WiLLsport™ GFX

MAIN AUDIO CONTROL

Volume
ON

Music & Lightshows

Lose Yourself	Woo Hoo
Enter Sandman	Jump Around
Don't Stop Believin'	Crazy Train
We Will Rock You	Seven Nation Army

86

Home   Effects   Timer   Music   SFX   Map   Info

WiLL | WISCONSIN LIGHTING LAB®

SOUND EFFECTS BOARD

Horn	Boing	Boom Shaka	Charge!
Chimes	Crickets	Day-O	Doh
General Lee	Goofy Fail	HaHa!	Loser Horn
Mario Coin	Mario Dead	Mario Jump	Mine!
Scratch	Shatter	We Are Live	What?!

Home   Effects   Timer   Music   SFX   Map   Info

WiLL

Stadium Sound Mixer

Stadium Sound System

- **Unlock your entertainment venue with audio light shows**

- **All in one system (Lighting Control, Music + Lighting Entertainment)**

- **Factory Commissioned + Supported**

- **Retrofit existing systems with minimal disruption**

WiLLsport™ GFX

- **System status + control from anywhere**

- **Compatible with any connected device with a browser**

- **Secure login access**

- **Great feature for coaches, facility managers + league directors**

  *Subscription required

REMOTE LIGHTING CONTROL

ON-SITE

OR

OFF-SITE

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B
quotes@willbrands.com | 866-308-9455

WiLLsport™ GFX
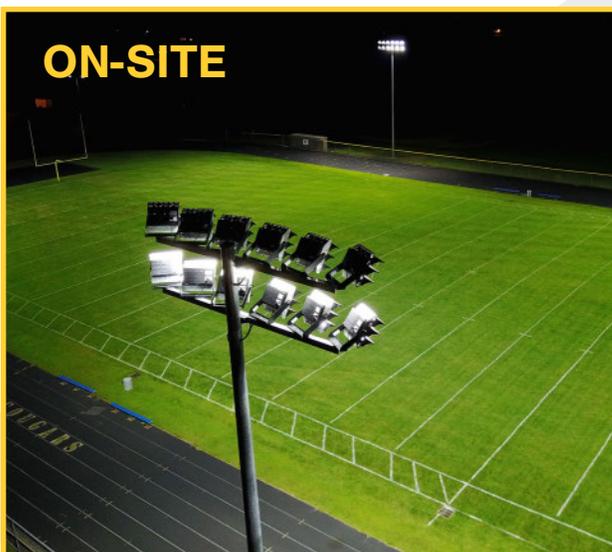
- **Simple power and controls distribution to LED fixtures**

- **Reliable and flexible antenna for wireless controls communication**

- **Simplified flying-lead power connections**

- **Lockable weatherproof enclosure**

- **New installation OR retrofit ready**

- **Compatible with existing DMX512 systems**

- **Timed lighting control for public use facilities**

- **Flexible set timer with a 2-minute dim warning**

- **Single button for intuitive use**

- **Outdoor + weatherproof enclosure**

- **Pole or wall mounting options**

- **Remote tech support directly from the factory engineering team**

- **Troubleshooting & system status**

- **Lighting control programming updates**

- **Assistance with system expansion**

- **After-hours support**

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B
quotes@willbrands.com |' 866-308-9455

Ordering Your WiLLsport® Lighting Controls System

Ready to enhance your LED lighting system with the addition of wireless controls? Follow these simples steps to kick start your project:

To Place Your Order

Contact your WiLL sales rep, and determine your factory-commissioned controls functions. Our recommended functions include:

Preset Lighting Configurations

On/Off – 0%–100% Dimmer (Main Field)

Preset Entertainment Light Shows

On/Off – 0%–100% Dimmer (Side Field)

Controls functions can be customized to meet the specific needs of your project.

After Placing Your Order

After the order is placed and your light fixtures are in production, our expert team will schedule a controls configuration call to discuss and confirm the finer details of your controls system.

During this call, you will:

- Review your controls program with the expert team at WiLL.
- Discuss the recommended configuration for your site (provided in advance by WiLL)
- Learn more about the easy-to-operate user interface.
- Talk through all special requirements for your project.
- Get answers to any questions you may have!

The approved controls configuration will then be factory-commissioned into the production of your lighting system prior to shipment. Your system will be plug-and-play ready upon arrival.

