applies.

General Terms

1. UNIT PRICES are valid ONLY if the entire bill of material is ordered.
2. CHANGES to the quoted BOM will REQUIRE a REVISED QUOTE prior to an order being accepted.
3. JOB NAME and QUOTE NUMBER must be on all Purchase Orders.
4. Prices quoted are based on ONE SHIPMENT PER MANUFACTURER.
5. BALLAST WARRANTY is handled BY BALLAST MANUFACTURER.
6. STANDARD Manufacture Warranties apply.
7. All LEAD-TIMES are always APPROXIMATE. Order specific lead times are dependent on the factory production schedule and the receipt of an order with all proper clarifications, approvals and a release.
8. VOLTAGE must be verified by the distributor when placing the purchase order.
9. STANDARD factory FINISHES are quoted unless otherwise noted. Set Up charges apply to all CUSTOM COLORS, RAL and COLOR MATCH orders. FINISH must be specified at time of order.
10. FREIGHT terms will be noted in the body of the quote by factory. Pre shipment of ANCHOR BOLTS may result in ADDITIONAL freight charges.
11. Subject to manufacturer's published terms and conditions of sale/including freight

NOTE:

We have attempted to provide the most accurate quotation possible based on the information supplied to us at bid time, however, we cannot accept responsibility for the final outcome of the approval process.
Changes in part numbers, quantities or options required only made known by the approval process, may require this BOM be re-priced.

Printed: 12/09/15 10:23:47 Per: Jason Heisler Email:



ColorGraze MX4 Powercore

Exterior premium LED wall grazing fixtures with extended color range

PHILIPS





Date: _____ Type: _____

Firm Name: _____

Project: _____

ColorGraze MX4 Powercore

RGBW, 15° × 30° beam angle

Exterior premium LED wall grazing fixtures with extended color range

Intelligent, high-performance, RGBW fixtures offer an expanded palette of intensely saturated full-color light output in a variety of beam angles. Low-profile housing, connectorized cabling, a universal power input range, and direct line-voltage operation make fixtures easy to install and operate.

- Channels of neutral white LEDs seamlessly blend with channels of red, green, and blue LEDs. In addition to the millions of saturated colors achievable with RGB lighting fixtures, RGBW fixtures provide high-quality white light.

- Available in four standard lengths and five standard beam angles. Addressable in 305 mm (1 ft) segments for fine control of color-changing effects and light shows.
- Convenient push-and-click connectors let you easily and rapidly install Leader Cables and Jumper Cables.
- Accepts a power input range of 100 – 277 VAC for consistent installation in any location.

For detailed product information, please refer to the ColorGraze MX4 Powercore Family Product Guide at www.philipscolorkinetics.com/ls/rgb/colorgraze-mx4-powercore/

Specifications

Due to continuous improvements and innovations, specifications may change without notice.

Item	Specification	305 mm (1 ft)	610 mm (2 ft)	914 mm (3 ft)	1219 mm (4 ft)
	Lumens*	622	1244	1866	2488
Output	LED Channels	Red / Green / Blue / 4000 K			
	Lumen Maintenance†	70,000 hours L70 @ 25° C	65,000 hours L70 @ 50° C	75,000 hours L50 @ 25° C	70,000 hours L50 @ 50° C
	Input Voltage	100 – 277 VAC, auto-ranging, 50 / 60 Hz			
	Power Consumption (Max. at full output, steady state)	18.5 W	37 W	55.5 W	74 W
Control	Interface	Data Enabler Pro (DMX or Ethernet)			
	Control System	Philips Color Kinetics full range of controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, or third-party controllers			
	Dimensions (Height x Width x Depth)	69 x 305 x 71 mm (2.7 x 12 x 2.8 in)	69 x 610 x 71 mm (2.7 x 24 x 2.8 in)	69 x 914 x 71 mm (2.7 x 36 x 2.8 in)	69 x 1219 x 71 mm (2.7 x 48 x 2.8 in)
	Weight	1.0 kg (2.1 lb)	2.1 kg (4.6 lb)	3.2 kg (7.1 lb)	4.2 kg (9.3 lb)
	Housing	Extruded anodized aluminum			
	Lens	Clear polycarbonate			
Physical	Fixture Connectors	Integral male / female waterproof connectors			
	Mounting	Multi-positional, constant torque locking hinges			
	Temperature	-40° – 50° C (-40° – 122° F) Operating -20° – 50° C (-4° – 122° F) Startup -40° – 80° C (-40° – 176° F) Storage			
	Humidity	0 – 95%, non-condensing			
	Fixture Run Lengths	To calculate fixture run lengths and total power consumption for your specific installation, download the Configuration Calculator from www.philipscolorkinetics.com/support/install_tool/			
Certification and Safety	Certification	UL / cUL, FCC Class A, CE, PSE, C-Tick, CQC			
	Environment	Dry / Damp / Wet Location, IP66			

* 305 mm (1 ft) lumen output measurements comply with IES LM-79-08 testing procedures. 610 mm (2 ft), 914 mm (3 ft), and 1219 mm (4 ft) measurements are estimated based on the 305 mm (1 ft) measurements.

† L70 = 70% lumen maintenance (when light output drops below 70% of initial output). L50 = 50% lumen maintenance (when light output drops below 50% of initial output). Ambient luminaire temperatures specified. Lumen maintenance calculations are based on lifetime prediction graphs supplied by LED source manufacturers. Calculations for white-light LED fixtures are based on measurements that comply with IES LM-80-08 testing procedures. Refer to www.philipscolorkinetics.com/support/appnotes/lm-80-08.pdf for more information.



PHILIPS

Fixtures

Item	Beam Angle	Item Number	Philips 12NC
ColorGraze MX4 Powercore RGBW 305 mm (1 ft)	9° x 9°	423-000001-00	910503704681
	10° x 60°	423-000001-01	910503704682
	15° x 30°	423-000001-02	910503704683
	30° x 60°	423-000001-03	910503704684
	60° x 30°	423-000001-04	910503704685
	9° x 9°	423-000001-05	910503704686
	10° x 60°	423-000001-06	910503704687
	15° x 30°	423-000001-07	910503704688
	30° x 60°	423-000001-08	910503704689
ColorGraze MX4 Powercore RGBW 610 mm (2 ft)	60° x 30°	423-000001-09	910503704690
	9° x 9°	423-000001-10	910503704691
	10° x 60°	423-000001-11	910503704692
	15° x 30°	423-000001-12	910503704693
	30° x 60°	423-000001-13	910503704694
	60° x 30°	423-000001-14	910503704695
	9° x 9°	423-000001-15	910503704696
	10° x 60°	423-000001-16	910503704697
	15° x 30°	423-000001-17	910503704698
ColorGraze MX4 Powercore RGBW 1219 mm (4 ft)	30° x 60°	423-000001-18	910503704699
	60° x 30°	423-000001-19	910503704701

Use Item Number when ordering in North America.

Photometrics

ColorGraze MX Powercore
RGBW, 1 ft (305 mm), 15° x 30° beam angle

Polar Candela Distribution

Cd: 0	90°	0	25	45	70	90
583	0	3403	3403	3403	3403	3403
1,167	5	2530	2591	2795	3074	3183
1,750	15	435	529	776	1335	1648
2,333	25	55	71	119	280	418
2,917	35	14	16	23	46	64
	45	6	7	9	13	15
	55	4	4	5	7	7
	65	3	3	3	4	4
	75	1	1	1	2	2
	85	1	1	0	0	0
	90	0	0	0	0	0

VA: 0° 10° 20° 30° 40°
■ - 0° H ■ - 90° H

Illuminance at Distance

Distance	Illuminance (fc)	Vertical Spread	Horizontal Spread
0.4 ft	213 fc	1.2 ft	2.1 ft
1 ft	54 fc	2.4 ft	4.1 ft
2 ft	24 fc	3.6 ft	6.2 ft
3 ft	13 fc	4.7 ft	6.2 ft
4 ft	9 fc	5.9 ft	10.3 ft
6 ft	6 fc	7.1 ft	12.3 ft

0.4 ft (17.8 m) c maximum distance
■ Vert. Spread: 16.8°
■ Horiz. Spread: 28.8°

Accessories and Data Enabler Pro

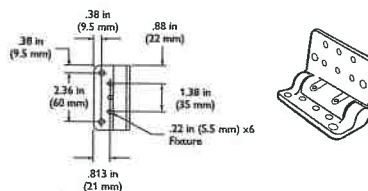
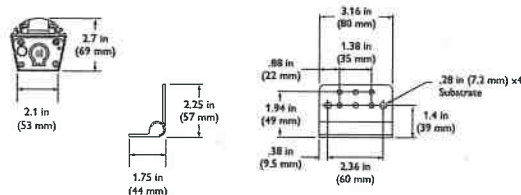
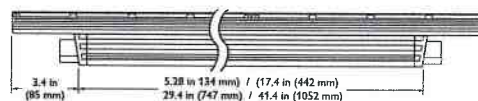
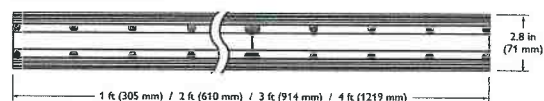
Item	Type	Size	Item Number	Philips 12NC
Leader Cable with Terminator	UL / cUL	3.0 m (10 ft)	108-000055-03	910503704066
	CE / PSE	15.2 m (50 ft)	108-000055-00	910503703137
		3.0 m (10 ft)	108-000055-07	910503705065
	End-to-End	15.2 m (50 ft)	108-000055-06	910503705064
		305 mm (1 ft)	108-000057-00	910503703139
	Jumper Cable	UL / cUL	1.5 m (5 ft)	108-000057-03
CE / PSE		3.0 m (10 ft)	108-000057-06	910503704079
		End-to-End	3.0 m (10 ft)	108-000057-09
Glare Shield	CE / PSE	1 ft (305 mm)	108-000057-04	910503704077
		5 ft (1.5 m)	108-000057-07	910503704080
	10 ft (3.0 m)	108-000057-10	910503704083	
	305 mm (1 ft)	120-000081-00	910503700745	
	610 mm (2 ft)	120-000081-01	910503700746	
Additional Terminators	Quantity 10	914 mm (3 ft)	120-000081-02	910503700747
		1219 mm (4 ft)	120-000081-03	910503700748
		Quantity 10	120-000157-00	910503703142
Additional Hinge	Quantity 1	120-000098-00	910503700772	
Data Enabler Pro	3/4 in / 1/2 in NPT (U.S. trade size conduit)	106-000004-00	910503701210	
	PG21 / PG13 (metric size conduit)	106-000004-01	910503701211	

Use Item Number when ordering in North America.

LED Lumens Efficacy
 RGBW 621 34.4

For lux multiply fc by 10.7

Dimensions



Philips Color Kinetics
 3 Burlington Woods Drive
 Burlington, Massachusetts 01803 USA
 Tel 888.385.5742
 Tel 617.423.9999
 Fax 617.423.9998
www.philipscolorkinetics.com

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ColorGrazе MX4 Powercore

Exterior premium LED wall grazing fixtures with extended color range

The new ColorGrazе MX4 Powercore family extends the range and flexibility of the popular line of high-performance, full-color LED grazing fixtures from Philips Color Kinetics. These intelligent RGBW or RGBA fixtures offer an expanded palette of intensely saturated full-color light output in a variety of beam angles. Low-profile housing, connectorized cabling, a universal power input range, and direct line-voltage operation make ColorGrazе MX4 Powercore fixtures easy to install and operate. Custom lengths, LED channels, beam angles, housing colors, and power consumption levels produce hundreds of possible configurations and light distribution patterns to support virtually any façade or surface illumination application.

- Tailor light output to specific applications — Available in four standard lengths, with standard 9° x 9°, 10° x 60°, 15° x 30°, 30° x 60° and 60° x 30° beam angles. Individually addressable 305 mm (1 ft) segments accommodate fine control of color-changing effects and pre-programmed light shows.
- High-performance illumination and beam quality — ColorGrazе MX4 Powercore delivers well over 500 lumens of color-changing light per foot. Superior beam quality offers striation-free saturation for several feet from fixture placement with no visible light scalloping between fixtures.
- Flexible color control — Channels of amber or neutral white LEDs seamlessly blend with channels of red, green, and blue LEDs to produce a significantly expanded color palette. In addition to the millions of saturated colors achievable with standard RGB lighting fixtures, ColorGrazе MX4 Powercore RGBW fixtures produce an extended range of subtle pastel colors, while RGBA fixtures create vibrant golds and intense yellows that are more difficult to obtain on standard RGB fixtures.
- Integrates Powercore technology — Powercore technology rapidly, efficiently, and accurately controls power output to fixtures directly from line voltage. The Philips Data Enabler Pro merges line voltage with control and delivers them to the fixture over a single standard cable, dramatically simplifying installation and lowering total system cost.
- Versatile installation options — Convenient push-and-click connectors let you easily and rapidly install Leader Cables and Jumper Cables. Multiple cable lengths support a variety of layouts. Constant torque locking hinges offer simple and consistent position control from various angles. The low-profile aluminum housing accommodates placement within most architectural niches.
- Superior color consistency and accuracy — Optibin, an advanced binning algorithm, sets a new standard for the color consistency and uniformity of LED sources used in manufacturing. Chromasync technology achieves unprecedented consistency of light performance and color precision across multiple fixtures in an installation, while maximizing intensity and color range.
- Industry-leading controls — Fixtures work seamlessly with the complete Philips line of controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, as well as third-party controllers.
- Universal power input range — Fixtures accept a universal power input range of 100 – 277 VAC for consistent installation anywhere in the world.
- Custom configurations for special applications — Create custom configurations to support special applications by exchanging the LED sources in any channel. Options include white LED color temperatures ranging from 2700 K to 6500 K, Blue, Green, Amber, and Red. 60° x 60° and 90° x 60° beam angles also available. See the ColorGrazе MX4 Powercore Ordering Information specification sheet for complete details.