DESIGNED + SUPPORTED AMERICA

Easy Installation. Expert Support.

WiLL's USA-based production, engineering, and tech support teams have created a simplified, plug-and-play installation process. If any questions or issues do arise, rest assured that the WiLL team has you covered with factory-direct technical support.

WiLLsport® PRODUCT FAMILY

Proudly engineered and manufactured in Wisconsin, USA – our WiLLsport® family of LED sports lighting systems combines 50 years of manufacturing expertise, premium components, top-notch midwestern workmanship, and cutting-edge lighting and controls technology. From hometown ball fields to professional sports complexes to infrastructure and transportation applications, WiLLsport® series products are precision-engineered to deliver premium lighting, power management, and entertainment – all while backed by WiLL's unmatched design, engineering, and project support capabilities.

▪ Output options up to 115,000 lumens

▪ Proprietary heat sink design with thermally isolated LED modules resulting in calculated L70 LED life over 200,000 hours

▪ Wireless control options including entertainment, RGB, dimming, zones, and schedules

▪ Premium high-efficiency Chip-on-Board (COB) LEDs and silicone optics that will not crack, fade, or discolor with age

▪ Rugged aluminum chassis construction with integrated GlareKiller system

▪ Easy driver and controller access

▪ Pre-aimed adjustable mount according to factory lighting design

▪ Power cord options for AC and DC configurations

▪ Remote power-control industrial cabinet upgrades

▪ Labeled drivers and terminal blocks for easy install and service

WiLLsport® KBX + RPCX

▪▪▪ INDOOR / OUTDOOR SPORTS LED LIGHTING

MANUFACTURED in WISCONSIN

WiLL WISCONSIN LIGHTING LAB®

WiLLsport® **KBX** LED LIGHTING W/ OPTIONAL **RPCX** REMOTE PWR–CTL SYSTEM

Catalog # _____

Project _____

Comments _____

KB8
(Standard Black)

KB6
(Custom Color Upgrade)

KB4
(Custom Color Upgrade)

Highlights

- Designed, engineered, and manufactured in Wisconsin, USA from premium domestic and imported components
- IES files, photometric reports, and lighting simulations available from factory design team
- Output options up to 115,000 lumens
- Easy driver and LED module access for technology upgrades and maintenance
- Remote power-control industrial cabinet options from factory
- Wireless control options including entertainment, RGB, dimming, zones, and schedules
- Pre-aimed adjustable mount according to factory lighting design
- Rugged aluminum chassis construction with integrated GlareKiller system

Applications

- Outdoor sports and entertainment facilities
- Indoor sports arenas and venues
- Retrofit and new installs
- Hometown ball fields
- Professional sports complexes
- General high-output flood and area lighting
- Airports, military, and infrastructure projects

Construction & Finish (Light Fixture)

- Rugged aluminum chassis with excellent heat/impact resistance and hinged electrical access
- Proprietary anodized heat sink design with thermally isolated LED modules resulting in calculated L70 LED life over 200,000 hours
- Standard powder coat facilities are UL1332 (DTVV2) certified for application of organic finish coatings for outdoor enclosures
- Anodized light engine plate and heat sinks meet MIL-A-8625 Type II (Class 1 & 2) standards and are RoHS, REACH, ELV, and WEEE compliant
- High-grade stainless steel hardware for superior strength and corrosion resistance
- Driver components are fully encased in potting material for moisture and vibration resistance

Construction & Finish (Optional Remote PWR-CTL)

- Bottom cabinet(s): Aluminum industrial power-control cabinet with NEMA 3R rating
- Top distribution hub(s): Polycarbonate enclosure with NEMA 1, 2, 4, 4X, and IP66 rating
- Small, medium, large, and custom cabinet configurations available
- Standard powder coat facilities are UL1332 (DTVV2) certified for application of organic finish coatings for outdoor enclosures
- High-grade stainless steel hardware for superior strength and corrosion resistance
- See drawings below for additional component and wiring details

Compliance & Warranty

- ETL Certification for UL STD 1598 & CSA STD C22.2 # 250.0 for dry/damp/wet locations
- Remote power-control: pending
- Meets Buy American Act requirements
- Standard 5-year limited warranty with extended factory warranties available

Light Engine & Electrical

- Premium high-efficiency Chip-on-Board (COB) LEDs wired and bonded directly to circuit board to deliver compact lumen density and added reliability
- Self-sealing optical assembly constructed of optical-grade silicone with 93% typical lighting transmittance
- -40°C to +50°C ambient operating temperature options
- Standard AC input voltage of 120-277V 50/60 Hz; up to 480V available
- Isolated 0-10V dim-to-off with standby power ≤ 1.5W (standard) and PWM/3-timer-modes dimmable (optional)
- Power factor of 0.90 min
- Total harmonic distortion of 20% max
- Drivers include integral input Surge Protection of Differential Mode 6kV, Common Mode 10kV per EN 61000-4-5
- KB4&6: Thermally protected secondary 20kA surge suppression (optional)
- KB8: Thermally protected secondary 10kA surge suppression (optional)
- Always-on auxiliary power: 12VDC, 200mA
- Local specifying engineer recommended for product selection and local compliance
- Licensed electrician required for installation

Power & Control Options

- RGB color mixing and DMX integrations
- Dynamic scene entertainment packages
- Synapse® wireless system for large-scale control of zones, dimming, schedules, and sensors
- Wired and wireless configurations available
- Turnkey factory commissioning with on site support options

Light Poles & Arms

- WiLL offers one of the most comprehensive light pole, bracket, and arm catalogs in the industry
- Aluminum, steel, fiberglass, and concrete materials
- Custom fabrication, finishing, and accessories available
- Dedicated light pole application support team

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

308 N. Brooke St. | Fond du Lac, WI 54935
quotes@willbrands.com | www.willbrands.com
©2023

WISCONSIN LIGHTING LAB®

EPA Chart

Base Model	0° Tilt	10° Down Tilt	20° Down Tilt	25° Down Tilt	15° Up Tilt	25° Up Tilt
WS-KB4	1.39	1.39	1.39	1.39	1.39	1.46
WS-KB6	1.43	1.39	1.39	1.57	1.7	2.1
WS-KB8	1.85	1.54	1.69	2.06	2.26	2.75

Specifications & Typical Lumen Output

Full White

Base Model	Fixture Weight (Onboard Drivers) (lb)	Fixture Weight (Remote Drivers) (lb)	System Watts (W)	Engine Qty	Drive Current (A)	Lumens	lm/W
WS-KB4-470	38	32	442	4	2.0	57,700	131
WS-KB6-630	49	41	628	6	1.9	85,000	135
WS-KB8-940	63	51	884	8	2.0	115,000	130

Full RGB Tuning

Base Model	Fixture Weight (Onboard Drivers) (lb)	Fixture Weight (Remote Drivers) (lb)	System Watts (W)	Engine Qty	Drive Current (A)	Max RED Estimate (629nm typ.)		Max GREEN Estimate (530nm typ.)		Max BLUE Estimate (475nm typ.)	
						Lumens	lm/W	Lumens	lm/W	Lumens	lm/W
WS-KB4-250	38	32	246	4	0.5	5,768	64	8,060	106	3,392	42
WS-KB6-370	49	41	370	6	0.5	8,652	64	12,090	106	5,088	42
WS-KB8-500	63	51	493	8	0.5	11,536	64	16,120	106	6,784	42

White + RGB Combo Tuning

Base Model	Fixture Weight (Onboard Drivers) (lb)	Fixture Weight (Remote Drivers) (lb)	System Watts (W)	Engine Qty (WHITE)	Engine Qty (RGB)	Max RED Estimate (629nm typ.)		Max GREEN Estimate (530nm typ.)		Max BLUE Estimate (475nm typ.)		Max WHITE Estimate	
						Lumens	lm/W	Lumens	lm/W	Lumens	lm/W	Lumens	lm/W
WS-KB4-360	38	32	358	2	2	2,884	64	4,030	106	1,696	42	28,850	131
WS-KB6-520	49	41	519	3	3	4,326	64	6,045	106	2,544	42	42,500	135
WS-KB8-715	63	51	716	4	4	5,768	64	8,060	106	3,392	42	57,500	130

Note: Typical lumen values are based on lab and simulated photometric tests. Actual performance may differ resulting from optical configuration, color temp and CRI, glare management, owner environment, and application.
Note: Data based on 25°C ambient operating temperature.