High performance + easy installation

With flexible mounting options, multiple fixture length and beam angle options, integrated Powercore technology, and a discreet low-profile housing rated for use in outdoor locations,

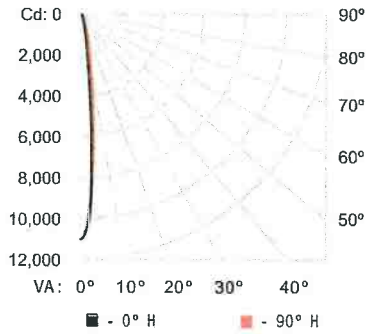
Photometrics / ColorGrazе MX4 Powercore, RGBW

Photometric data is based on test results from an independent NIST traceable testing lab. IES data is available at www.philipscolorkinetics.com/support/ies.

1 ft (305 mm), 9° x 9° beam angle

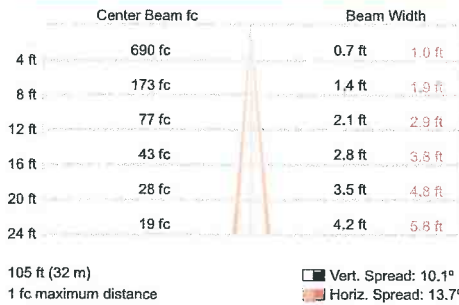
LED	Lumens	Efficacy
RGBW	655	36.3

Polar Candela Distribution



	0	25	45	70	90
0	11041	11041	11041	11041	11041
5	4240	4488	5386	6507	6909
15	272	324	383	430	472
25	39	44	53	52	49
35	13	11	13	15	17
45	5	5	6	7	7
55	3	2	3	4	4
65	2	2	2	2	2
75	1	1	1	1	1
85	1	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

RCC %	Effective Floor Cavity Reflectance: 20%														
	80	70	50	30	10	0	80	70	50	30	10	0			
RW %	70	50	30	0	70	50	30	0	50	30	20	50	30	20	0
RCR	0	119	119	119	119	116	116	116	100	111	111	111	106	106	102
	1	116	114	112	111	113	112	110	98	108	107	106	104	103	101
	2	113	110	107	105	111	108	106	97	105	103	102	102	101	100
	3	110	107	104	101	109	105	103	95	103	101	99	101	99	97
	4	108	104	101	98	107	103	100	94	101	98	97	98	97	96
	5	106	101	98	96	105	101	98	93	99	96	95	98	95	94
	6	104	99	96	94	103	99	96	92	97	95	93	96	94	93
	7	102	97	94	92	101	97	94	90	95	93	91	95	93	91
	8	101	96	93	91	100	95	92	89	94	91	90	93	91	90
	9	99	94	91	89	99	94	91	88	93	90	89	92	90	88
	10	98	93	90	88	97	93	90	87	92	90	88	91	89	87

Zonal Lumen

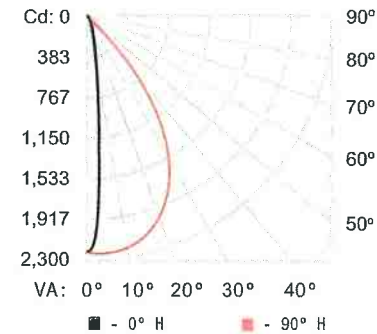
Zone	Lumens	% Fixture
0 - 60	651.5	99.4 %
60 - 90	3.3	0.5 %
0 - 90	654.8	99.9 %

For lux multiply fc by 10.7

1 ft (305 mm), 10° x 60° beam angle

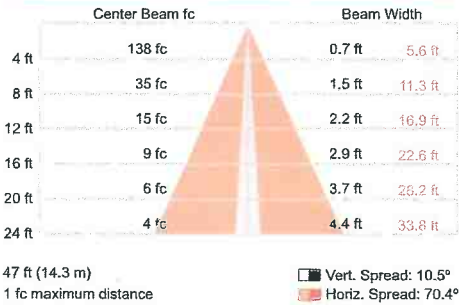
LED	Lumens	Efficacy
RGBW	618	34.9

Polar Candela Distribution



	0	25	45	70	90
0	2219	2219	2219	2219	2219
5	1315	1405	1718	2122	2229
15	152	158	329	421	426
25	22	31	59	121	126
35	3	5	28	101	104
45	1	1	9	50	50
55	3	2	5	16	16
65	2	2	2	6	25
75	1	1	1	2	9
85	1	1	1	1	1
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

RCC %	Effective Floor Cavity Reflectance: 20%														
	80	70	50	30	10	0	80	70	50	30	10	0			
RW %	70	50	30	0	70	50	30	0	50	30	20	50	30	20	0
RCR	0	119	119	119	116	116	116	100	111	111	111	106	106	102	102
	1	114	111	109	107	111	109	107	94	105	103	102	101	100	99
	2	108	104	100	97	106	102	99	89	99	96	94	96	94	92
	3	103	97	93	89	102	96	92	84	93	90	87	91	88	86
	4	99	92	87	83	97	91	86	79	88	84	81	86	83	80
	5	94	87	81	77	93	86	81	75	84	80	76	82	78	75
	6	90	82	77	73	89	81	76	71	80	75	72	78	74	71
	7	86	78	72	69	85	77	72	67	76	71	68	75	71	67
	8	83	74	69	65	82	74	68	64	73	68	65	72	67	64
	9	80	71	65	62	79	70	65	61	69	65	62	69	64	61
	10	77	68	63	59	76	67	62	58	67	62	59	66	61	58

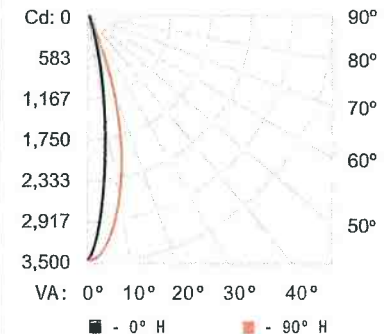
Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	609.5	98.5 %
60 - 90	8.7	1.4 %
0 - 90	618.2	99.9 %

1 ft (305 mm), 15° x 30° beam angle

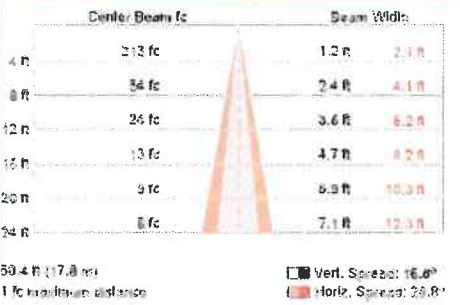
LED	Lumens	Efficacy
RGBW	621	34.4

Polar Candela Distribution



	0	25	45	70	90
0	3403	3403	3403	3403	3403
5	2530	2591	2795	3074	3183
15	435	529	776	1335	1648
25	55	71	119	280	418
35	14	16	23	46	64
45	6	7	9	13	15
55	4	4	5	7	7
65	3	3	3	4	4
75	1	1	1	2	2
85	1	1	0	0	0
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

RCC %	Effective Floor Cavity Reflectance: 20%														
	80	70	50	30	10	0	80	70	50	30	10	0			
RW %	70	50	30	0	70	50	30	0	50	30	20	50	30	20	0
RCR	0	119	119	119	116	116	116	100	111	111	111	106	106	102	102
	1	115	113	111	109	113	111	109	97	107	105	104	103	102	101
	2	111	107	104	102	109	106	103	94	103	100	99	98	97	96
	3	108	103	99	96	106	102	98	91	99	96	94	97	95	93
	4	104	99	95	92	103	98	94	86	96	93	90	94	91	88
	5	101	95	91	88	100	94	91	85	93	90	87	91	88	85
	6	98	92	88	85	97	91	88	83	90	87	84	88	85	82
	7	96	89	85	82	95	89	85	81	88	84	82	87	83	81
	8	93	87	83	80	92	86	82	79	85	82	79	84	81	79
	9	91	84	80	77	90	84	80	77	83	80	77	82	79	77
	10	89	82	78	75	88	82	78	75	81	77	75	80	77	75

Zonal Lumen

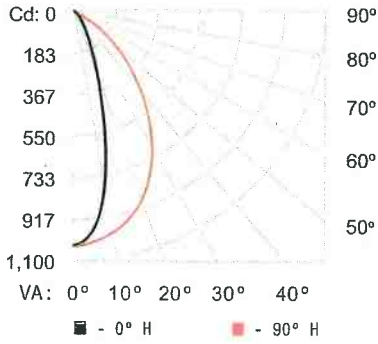
Zone	Lumens	% Fixture
0 - 60	616.5	99.1 %
60 - 90	4.5	0.6 %
0 - 90	621.0	99.9 %

Photometrics / ColorGraze MX4 Powercore, RGBW, continued

1 ft (305 mm), 30° x 60° beam angle

LED	Lumens	Efficacy
RGBW	627	34.9

Polar Candela Distribution

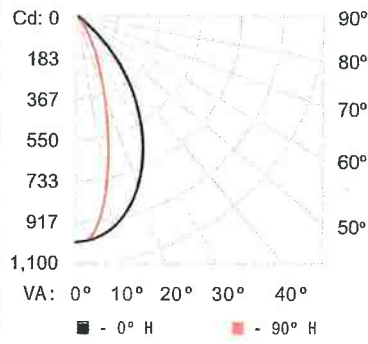


	0	25	45	70	90
0	1000	1030	1030	1030	1000
5	956	956	900	801	646
15	843	861	849	756	609
25	709	845	861	790	721
35	526	86	72	593	530
45	315	16	22	411	279
55	19	16	11	233	164
65	6	6	6	11	29
75	2	2	2	4	7
85	1	1	1	1	1
90	1	1	0	0	0

1 ft (305 mm), 60° x 30° beam angle

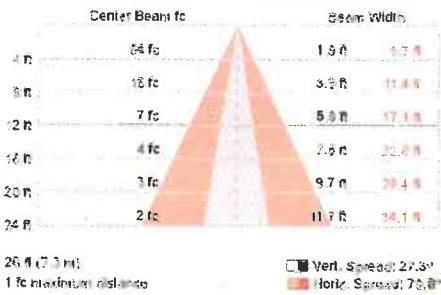
LED	Lumens	Efficacy
RGBW	634	34.8

Polar Candela Distribution

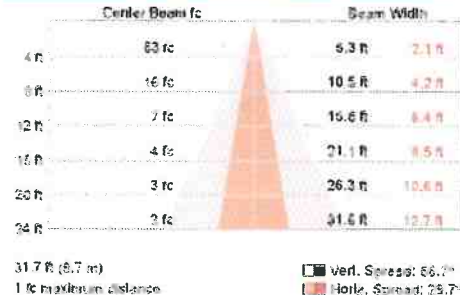


	0	25	45	70	90
0	1007	1007	1007	1007	1007
5	993	993	979	956	949
15	898	911	873	843	809
25	702	861	893	846	846
35	493	216	20	46	35
45	171	70	38	16	18
55	51	22	11	10	10
65	13	6	6	6	6
75	4	2	2	2	3
85	2	1	1	0	0
90	1	1	0	0	0

Illuminance at Distance



Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80	70	50	30	10	0												
RW %:	70	50	30	0	50	30	20	50	30	20	0							
RCR:	0	119	119	119	116	116	100	111	111	111	108	106	106	102	102	102	100	
1	113	110	108	105	111	108	106	94	104	102	101	100	99	98	97	96	95	93
2	107	102	98	95	105	101	97	87	97	94	91	94	92	90	92	89	88	86
3	102	95	90	86	100	94	89	81	91	87	84	89	85	83	86	84	81	80
4	97	89	83	79	95	88	82	75	86	81	77	84	80	77	82	78	76	74
5	92	83	77	73	90	82	77	70	80	76	72	79	75	71	77	74	71	69
6	87	78	72	68	86	77	72	66	76	71	67	74	70	67	73	69	66	65
7	83	74	68	63	82	73	67	62	72	67	63	71	66	63	69	65	62	61
8	79	70	64	60	78	69	63	58	68	63	59	67	62	59	66	62	59	57
9	76	66	60	56	74	65	60	55	65	59	56	64	59	56	63	59	56	54
10	72	63	57	53	71	62	57	52	61	56	53	61	56	53	60	56	53	51

Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80	70	50	30	10	0												
RW %:	70	50	30	0	50	30	20	50	30	20	0							
RCR:	0	119	119	119	116	116	100	111	111	111	106	106	106	102	102	102	100	
1	113	110	108	106	111	108	106	94	104	102	101	100	99	98	97	96	95	93
2	108	103	98	95	105	101	97	87	96	94	92	95	92	90	92	89	88	86
3	102	95	90	86	100	94	89	81	91	87	84	89	85	83	87	84	82	80
4	97	89	83	79	95	88	83	76	86	81	78	84	80	77	82	78	76	74
5	92	84	78	73	90	83	77	71	81	76	72	79	75	72	78	74	71	69
6	87	78	72	68	86	78	72	66	76	71	67	75	70	67	73	70	67	65
7	83	74	68	64	82	73	68	62	72	67	63	71	66	63	70	66	63	61
8	79	70	64	60	78	69	64	58	68	63	59	67	62	59	66	62	59	57
9	76	66	60	56	75	66	60	55	65	60	56	64	59	56	63	59	56	54
10	73	63	57	53	71	62	57	52	62	57	53	61	56	53	60	56	53	51

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	612.7	97.6 %
60 - 90	14.5	2.3 %
0 - 90	627.2	99.9 %

For lux multiply fc by 10.7

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	629.5	97.6 %
60 - 90	13.7	2.2 %
0 - 90	643.2	100.0 %

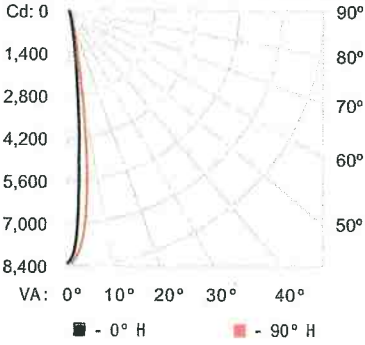
Photometrics / ColorGraze MX4 Powercore, RGBA

Photometric data is based on test results from an independent NIST traceable testing lab. IES data is available at www.philipscolorkinetics.com/support/ies.