Lumen Multiplier & Maintenance (Full WHITE)

Ambient Temperature	Lumen Multiplier	TM-21 Lumen Maintenance (50,000 Hours)	Calculated L90 (hrs)	Calculated L70 (hrs)
0°C / 32°F	1.04	91.71	60,000	206,000
10°C / 50°F	1.02	91.71	60,000	206,000
25° C / 77°F	1.00	91.71	60,000	206,000
30°C / 86°F	0.99	91.71	60,000	206,000
35°C / 95°F	0.99	90.95	55,000	188,000
40° C / 104°F	0.98	90.12	50,000	171,000
45° C / 113°F	0.96	89.26	46,000	157,000
50°C / 122°F	0.96	88.35	42,000	144,000

Current (A)			
Voltage	442W	628W	884W
Input Current @ 120V (A)	3.68	5.23	7.37
Input Current @ 208V (A)	2.13	3.02	4.25
Input Current @ 240V (A)	1.84	2.62	3.68
Input Current @ 277V (A)	1.60	2.27	3.19
Input Current @ 347V (A)	1.27	1.81	2.55
Input Current @ 480V (A)	0.92	1.31	1.84

Note: Values calculated according to IESNA TM-21-11 methodology.

Photometric Diagrams

LEGEND
■ 0.5 fc ■ 2.0 fc ■ 5.0 fc ■ 10 fc ■ 25 fc

Simulated per IESNA LM-63-1995
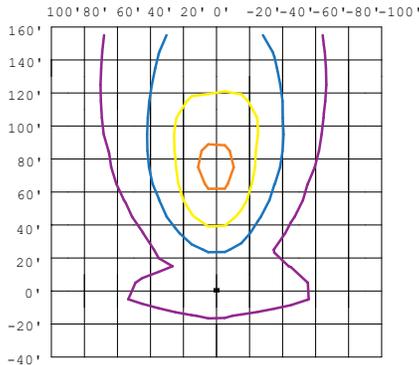
630W KB6
(5N) 25° Narrow Sport
50' Height @ 0° Up Tilt
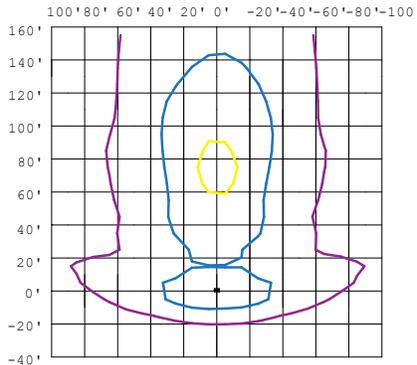
630W KB6
(45) 45° Narrow Sport
50' Height @ 0° Up Tilt
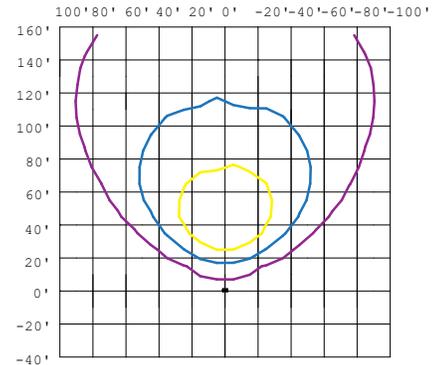
630W KB6
(70) 70° Medium Sport
50' Height @ 0° Up Tilt

Specifications subject to change without notice.
Rev. V08012023
Page: 3 of 8

308 N. Brooke St. | Fond du Lac, WI 54935
quotes@willbrands.com | www.willbrands.com
©2023

WILL WISCONSIN LIGHTING LAB®

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

■ Dimensional Diagrams (Light Fixture)

KB4

12.4 in.

27.5 in.

8.4 in.

KB6

18.0 in.

27.5 in.

8.4 in.

KB8

23.5 in.

27.5 in.