1 ft (305 mm), 9° x 9° beam angle

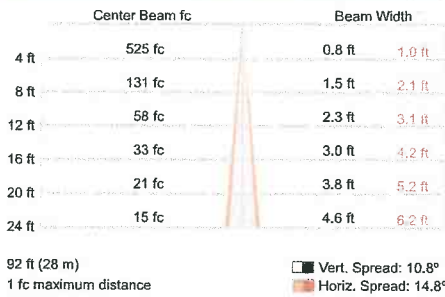
LED	Lumens	Efficacy
RGBA	566	31.2

Polar Candela Distribution



	0	25	45	70	90
0	8396	8396	8396	8396	8396
5	4460	4934	5751	6445	6472
15	427	444	481	522	519
25	47	51	69	72	65
35	13	12	15	17	19
45	5	5	6	7	8
55	3	3	3	4	4
65	2	2	2	2	2
75	1	1	1	1	1
85	1	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

		Effective Floor Cavity Reflectance: 20%									
RCC %:	80	70	50	30	10	0	0	0	0	0	0
RW %:	20	50	30	0	50	30	0	50	30	20	0
RCR:	0	119	119	119	119	119	119	119	119	119	119
1	116	114	112	111	110	109	108	107	106	105	104
2	113	110	107	105	103	102	101	100	99	98	97
3	110	108	103	101	100	99	97	95	93	91	89
4	108	103	100	98	101	99	96	93	91	89	87
5	106	101	98	95	104	100	97	93	89	85	83
6	104	99	96	93	103	98	95	91	87	83	81
7	102	97	94	92	101	97	94	91	87	83	81
8	100	95	92	90	100	95	92	89	85	81	79
9	99	94	91	89	98	94	91	88	84	80	78
10	97	93	90	88	97	93	90	87	83	79	77

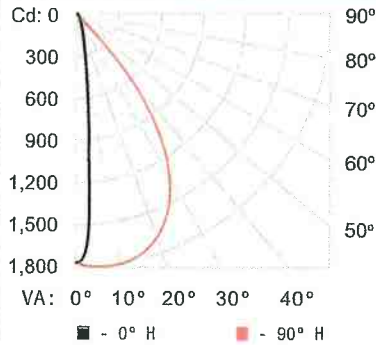
Zonal Lumen

Zone	Lumens	% Fixture
0 - 0°	562.4	99.4 %
0° - 90°	3.1	0.6 %
0 - 90°	565.5	99.9 %

1 ft (305 mm), 10° x 60° beam angle

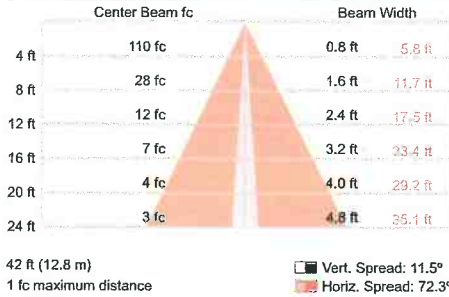
LED	Lumens	Efficacy
RGBA	543	30.1

Polar Candela Distribution



	0	25	45	70	90
0	1766	1766	1766	1766	1766
5	1175	1244	1474	1748	1768
15	156	209	321	490	1761
25	21	32	65	125	1545
35	7	10	20	47	1324
45	4	5	8	17	395
55	3	3	4	7	87
65	2	2	2	2	20
75	1	1	1	1	0
85	1	1	0	1	0
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

		Effective Floor Cavity Reflectance: 20%									
RCC %:	80	70	50	30	10	0	0	0	0	0	
RW %:	20	50	30	0	50	30	0	50	30	20	
RCR:	0	119	119	119	119	119	119	119	119	119	
1	114	111	109	108	111	109	107	104	103	101	
2	108	104	100	97	106	102	98	93	89	85	
3	103	97	92	89	101	96	91	85	81	77	
4	98	91	86	82	97	90	85	78	74	70	
5	94	86	81	77	92	85	80	74	70	66	
6	90	82	76	72	88	81	75	70	67	63	
7	86	77	72	68	85	77	71	66	63	60	
8	82	74	68	64	81	73	68	63	60	57	
9	79	70	65	61	78	70	64	60	57	54	
10	76	67	62	58	75	67	62	58	55	52	

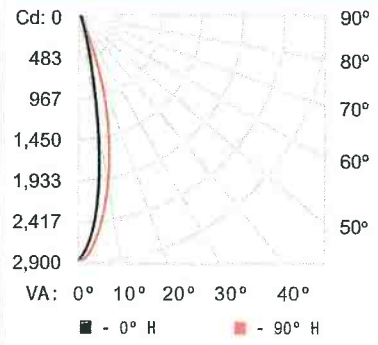
Zonal Lumen

Zone	Lumens	% Fixture
0 - 0°	504.7	92.9 %
0° - 90°	7.7	1.4 %
0 - 90°	512.4	94.3 %

1 ft (305 mm), 15° x 30° beam angle

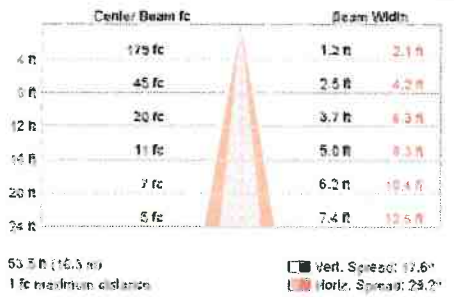
LED	Lumens	Efficacy
RGBA	555	31.0

Polar Candela Distribution



	0	25	45	70	90
0	483	483	483	483	483
5	2662	2662	2662	2662	2662
15	489	527	791	1194	1333
25	65	67	145	299	379
35	14	15	29	56	71
45	6	7	10	16	17
55	4	4	5	7	7
65	3	3	3	4	4
75	1	1	1	2	2
85	1	1	0	0	0
90	0	0	0	0	0

Illuminance at Distance



Coefficients Of Utilization - Zonal Cavity Method

		Effective Floor Cavity Reflectance: 20%									
RCC %:	80	70	50	30	10	0	0	0	0	0	
RW %:	20	50	30	0	50	30	0	50	30	20	
RCR:	0	119	119	119	119	119	119	119	119	119	
1	115	113	111	109	112	111	109	107	105	104	
2	111	107	104	102	108	106	103	102	100	98	
3	107	103	99	96	105	101	98	93	89	85	
4	104	98	94	91	102	97	94	87	83	79	
5	101	95	91	88	99	94	90	82	78	74	
6	98	92	88	84	97	91	87	78	74	70	
7	95	89	84	81	94	88	84	75	71	67	
8	93	86	82	79	92	85	82	73	69	65	
9	90	83	79	77	89	83	79	70	66	62	
10	88	81	77	75	87	81	77	68	64	60	

Zonal Lumen

Zone	Lumens	% Fixture
0 - 0°	242.6	43.7 %
0° - 90°	4.9	0.9 %
0 - 90°	247.5	44.6 %

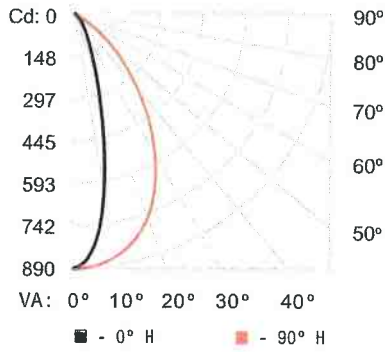
For lux multiply fc by 10.7

Photometrics / ColorGraze MX4 Powercore, RGBA, continued

1 ft (305 mm), 30° x 60° beam angle

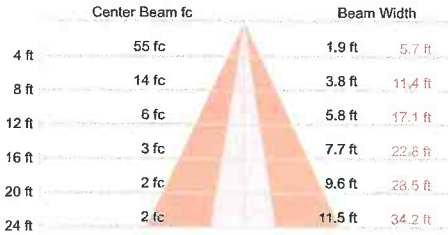
LED	Lumens	Efficacy
RGBA	547	30.1

Polar Candela Distribution



	0	25	45	70	90
0	857	867	867	867	867
5	806	816	816	816	816
15	394	445	558	748	814
25	110	144	245	521	669
35	29	37	76	278	365
45	8	10	22	100	224
55	3	4	10	34	86
65	1	1	4	11	24
75	0	0	1	2	6
85	0	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance

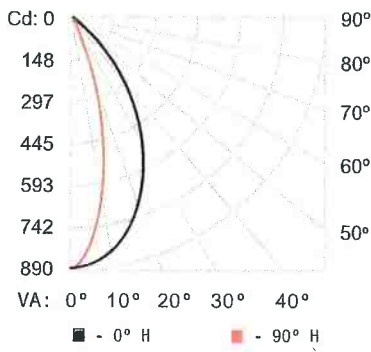


29.8 ft (9.1 m)
1 fc maximum distance
Vert. Spread: 27.0°
Horiz. Spread: 71.0°

1 ft (305 mm), 60° x 30° beam angle

LED	Lumens	Efficacy
RGBA	561	31.0

Polar Candela Distribution



	0	25	45	70	90
0	806	806	806	806	806
5	676	662	641	616	611
15	794	706	561	469	438
25	631	464	276	159	136
35	395	224	94	43	38
45	177	61	30	17	15
55	57	20	10	6	6
65	16	6	6	6	6
75	4	2	2	2	2
85	2	1	1	0	0
90	1	1	0	0	0

Illuminance at Distance



31.7 ft (9.7 m)
1 fc maximum distance
Vert. Spread: 54.0°
Horiz. Spread: 23.7°

Coefficients Of Utilization - Zonal Cavity Method

RCC %:	Effective Floor Cavity Reflectance: 20%														
	80	70	50	30	20	10	0	80	70	50	30	20	10	0	
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	0
RCR:	0	113	119	119	116	116	116	100	111	111	111	106	106	106	102
	1	113	110	108	105	111	108	106	93	104	102	100	99	97	96
	2	107	102	98	95	105	101	97	87	97	94	91	94	92	89
	3	102	95	90	86	100	94	89	81	91	87	84	88	85	82
	4	96	89	83	79	95	89	82	75	85	81	77	83	79	76
	5	92	83	77	73	90	82	77	70	80	75	72	79	74	71
	6	87	78	72	68	86	77	71	66	76	71	67	74	70	66
	7	83	73	67	63	82	73	67	62	72	66	63	70	66	62
	8	79	69	63	59	78	69	63	58	68	63	59	67	62	58
	9	75	66	60	56	74	65	60	55	64	59	56	63	59	55
	10	72	62	57	53	71	62	56	52	61	56	53	60	55	51

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	533.2	97.5 %
60 - 90	13.2	2.4 %
9 - 90	546.4	99.9 %

For lux multiply fc by 10.7

Coefficients Of Utilization - Zonal Cavity Method

RCC %:	Effective Floor Cavity Reflectance: 20%														
	80	70	50	30	20	10	0	80	70	50	30	20	10	0	
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	0
RCR:	0	113	119	119	116	116	116	100	111	111	111	106	106	106	102
	1	113	110	108	105	111	108	106	93	104	102	100	99	98	97
	2	107	102	98	95	105	101	97	87	97	94	92	94	92	89
	3	102	95	90	86	100	94	89	81	91	87	84	89	86	83
	4	97	89	83	79	95	89	83	75	86	81	78	84	80	77
	5	92	83	78	73	90	82	77	71	81	76	72	79	75	72
	6	87	78	72	68	86	78	72	66	76	71	67	75	70	67
	7	83	74	68	64	82	73	68	62	72	67	63	71	66	63
	8	79	70	64	60	78	69	64	59	68	63	59	67	62	59
	9	76	66	60	56	75	66	60	56	65	60	56	64	59	56
	10	72	63	57	53	71	62	57	53	62	57	53	61	56	53

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	546.7	97.7 %
60 - 90	12.3	2.2 %
0 - 90	561.0	99.9 %

Specifications / ColorGraze MX4 Powercore

Due to continuous improvements and innovations, specifications may change without notice.

Item	Fixture	Beam Angle	1 ft (305 mm)	2 ft (610 mm)	3 ft (914 mm)	4 ft (1219 mm)	
Lumens*		9° x 9°	655	1310	1965	2620	
		10° x 60°	619	1238	1857	2476	
	RGBW	15° x 30°	622	1244	1866	2488	
		30° x 60°	628	1256	1884	2512	
	Lumens*		60° x 30°	634	1268	1902	2536
			9° x 9°	566	1132	1698	2264
		RGBA	10° x 60°	543	1086	1629	2172
			15° x 30°	555	1110	1665	2220
			30° x 60°	547	1094	1641	2188
			60° x 30°	561	1122	1683	2244
Item	Specification	1 ft (305 mm)	2 ft (610 mm)	3 ft (914 mm)	4 ft (1219 mm)		
Output	LED Channels	Red / Green / Blue / 4000 K Red / Green / Blue / Amber					
	Lumen Maintenance†	70,000 hours L70 @ 25° C 65,000 hours L70 @ 50° C 75,000 hours L50 @ 25° C 70,000 hours L50 @ 50° C					
Electrical	Input Voltage	100 – 277 VAC, auto-ranging, 50 / 60 Hz					
	Power Consumption (Max. at full output, steady state)	18.5 W	37 W	55.5 W	74 W		
Control	Interface	Data Enabler Pro (DMX or Ethernet)					
	Control System	Philips Color Kinetics full range of controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, or third-party controllers					
Physical	Dimensions (Height x Width x Depth)	2.7 x 12 x 2.8 in (69 x 305 x 71 mm)	2.7 x 24 x 2.8 in (69 x 610 x 71 mm)	2.7 x 36 x 2.8 in (69 x 914 x 71 mm)	2.7 x 48 x 2.8 in (69 x 1219 x 71 mm)		
	Weight	2.1 lb (1.0 kg)	4.6 lb (2.1 kg)	7.1 lb (3.2 kg)	9.3 lb (4.2 kg)		
	Housing	Extruded anodized aluminum					
	Lens	Clear polycarbonate					
	Fixture Connectors	Integral male / female waterproof connectors					
	Mounting	Multi-positional, constant torque locking hinges					
	Temperature	-40° – 122° F (-40° – 50° C) Operating -4° – 122° F (-20° – 50° C) Startup -40° – 176° F (-40° – 80° C) Storage					
	Humidity	0 – 95%, non-condensing					
	Fixture Run Lengths	To calculate fixture run lengths and total power consumption for your specific installation, download the Configuration Calculator from www.philipscolorkinetics.com/support/install_tool/					
	Certification and Safety	Certification	UL / cUL, FCC Class A, CE, PSE, C-Tick, CQC				
Environment		Dry / Damp / Wet Location, IP66					

* 305 mm (1 ft) lumen output measurements comply with IES LM-79-08 testing procedures. 610 mm (2 ft), 914 mm (3 ft), and 1219 mm (4 ft) measurements are estimated based on the 305 mm (1 ft) measurements.

† L70 = 70% lumen maintenance (when light output drops below 70% of initial output). L50 = 50% lumen maintenance (when light output drops below 50% of initial output). Ambient luminaire temperatures specified. Lumen maintenance calculations are based on lifetime prediction graphs supplied by LED source manufacturers. Calculations for white-light LED fixtures are based on measurements that comply with IES LM-80-08 testing procedures. Refer to www.philipscolorkinetics.com/support/appnotes/lm-80-08.pdf for more information.



CHROMACORE[®] | OPTIBIN[™] | POWERCORE[™] | CHROMASYNC[™]
CK TECHNOLOGY | CK TECHNOLOGY | CK TECHNOLOGY | CK TECHNOLOGY

Custom Configurations

In addition to the standard configurations listed in this Product Guide, custom configurations are also available with non-standard options. See the ColorGraze MX4 Powercore Ordering Information sheet at www.philipscolorkinetics.com/ls/rgb/colorgraze-mx4-powercore/ for complete details.

Component	Available Non-Standard Options
LED Sources	Any combination of Red, Green, Blue, Royal Blue, Amber, 2700 K, 3000 K, 3500 K, 4000 K, 5700 K, and 6500 K
Housing Color	Choice of any RAL CLASSIC color except white
Beam Angle	60° x 60°, 90° x 60°
Power Consumption	Factory-set custom power consumption levels

Fixtures and Accessories

ColorGraze MX4 Powercore fixtures are part of a complete system which includes:

- One or more Data Enabler Pro devices
- Any Philips controller, including Light System Manager, iPlayer 3, and ColorDial Pro, or a third-party controller
- Leader Cables to connect the first fixture in each series to a Data Enabler Pro
- Optional Jumper Cables to add space between fixtures in a series, if necessary
- 3 + ground copper wire to connect Data Enabler Pro devices to a common junction box, if installing fixtures in parallel. Standard 12 AWG (2.05 mm) stranded wire is recommended.

RGBW Fixtures

Item	Beam Angle	Item Number	Philips 12NC
ColorGraze MX4 Powercore RGBW, 1 ft (305 mm)	9° x 9°	423-000001-00	910503704681
	10° x 60°	423-000001-01	910503704682
	15° x 30°	423-000001-02	910503704683
	30° x 60°	423-000001-03	910503704684
	60° x 30°	423-000001-04	910503704685
ColorGraze MX4 Powercore RGBW, 2 ft (610 mm)	9° x 9°	423-000001-05	910503704686
	10° x 60°	423-000001-06	910503704687
	15° x 30°	423-000001-07	910503704688
	30° x 60°	423-000001-08	910503704689
	60° x 30°	423-000001-09	910503704690
ColorGraze MX4 Powercore RGBW, 3 ft (914 mm)	9° x 9°	423-000001-10	910503704691
	10° x 60°	423-000001-11	910503704692
	15° x 30°	423-000001-12	910503704693
	30° x 60°	423-000001-13	910503704694
	60° x 30°	423-000001-14	910503704695
ColorGraze MX4 Powercore RGBW, 4 ft (1219 mm)	9° x 9°	423-000001-15	910503704696
	10° x 60°	423-000001-16	910503704697
	15° x 30°	423-000001-17	910503704698
	30° x 60°	423-000001-18	910503704699
	60° x 30°	423-000001-19	910503704701

Use Item Number when ordering in North America.

RGBA Fixtures

Item	Beam Angle	Item Number	Philips 12NC
ColorGraze MX4 Powercore RGBA, 1 ft (305 mm)	9° x 9°	423-000002-00	910503704702
	10° x 60°	423-000002-01	910503704703
	15° x 30°	423-000002-02	910503704704
	30° x 60°	423-000002-03	910503704705
	60° x 30°	423-000002-04	910503704706
ColorGraze MX4 Powercore RGBA, 2 ft (610 mm)	9° x 9°	423-000002-05	910503704707
	10° x 60°	423-000002-06	910503704708
	15° x 30°	423-000002-07	910503704709
	30° x 60°	423-000002-08	910503704710
	60° x 30°	423-000002-09	910503704711
ColorGraze MX4 Powercore RGBA, 3 ft (914 mm)	9° x 9°	423-000002-10	910503704712
	10° x 60°	423-000002-11	910503704713
	15° x 30°	123-000002-12	910503704714
	30° x 60°	123-000002-13	910503704715
	60° x 30°	123-000002-14	910503704716
ColorGraze MX4 Powercore RGBA, 4 ft (1219 mm)	9° x 9°	423-000002-15	910503704717
	10° x 60°	423-000002-16	910503704718
	15° x 30°	423-000002-17	910503704719
	30° x 60°	423-000002-18	910503704720
	60° x 30°	423-000002-19	910503704721

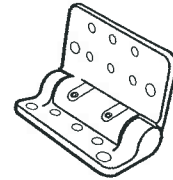
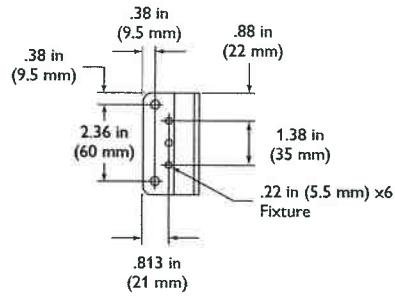
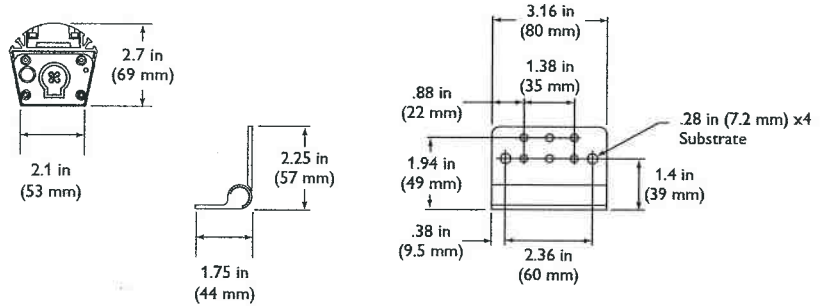
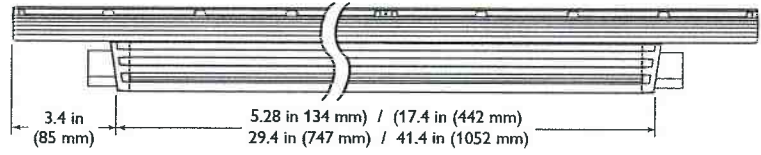
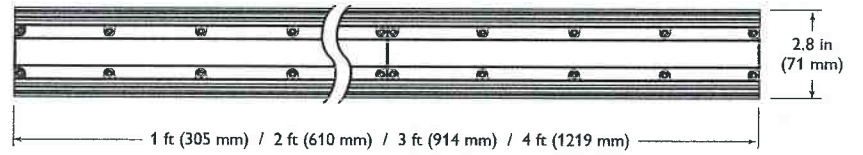
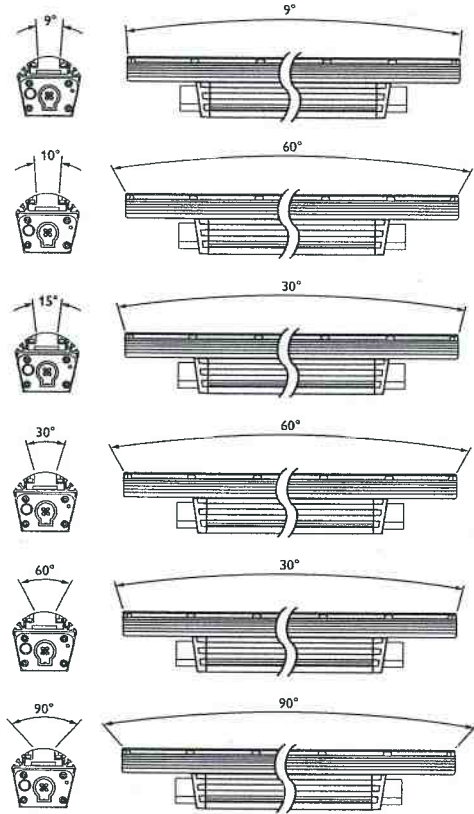
Use Item Number when ordering in North America.

Accessories

Item	Type	Size	Item Number	Philips 12NC
Leader Cable with Terminator	UL / cUL	10 ft (3.0 m)	108-000055-03	910503704066
		50 ft (15.2 m)	108-000055-00	910503703137
	CE / PSE	10 ft (3.0 m)	108-000055-07	910503705065
		50 ft (15.2 m)	108-000055-06	910503705064
		End-to-End	108-000057-00	910503703139
Jumper Cable	UL / cUL	1 ft (305 mm)	108-000057-03	910503704076
		5 ft (1.5 m)	108-000057-06	910503704079
	CE / PSE	10 ft (3.0 m)	108-000057-09	910503704082
		End-to-End	108-000057-01	910503704074
		1 ft (305 mm)	108-000057-04	910503704077
Glare Shield		5 ft (1.5 m)	108-000057-07	910503704080
		10 ft (3.0 m)	108-000057-10	910503704083
		1 ft (305 mm)	120-000081-00	910503700745
		2 ft (610 mm)	120-000081-01	910503700746
Additional Terminators		3 ft (914 mm)	120-000081-02	910503700747
		4 ft (1219 mm)	120-000081-03	910503700748
		Quantity 10	120-000157-00	910503703142
Additional Hinge		Quantity 1	120-000098-00	910503700772
Data Enabler Pro		3/4 in / 1/2 in NPT (U.S. trade size conduit)	106-000004-00	910503701210
		PG21 / PG13 (metric size conduit)	106-000004-01	910503701211

Use Item Number when ordering in North America.

Dimensions



Installation

The ColorGraze MX4 Powercore family extends the range and flexibility of the popular line of high-performance, full-color LED grazing fixtures from Philips Color Kinetics. These intelligent RGBW or RGBA fixtures offer an expanded palette of intensely saturated full-color light output in a variety of beam angles.

Owner / User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate ColorGraze MX4 Powercore fixtures in such a manner as to comply with all applicable codes, state and local laws, ordinances, and regulations. Consult with the appropriate electrical inspector to ensure compliance.

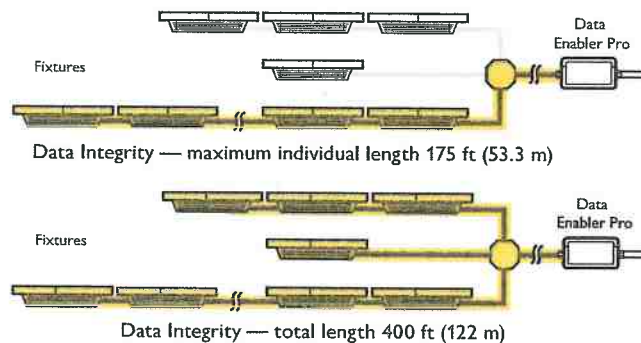
Installing in Damp or Wet Locations

When installing in damp or wet locations, seal all Data Enabler Pro devices and junction boxes with electronics-grade RTV silicone sealant so that water or moisture cannot enter or accumulate in wiring compartments, cables, or other electrical parts. Use suitable outdoor-rated junction boxes when installing in damp or wet locations. Additionally, use gaskets, clamps, and other parts required for installation to comply with all applicable local and national codes.