8.4 in.
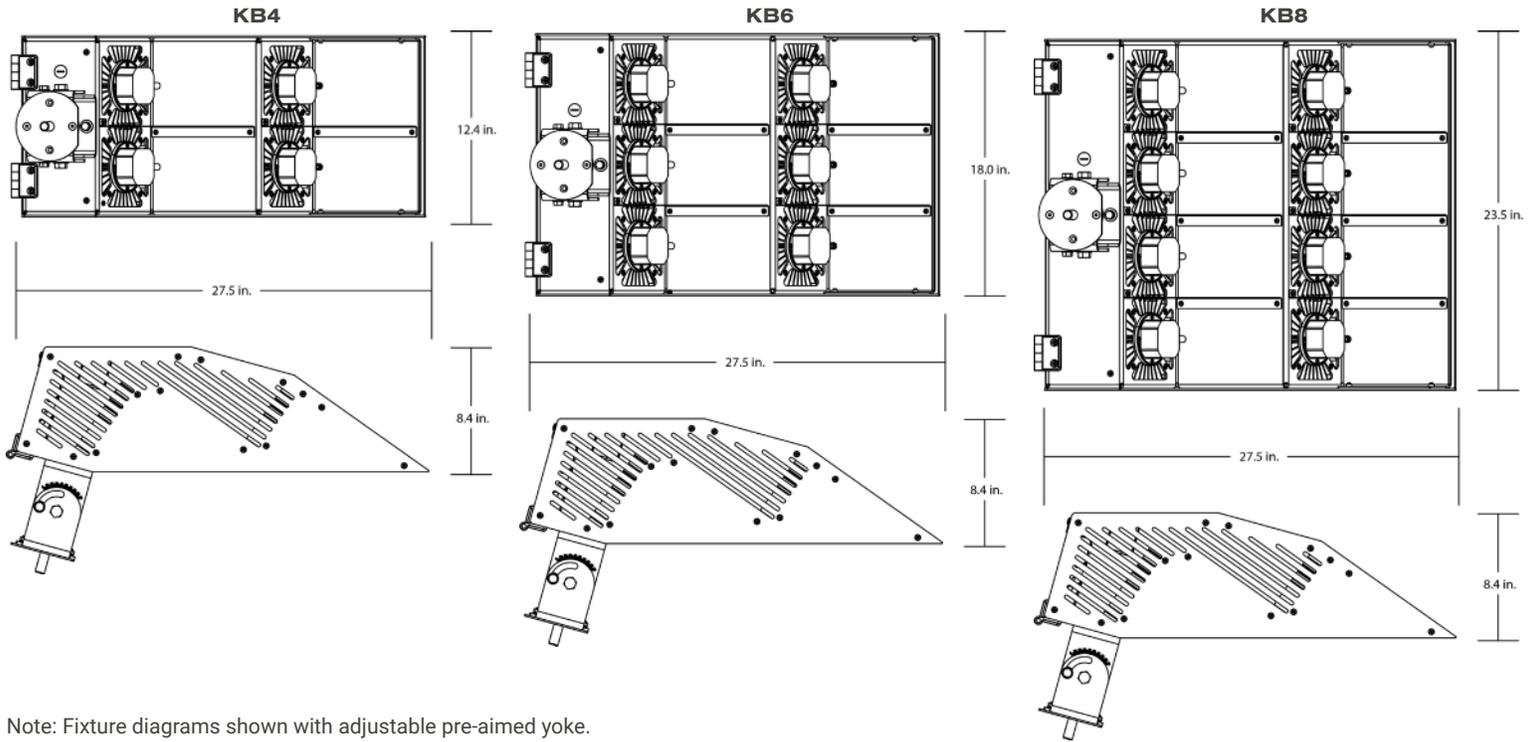
Note: Fixture diagrams shown with adjustable pre-aimed yoke.

6.1 in.

4.9 in.

4.4 in.

GRADE 8 STEEL, 5/8"-11
THREAD SIZE, 2-1/4" LONG,
FULLY THREADED

FLAT SIDE TO BE PARALLEL
WITH CROSS ARM EDGE

Adjustable Pre-Aimed Yoke

4.43 in.

3.65 in.

5.95 in.

Trunnion Yoke Mount
(KB4 & KB6 Only)

6.47 in.

3.64 in.

3.36 in.