Prepare for the Installation

1. Refer to the lighting design plan, architectural diagram, or other diagram that shows the physical layout of the installation to identify the locations of all switches, controllers, Data Enabler Pro devices, fixtures, and cables.
2. ColorGraze MX4 Powercore fixtures can be installed in series or in parallel (wired to a common junction box). The maximum number of fixtures each Data Enabler Pro can support depends on specific configuration details such as fixture length, fixture spacing, circuit size, line voltage, and leader cable length. For more information, and for help calculating the number of fixtures your specific installation can support, download the Configuration Calculator from www.philipscolorkinetics.com/support/install_tool/, or consult Application Engineering Services at support@colorkinetics.com.

In addition to maximum fixture run lengths determined by the electrical configuration, each Data Enabler Pro imposes maximum run lengths based on data integrity. To ensure data integrity, maximum individual run lengths should not exceed 175 ft (53.3 m), and the total cable length per Data Enabler Pro should not exceed 400 ft (122 m).



✳ Refer to the ColorGraze MX4 Powercore Installation Instructions for specific warning and caution statements.

✳ Clean the lens with water and mild detergent using a soft cleaning cloth, and wipe dry. Because they will scratch, soften, pit, haze, yellow, mar, or crack the lens, do not use paper towels, abrasive cleaning products, window cleaners, or cleaning solutions containing chemicals such as ammonia, sodium hydroxide, and isopropyl alcohol.

Start the Installation

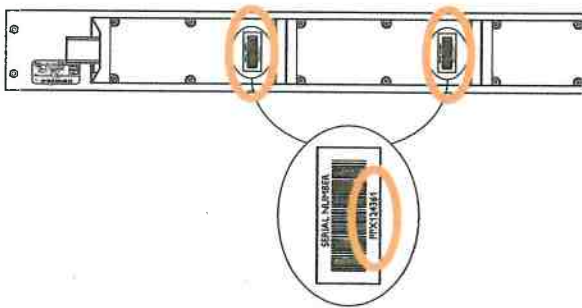
1. Install all Data Enabler Pro devices, including any interfaces with controllers. Data Enabler Pro devices and external controllers send power and control signals to fixtures over Leader Cables. Jumper Cables are required to connect fixtures together in series.
2. Verify that all additional supporting equipment (switches, controllers) is in place.
3. Ensure that all additional parts and tools are available, including:
 - The included mounting hinges and hardware
 - 2 mm, 2.5 mm, and 4 mm hex key wrenches
 - 1/4 in (5 mm) socket cap fasteners, anchors, or screws for surface mounting
 - 3 + ground copper wire, as needed. Standard 12 AWG (2.05 mm) stranded wire is recommended.
 - Junction boxes, as needed, rated for your application. (Refer to the manufacturer's literature for additional items required for mounting or sealing.)
 - Electronics-grade room temperature vulcanizing (RTV) silicone sealant, as needed

☛ Refer to the Data Enabler Pro Installation Instructions or Product Guide for guidelines on configuring and positioning the Data Enabler Pro in relation to the controller.

Unpack and Prepare Fixtures

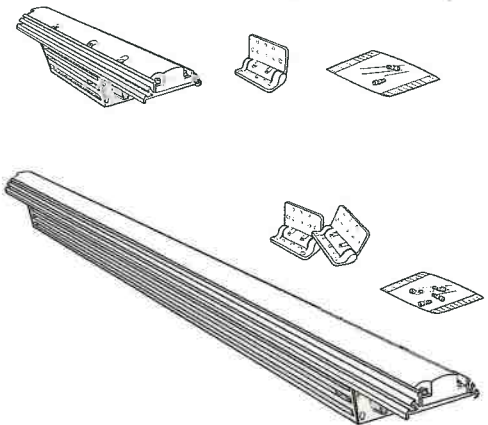
1. Carefully inspect the box containing ColorGraze MX4 Powercore and the contents for any damage that may have occurred in transit.
2. ColorGraze MX4 Powercore fixtures are addressable in 305 mm (1 ft) segments. This feature allows playback controllers to send unique light output data to each segment of each fixture within your installation.

Each fixture segment, or LED node, come pre-programmed with a unique serial number. Each fixture has from one to four serial numbers, depending on its length. As you unpack the fixtures, record the serial numbers in a layout grid (typically a spreadsheet or list) for easy reference and light addressing.



Included in the box

ColorGraze MX4 Powercore fixture
(1) or (2) Mounting hinges
(2) or (4) M5, 15 mm stainless steel hex bolts for hinge installation
Installation Instructions

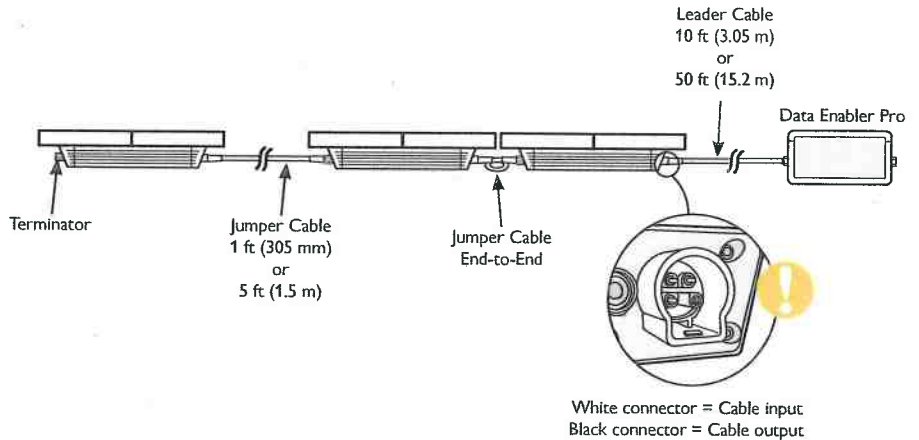


3. Assign each fixture to a position in the lighting design plan.
4. To streamline installation and aid in light address programming, you can affix a weatherproof label identifying the order or placement in the installation to an inconspicuous location on each fixture's housing.

Mount and Connect Fixtures

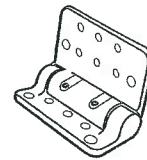
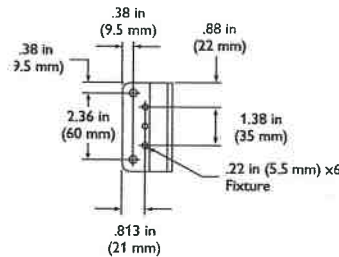
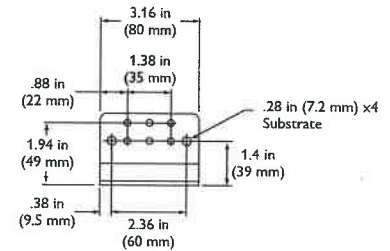
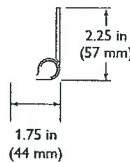
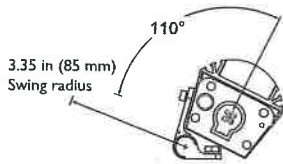
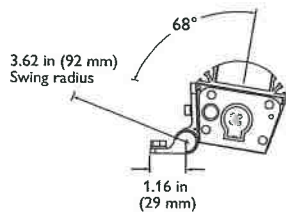
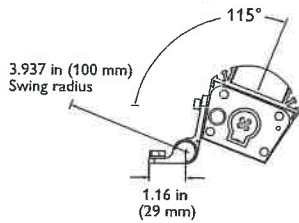
Make sure the power is OFF before mounting and connecting ColorGraze MX4 Powercore fixtures.

ColorGraze MX4 Powercore fixtures offer bulkhead connectors that accept the ColorGraze MX4 Powercore pre-configured Leader and Jumper Cables. Because they have a male connector on one end of the fixture and a female connector on the other end, ColorGraze MX4 Powercore fixtures are directional, and must all be oriented in the same direction.



Mount Fixtures

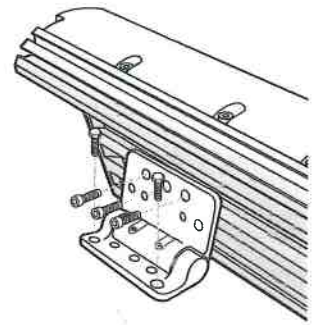
- Using the included 4 mm hex hardware, attach two hinges to each fixture. There are three possible methods for attaching hinges to the fixtures, each method offering differing degrees of swing radius and space-efficiency. Select the method most suitable for your application.



- If installing ColorGraze MX4 Powercore fixtures in parallel, mount junction boxes in accordance with the lighting design plan.
- When installing a linear series of ColorGraze MX4 Powercore fixtures, make sure that all fixtures are oriented in the same direction. The white connectors are for cable inputs, and the black connectors are for cable outputs. The Leader Cable connects to the male bulkhead connector on the first fixture in each series.
- Rotate the fixture hinge assemblies into the desired positions. For consistent position control, use the indicators on the side of each hinge knuckle for reference. Use a 2 mm hex key wrench to loosen the set screws, as needed.

- To accommodate installation from various angles, each hinge has four set screws designed to lock the hinge position. All four, or only two, of the set screws may be used, depending on the mounting method and swing radius you select for the hinge. For example, if the hinge leaves are to be fully closed, the interior set screws may not be accessible.

Do not lock the hinges positions at this time; the hinges have a built-in constant torque feature that allows temporary positioning. For optimal light output performance, aim and lock the hinges following installation.



Make Cable Connections

1. Connect Leader Cables:

- If installing fixtures in series, run a 3.0 m (10 ft) or 15.2 m (50 ft) Leader Cable from a Data Enabler Pro device to the input side of the first fixture in the series. Push the Leader Cable into the connector to lock it into place.
- If installing fixtures in parallel, run 3 + ground copper wire from a Data Enabler Pro device to a common junction box.

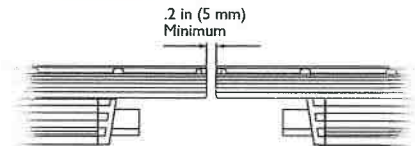
Run Leader Cables from the common junction box to the input side of the first fixture in each series. Push the Leader Cables into the connectors to lock them into place.

Within the common junction box, use wire nuts to connect line, neutral, ground, and data wires. Tuck wire connections into the junction box.

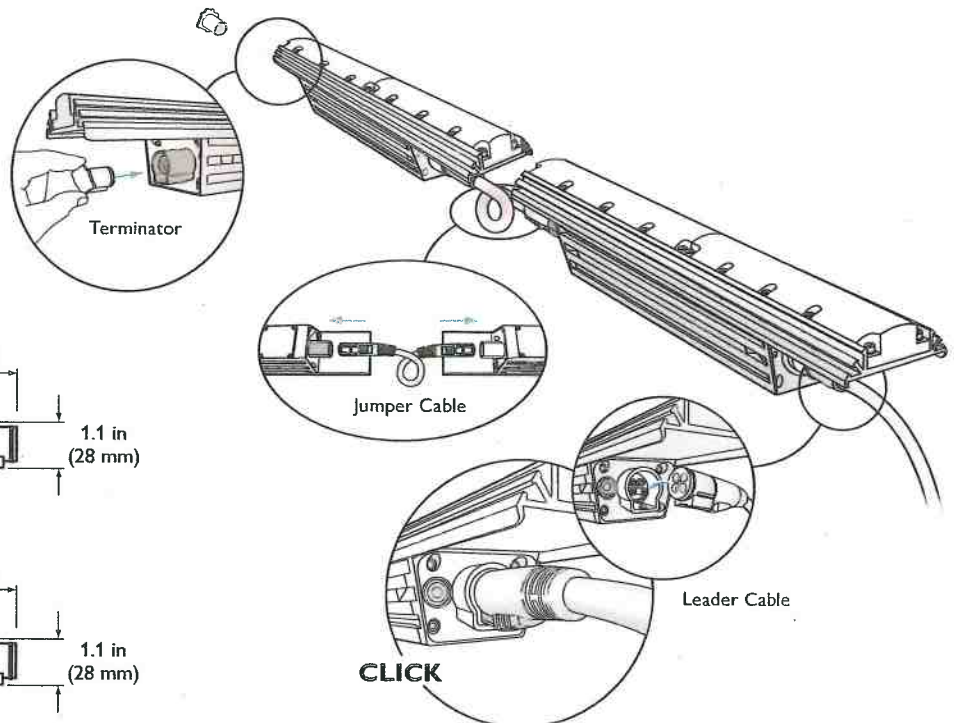
Secure all junction box covers. If installing in a damp or wet location, seal all junction boxes and points of entry with contractor-grade RTV silicone sealant. Use gaskets, clamps, and other parts and fittings required to comply with local outdoor wiring codes.

- Connect all Jumper Cables between fixtures. Push the cable ends into the connectors to lock them into place.
- Insert a terminator into the output side of the last fixture in each series. (Terminators are provided with the ColorGraze MX4 Powercore Leader Cables.)