Slipfitter Mount
(KB4 & KB6 Only)

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

WILL WISCONSIN LIGHTING LAB®
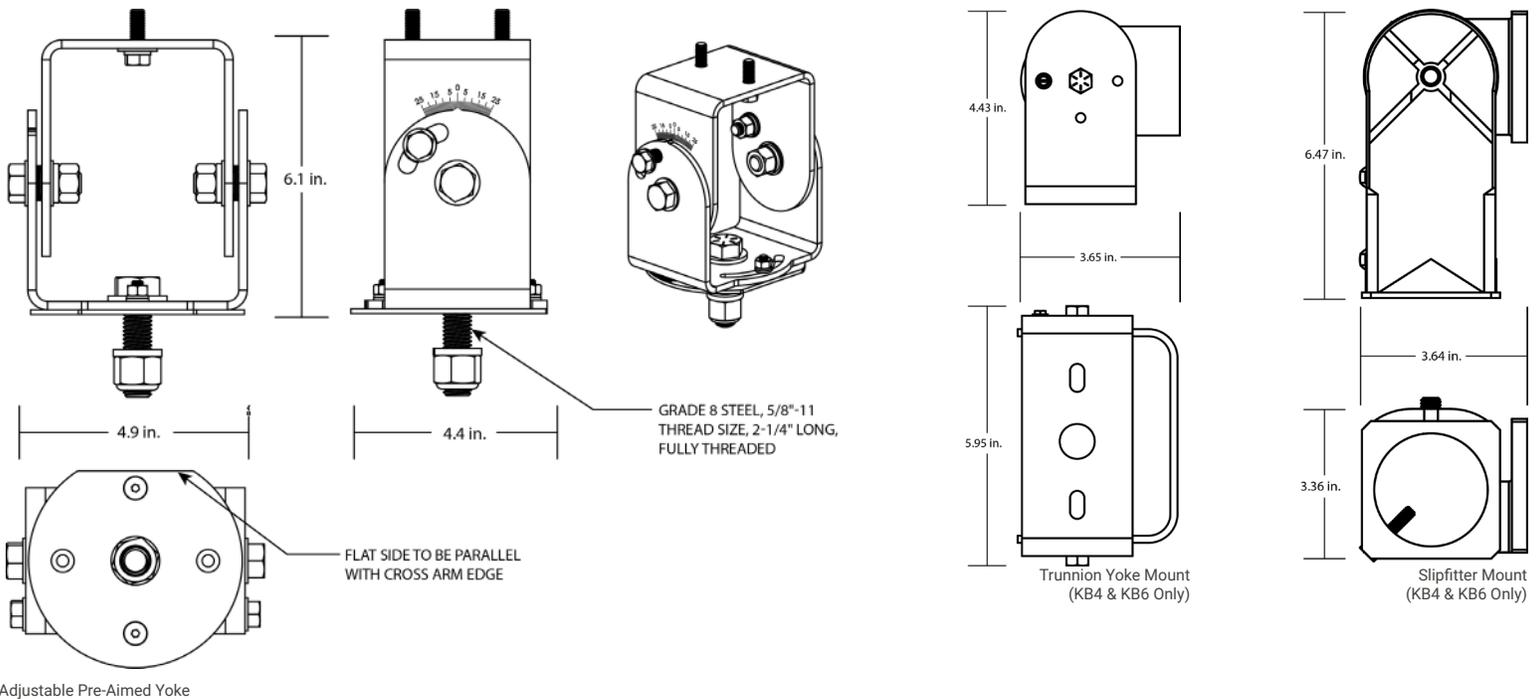
■ Ordering Information (Light Fixture)

Ex: WS-KB6-630-57-RP-5N-BC-APYH-WHP15NP-SS

Product Family	Design	Performance (Watts = Typical Lumens)	Color Temp	Voltage	Distribution	Finish Color
WS = WiLLsport®	KB4 = 4 Engine Chassis (Outdoor Wet)	470 = 60,000	57 = 5700K, 70 CRI	RP = Remote Power/Drivers	5N = 25° Narrow Sport	BK = Black Anodized (Standard)
	KB6 = 6 Engine Chassis (Outdoor Wet)	630 = 85,000	578 = 5700K, 80 CRI	MV = 120-277V	5N70 = 25°/70°Combo	SV = Silver Anodized (Custom)
	KB8 = 8 Engine Chassis (Outdoor Wet)	940 = 115,000	50 = 5000K, 70 CRI	HV = 277-480V	45 = 45° Medium Sport	BC = 2-Color Combo Branding Upgrade (Custom)
	KB4A = 4 Engine Chassis (Indoor Dry/Damp)	360 = x2 WHITE + x2 RGB	40 = 4000K, 70 CRI	CV = Custom	70 = 70° Medium Sport	RAL = Custom RAL Match (Custom)
	KB6A = 6 Engine Chassis (Indoor Dry/Damp)	520 = x3 WHITE + x3 RGB	RGB = All RGB		5N45 = 25°/45°Combo	
	KB8A = 8 Engine Chassis (Indoor Dry/Damp)	715 = x4 WHITE + x4 RGB	CT = Custom		5M = 100° Medium Sport	
		250 = x4 RGB			CD = Custom	
		370 = x6 RGB				
		500 = x8 RGB				
		CW = Custom				