Minimum distance between fixtures

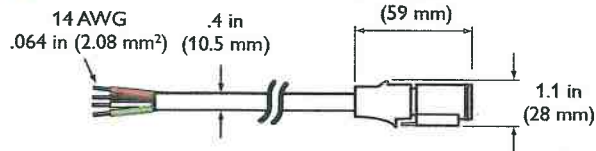


⊗ Be sure to position fixtures close enough together so that Leader Cables and Jumper Cables are not stretched or taut when installed.

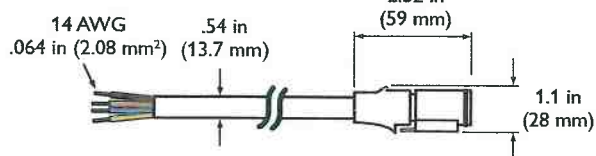


Leader Cable Connector Dimensions

UL / cUL



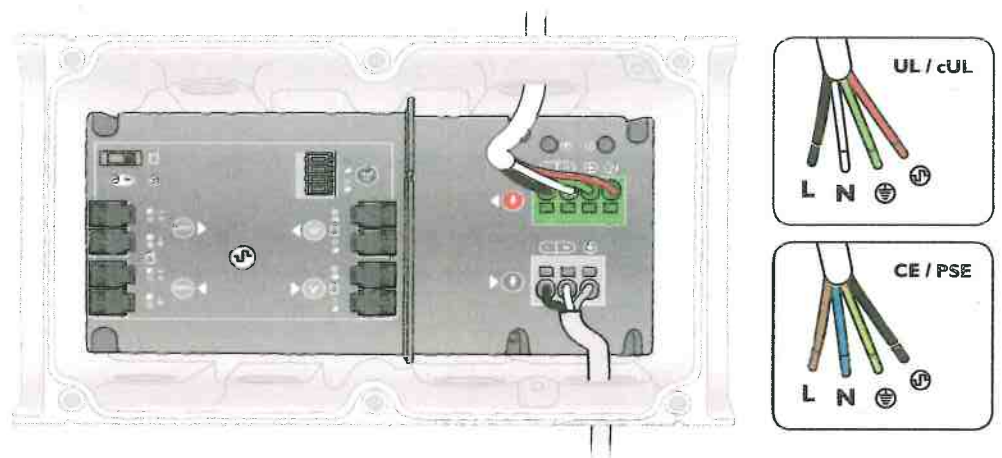
CE / PSE



Make Power Connections

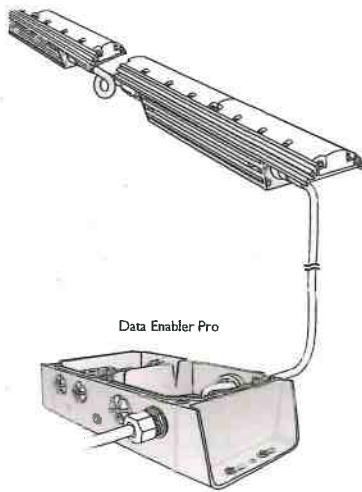
Once you've made all fixture and junction box connections, connect the flying leads from a Leader Cable or 3 + ground wire from a common junction box to the 4-wire PC terminal connector block inside the Data Enabler Pro Housing.

Power / data output to fixtures



Mains voltage output

Refer to the Data Enabler Pro Product Guide for comprehensive installation and configuration instructions. You can view or download the guide from www.philipscolorkinetics.com/ls/pds/dataenablerpro



Address and Configure the Fixtures

Make sure the power is ON before addressing and configuring fixtures.

To allow a fine level of control, ColorGraze MX4 Powercore fixtures are addressable in 305 mm (1 ft) segments, or *nodes*. ColorGraze MX4 Powercore fixtures have one, two, three, or four nodes, depending on fixture length, each identified by a unique serial number.

ColorGraze MX4 Powercore fixtures operate in 8-bit mode by default. You can configure ColorGraze MX4 Powercore to operate in 16-bit mode, which increases fixture resolution for smoother dimming and more precise color control.

In 8-bit mode, fixture nodes use one DMX address per LED channel (red, green, blue and white or amber). In 16-bit mode, fixture nodes use two DMX addresses per LED channel. The first DMX address corresponds to the “coarse” data for that channel, and the second corresponds to the “fine” data. By using double the number of DMX addresses, 16-bit mode increases fixture resolution from 256 dimming steps to 65,536 (256 x 256) dimming steps.


You can address fixtures and switch between 8-bit mode and 16-bit mode using QuickPlay Pro. You can download QuickPlay Pro from www.philipscolorkinetics.com/support/addressing/


DMX Channel Assignments

	1		2		3		4	
8-Bit Mode	Red		Green		Blue		White or Amber	
16-Bit Mode	1 Red Coarse	2 Red Fine	3 Green Coarse	4 Green Fine	5 Blue Coarse	6 Blue Fine	7 White or Amber Coarse	8 White or Amber Fine

Each 305 mm (1 ft) ColorGraze MX4 Powercore node comes factory-addressed with a starting DMX address of 1. For lighting designs where fixture nodes work in unison, all nodes can be assigned the same DMX addresses. Changes to the default addresses are not necessary, but if nodes were previously readdressed for use in other installations, you must reset them. For light show designs that show different colors on different nodes simultaneously, you must assign unique DMX addresses to your nodes and sort them in a useful order.

- In Ethernet installations, you can address and configure fixture nodes using QuickPlay Pro with a computer connected to your lighting installation's network. QuickPlay Pro can automatically discover all fixture nodes, controllers, and Data Enabler Pro devices for quick configuration.
- In DMX installations, you can address and configure fixture nodes using QuickPlay Pro with iPlayer 3 or SmartJack Pro. You can manually enter fixture node serial numbers, or you can import a spreadsheet listing each fixture node's serial number and starting DMX address.

 You can download QuickPlay Pro from www.philipscolorkinetics.com/support/addressing.

 You will need the layout grid that you created when you recorded the serial numbers of the light fixtures in your installation.

For details on addressing and configuring fixtures, controllers, and power / data supplies with QuickPlay Pro, refer to the *Addressing and Configuration Guide*, which you can view or download at www.philipscolorkinetics.com/support/addressing.

Setting Fixture Dimming Curves

Dimming curves describe how slowly or quickly a fixture dims at different levels of input. For finer control, ColorGraze MX4 Powercore offers three different dimming curves for use in different situations and applications:

- **Normal**
The non-linear (gamma) dimming curve used in most Philips Color Kinetics LED lighting fixtures. ColorGraze MX4 Powercore fixtures use the normal dimming curve by default.
- **Linear**
A dimming curve with a linear relationship between power input and DMX output.
- **Tungsten**
A non-linear dimming curve that emulates the dimming curve of incandescent lamps on a DMX dimmer. This curve offers the most control at low intensities.


Setting LED Transition Speed

Normally, LEDs react to DMX or other control data instantaneously. In some cases, you may want to slow down the reaction speed to achieve smoother transitions when the intensity of different LED channels changes. ColorGraze MX4 Powercore offers five levels of decreasing LED transition speed, from Fast (instant snap changes) to Delay-4 (slowest transition speed).

Chromasync: Maximizing Fixture-to-Fixture Consistency

Optibin, our advanced binning algorithm, sets an industry-leading standard for the color consistency and uniformity of LED sources used in manufacturing. Chromasync technology enhances the performance of Optibin by maximizing fixture-to-fixture color consistency within an installation. By using active measurements of each fixture's color range taken during manufacturing, Chromasync achieves a common gamut for all ColorGraze MX4 Powercore fixtures, regardless of LED sources used or date of manufacture.

Chromasync is especially valuable in lighting designs that feature combinations of two or more saturated colors (RGB white, yellow, cyan, and so on). In the case of RGB white, for example, Chromasync can reduce color variations across ColorGraze MX4 Powercore fixtures from 10 or more MacAdam ellipse steps to as little as four MacAdam ellipse steps.

 Note that Chromasync achieves a common gamut at the expense of some intensity of output — from a negligible loss to 10% or more, depending on color.

While Chromasync does not calibrate colors with an external reference or standard, it accelerates commissioning of systems by eliminating the need for tedious fine-tuning of individual fixtures.

Chromasync technology supports three basic data operation modes for use with ColorGraze MX4 Powercore: 4-to-4, 3-to-4, and 3-to-3.

- **4-to-4 Configuration**

The 4-to-4 configuration works with newer controllers that deliver four channels of control data to four-channel LED fixtures. This is the default configuration for MX4 LED fixtures.

- **3-to-4 Configuration**

The 3-to-4 configuration works with controllers that employ three output data channels. ColorGraze MX4 Powercore maps three channels of control data to all four LED channels.

- **3-to-3 Configuration**

The 3-to-3 configuration allows legacy RGB light shows to be carried over to four-channel light fixtures; however, the fourth channel (White or Amber) is ignored. Therefore, this configuration does not utilize the full color palette available on the ColorGraze MX4 Powercore.


Aim and Lock the Fixtures


Make sure power is ON before aiming fixtures.

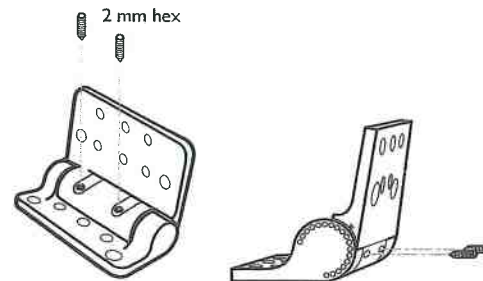
Rotate the fixtures to achieve the optimal angle for light output. For consistent position control, use the indicators on the side of each hinge knuckle as reference.

For fine horizontal adjustment, you can change the position of the hinge mounting block located on the side of each fixture. Loosen the set screw with a 2.5 mm hex key, slide the mounting block to the desired position, then tighten the set screw.

Once satisfied with fixture angles and positioning, use a 2 mm hex key wrench to tighten the hinge position set screws and lock each hinge.

 Do not look directly into a fixture when aiming and locking.

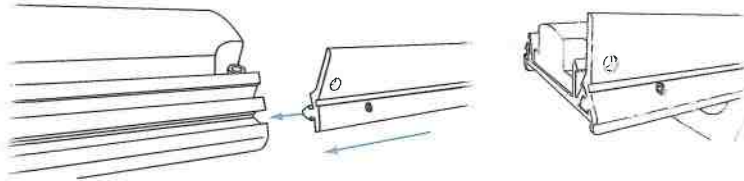
 The hinge position set screws have factory applied thread lock. Confirm the fixture angle and positioning before locking each hinge.



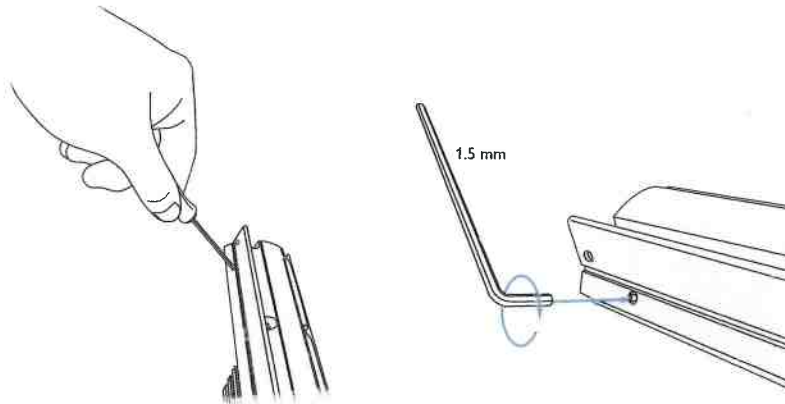
Attach Glare Shields (Optional)

Glare Shields, in 1 ft (305 mm), 2 ft (610 mm), 3 ft (914 mm), and 4 ft (1.2 m) lengths, can be inserted in the grooves in the ColorGraze MX4 Powercore housing. Glare Shields block unwanted spill light, and can shield the light sources from being directly visible in certain mounting situations.

1. Insert the Glare Shield's triangular tab in the outer groove on the side of the ColorGraze MX4 Powercore housing.
2. Using a hex wrench, tighten the locking screws to hold the Glare Shield in place.



3. (Optional) Attach a tether to the knockout in the Glare Shield, and affix the tether to a secure anchor point.
4. Using a small screwdriver, hand-tighten all set screws. Using a 1.5 mm hex wrench, torque the set screws to approximately 3.5 in-lbs (4 kgf/cm) to hold the Glare Shield in place.



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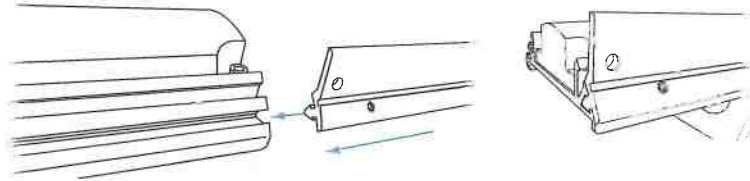
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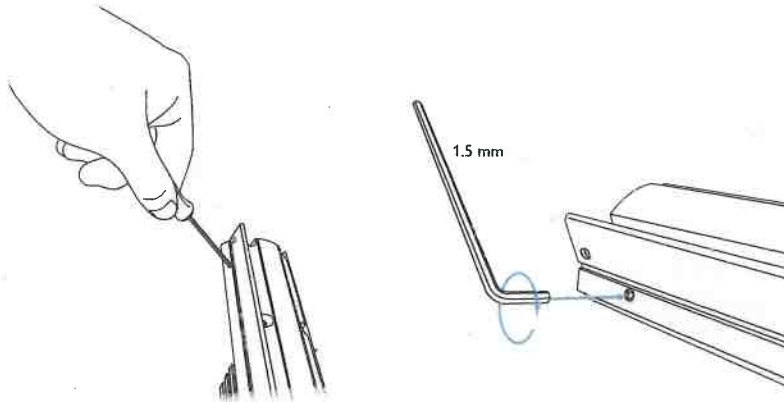
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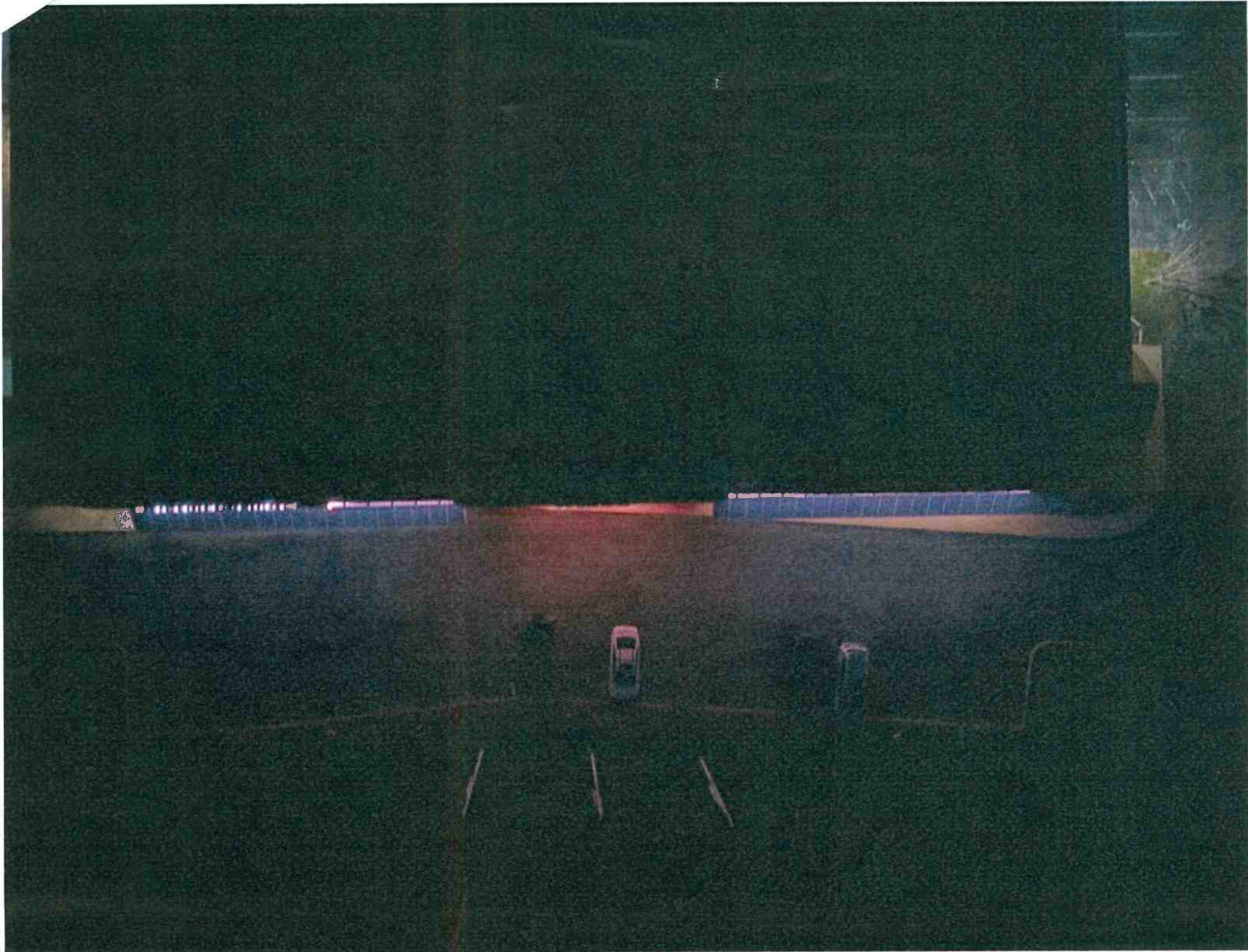
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*Futures
location*

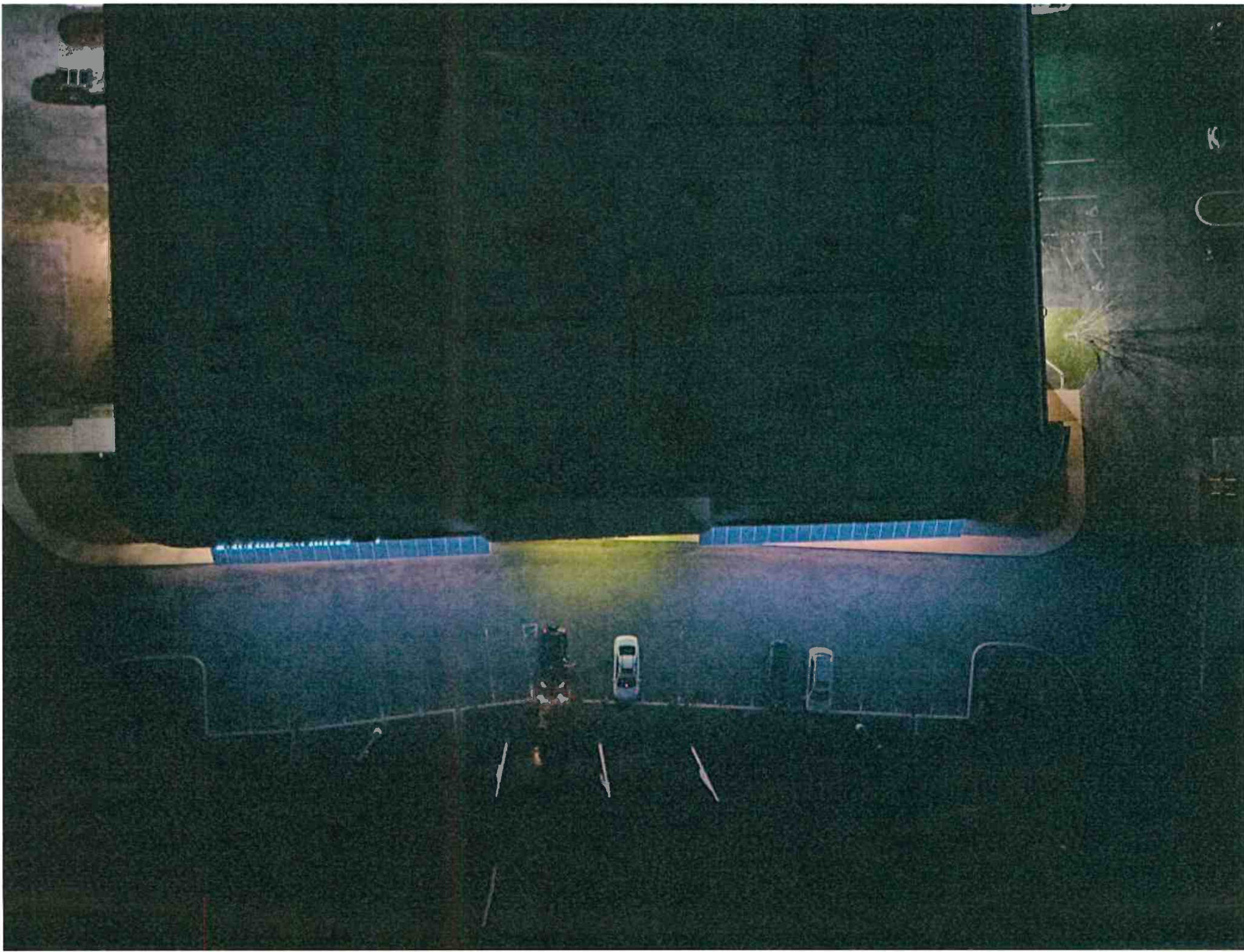


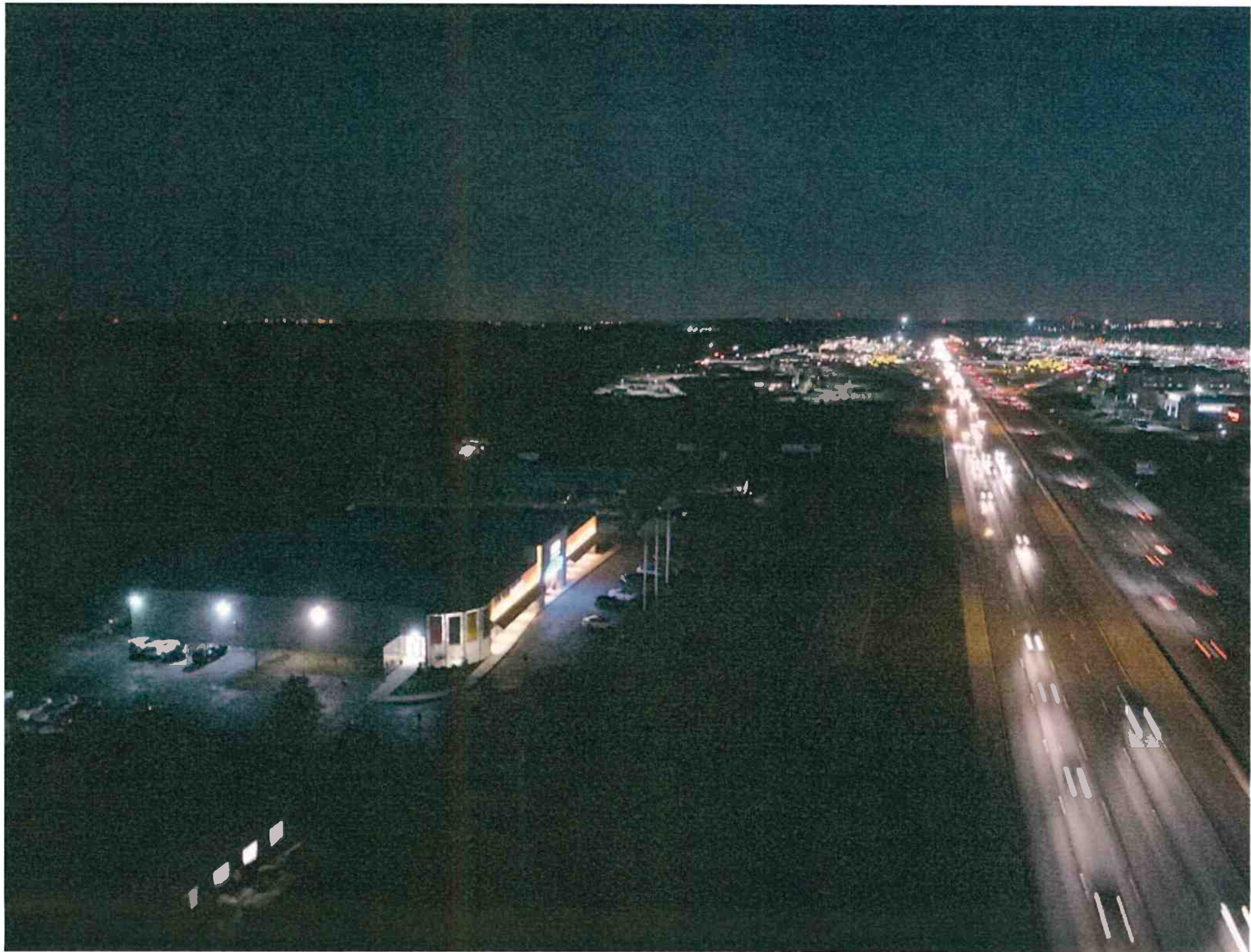
Color Kinetics Fixtures mounted just above solar awning to graze up wall.