Options & Accessories (Add as Suffix)			
Mounting	**Option**	**Option**	**Accessories**
APY = Adjustable PreAimed Yoke	WHP3NP = 2' Cord w/o Plug, Stripped Pigtail	SRG27720 = 20kA Surge Suppressor (Field Replaceable), 120-277V [Onboard KB4&6 Only]	PTT = 2.38" OD Tenon Adapter
APYH = Adjustable PreAimed Yoke (Hanging Config Below Crossarm)	WHP7NP = 6' Cord w/o Plug, Stripped Pigtail	SRG48020 = 20kA Surge Suppressor (Field Replaceable), 347-480V [Onboard KB4&6 Only]	EXT = Extension Plate For APY (Common For Back-To-Back Crossarm Apps)
SF = 2.38" OD Slipfitter (KB4 & KB6 Only)	WHP11NP = 10' Cord w/o Plug, Stripped Pigtail	SRG27710 = 10kA Surge Suppressor (Field Replaceable), 120-277V [Onboard KB8 Only]	STUDL = 5/8-11x6", Grade 8, Zinc Yellow-Chromate Plated, Nut, Washer, and Lock Washer
TR = Trunnion Yoke (KB4 & KB6 Only)	WHP15NP = 14' Cord w/o Plug, Stripped Pigtail	SRG48010 = 10kA Surge Suppressor (Field Replaceable), 347-480V [Onboard KB8 Only]	PDH = Pole Top Power Distribution Hub
CM = Custom	NAT = Natatorium Application (Wet Rated, 316 Stainless Hardware, Anti-Galvanic Corrosion Paste, IP67 Silicone LED Module, Anodized Aluminum Chassis)		WGKB-4/6/8 = KB4 Wireguard (Common For Uplights, Wattage Specific)
			SS-4/6/8 = Spill Sponge Louvers, Added Glare Management (Wattage Specific)
			GC-4/6/8 = Glare Cup Beam Control (Wattage Specific)
			CH = Safety Chain (Common for Arenas)
			GFX = Wireless DMX Lighting Control System (Consult Factory)
			GFM = Wireless Mesh Lighting Control System (Consult Factory)

Note: Custom products, configurations, options, and accessories available from factory.

Tenon Adapter

6.4 in.

ID 2.5 in.
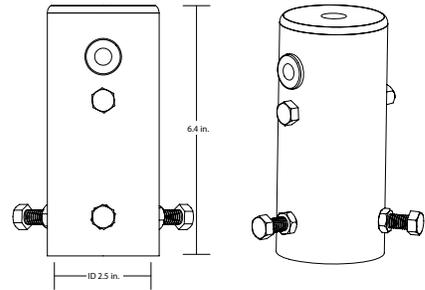
WHITE/RGB Shown

Pole Top Power Distribution Hub

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

WILL | WISCONSIN LIGHTING LAB®
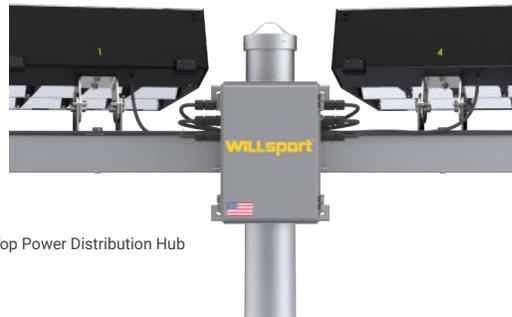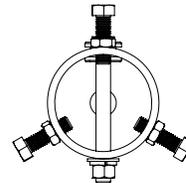
Ordering Information (Optional Remote PWR-CTL)