**ROOF
LINE
PHOTOS**







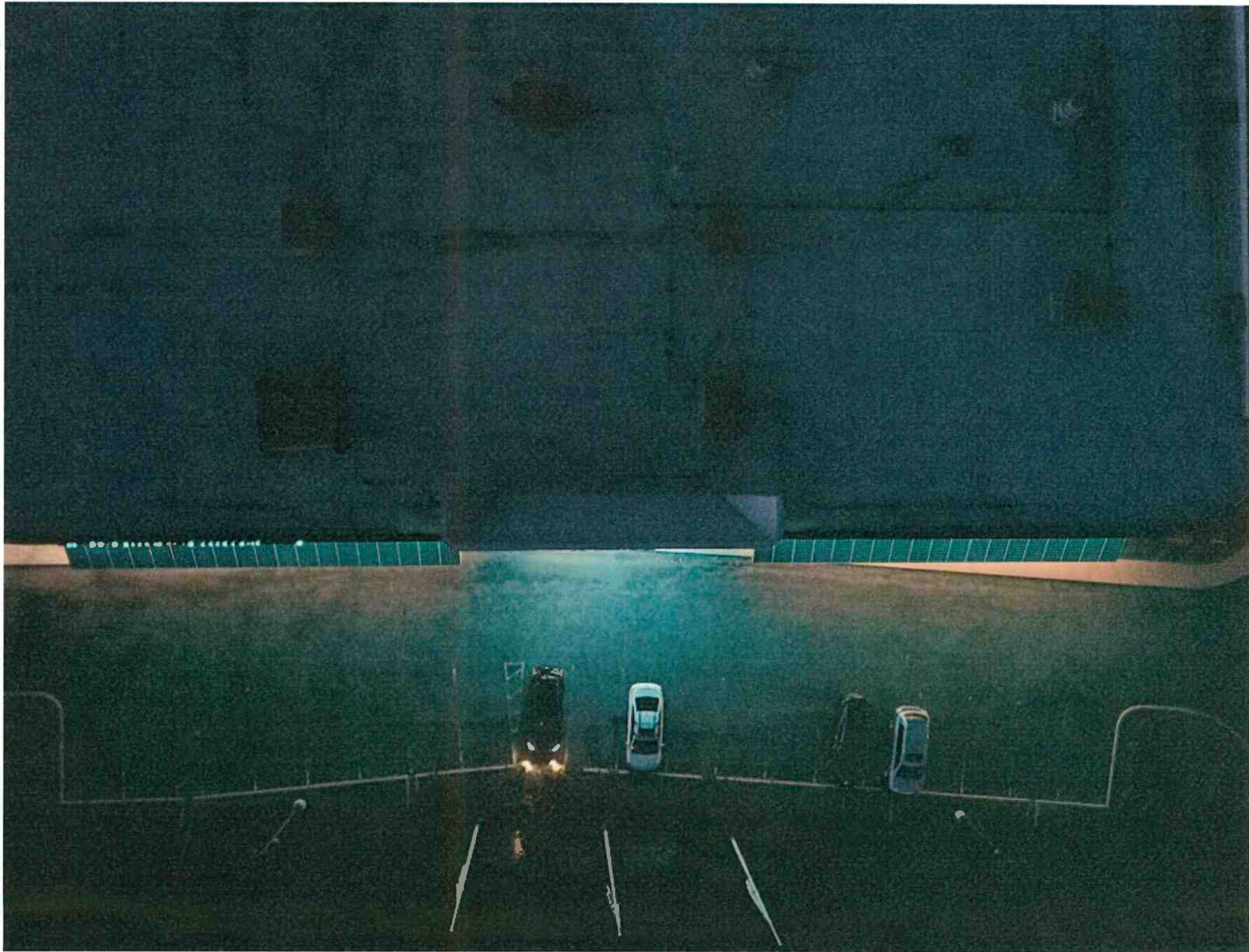




METRO
LIGHTING

LUXURY VESTIBULE RECEPTION AREA











**FULL COLOR
ARCHITECTURAL
ELEVATIONS**

FRONT



MIDWEST VETERINARY REFERRAL 24 HOUR

METRO LIGHTING

METRO LIGHTING

METRO LIGHTING

FRONT - from E



Side East



SIDE REAR - E



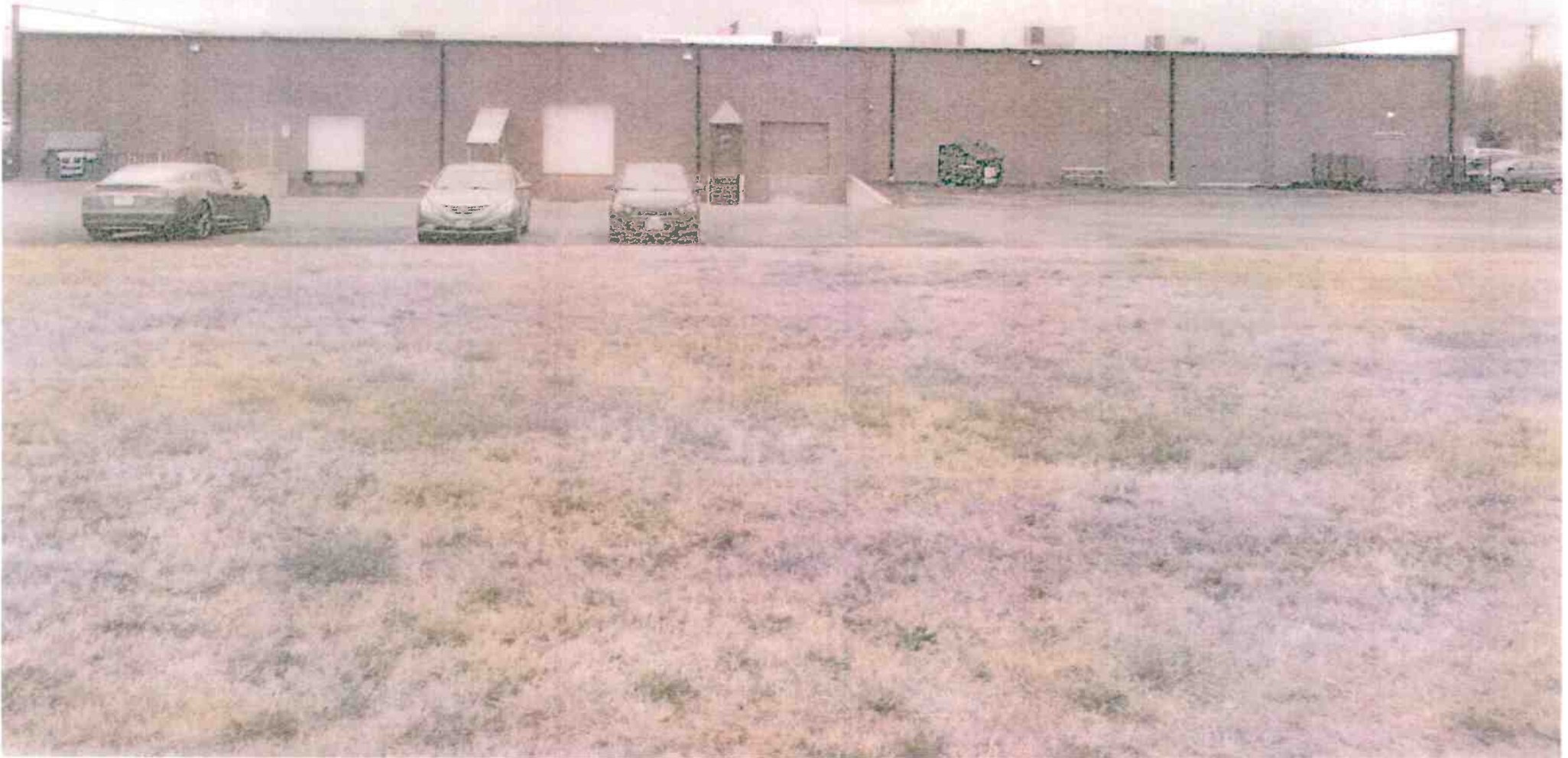
REAR from E



REAR FROM
EAST



*Bear from
North*



FRONT FROM WEST



SIDE WEST

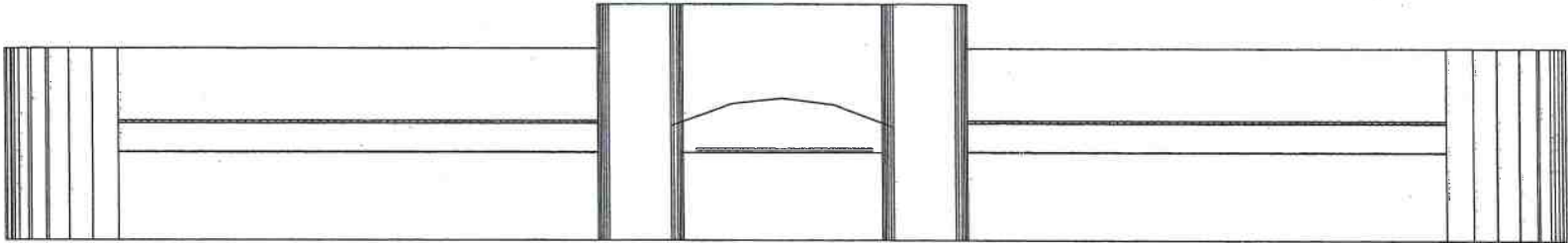


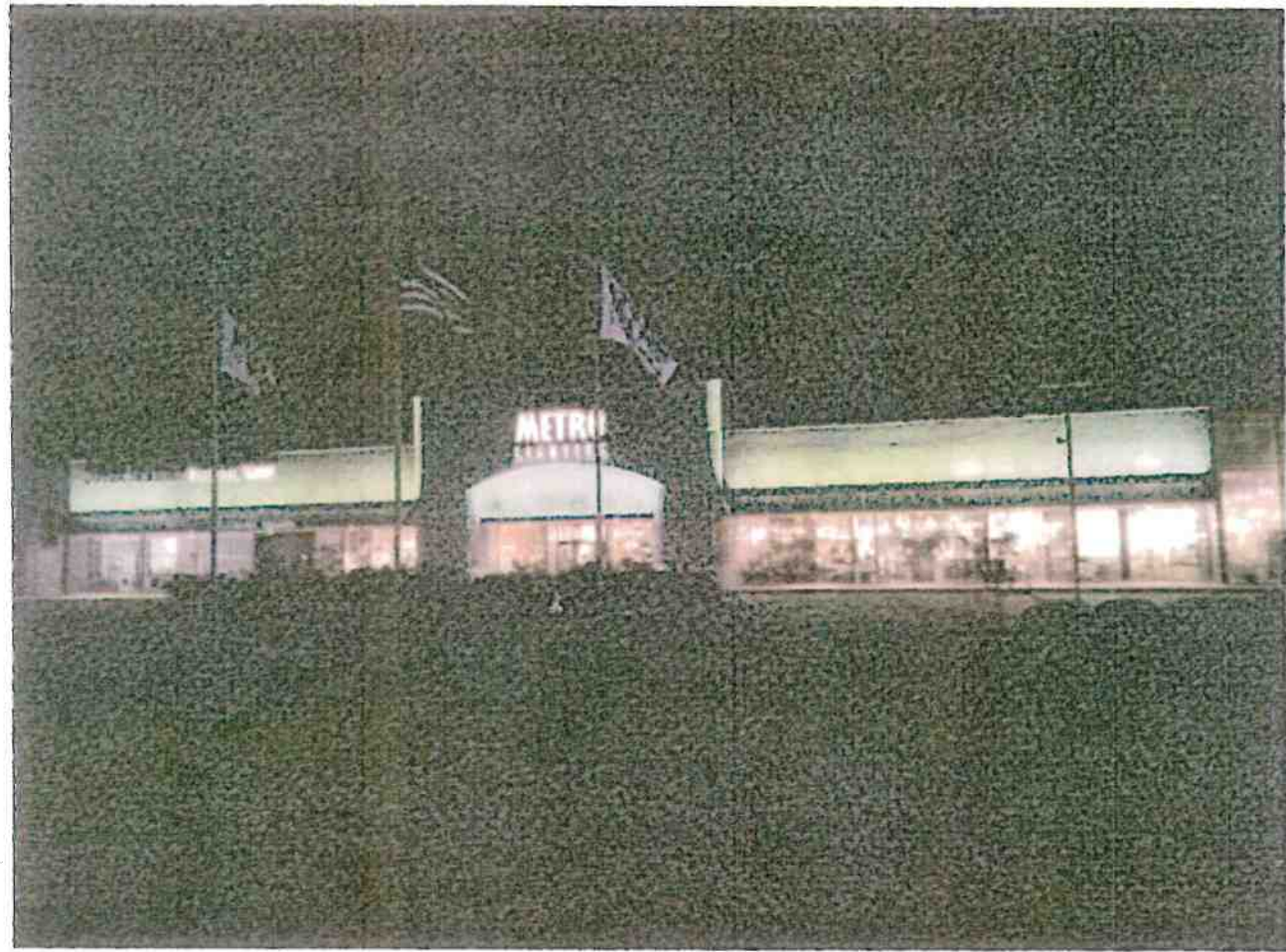
SIDE WEST
FROM REAR



BACK FROM
WEST









**ARCHITECTURAL
COLOR
ELEVATIONS**

Breast
Cancer

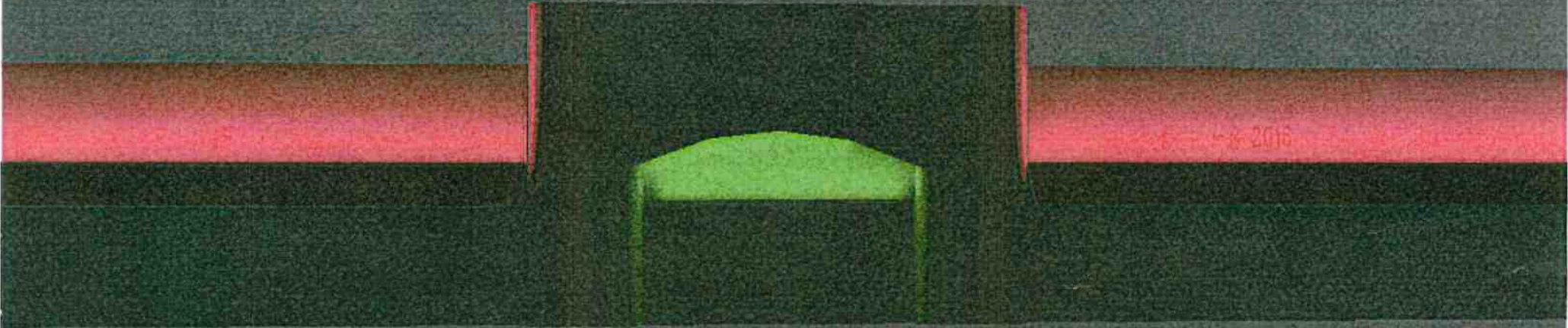
Prostate
Cancer

*St Patrick's
May*

Cardinals

STL Blues

Christmas



2016

Valentine's
Day

July 14th