Ex: WS-RPCN-6W-8-MV-LG-PBS-GFX

Product Family	Design	Fixture Model	Fixture Count (Per Pole)		Voltage	Finish Color
WS = WiLLsport®	RPCN = Remote Power-Control System (New Pole Install)	4W = KB4-470	1	2	MV = 120-277V	LG = Light Gray (Standard)
	RPCE = Remote Power-Control System (Existing Pole Install)	6W = KB6-630	3	4	HV = 277-480V	BC = 2-Color Combo Branding Upgrade (Custom)
		8W = KB8-940	5	6	CV = Custom	RAL = Custom RAL Match (Custom)
		CW = Custom	7	8		
			9	10		
			11	12		
			13	14		
			15	16		
			17	18		
			19	20		
			CN = Custom			

Options & Accessories (Add as Suffix)

| Mounting	Option
PBS = Pole Banding Straps	GFX = Wireless DMX Lighting Control System (Consult Factory)
CM = Custom	GFM = Wireless Mesh Lighting Control System (Consult Factory)

Note: Custom products, configurations, options, and accessories available from factory.

Example Remote Power-Control Cabinet (Exact Specifications Will Vary)
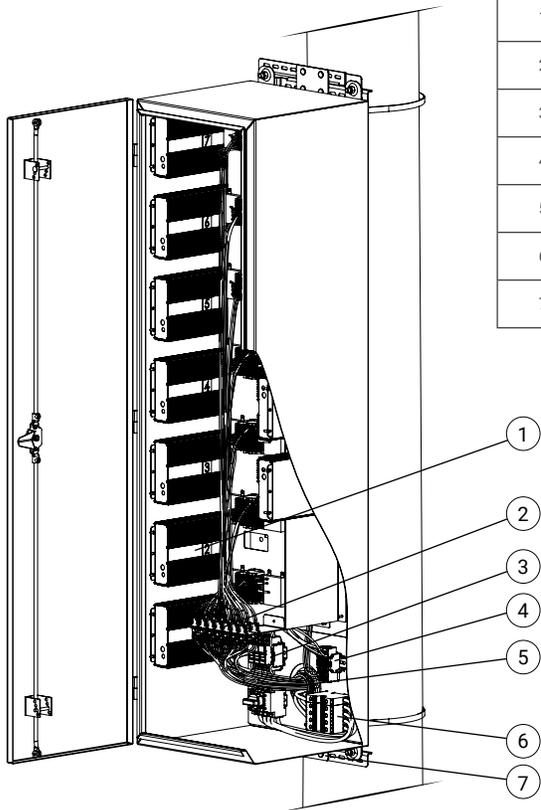
| ITEM NO.	COMPONENT
1	LED DRIVER
2	WIRING HARNESS CONNECTIONS
3	IN-LINE FUSES
4	TYPE 2 SPD (NOT PICTURED)
5	COUPLING (WIRE ENTRANCE)
6	TERMINAL BLOCKS
7	BAND-WRAP BRACKET

Standard Wiring Harness (Exact Specifications Will Vary)
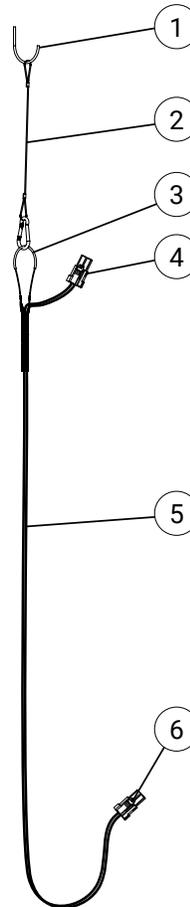
ITEM NO.	COMPONENT
1	STRAIN-RELIEF HOOK (ON POLE)
2	STRAIN-RELIEF CABLE
3	STRAIN-RELIEF CONNECTOR
4	QUICK-CONNECT PLUG (UPPER)
5	WIRING HARNESS
6	QUICK-CONNECT PLUG (LOWER)

Specifications subject to change without notice.
Rev. V08012023
Page: 6 of 8
308 N. Brooke St. | Fond du Lac, WI 54935
quotes@willbrands.com | www.willbrands.com
©2023

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

Remote PWR-CTL Detail (Optional)

Example Assembly
(Exact Specifications May Vary)
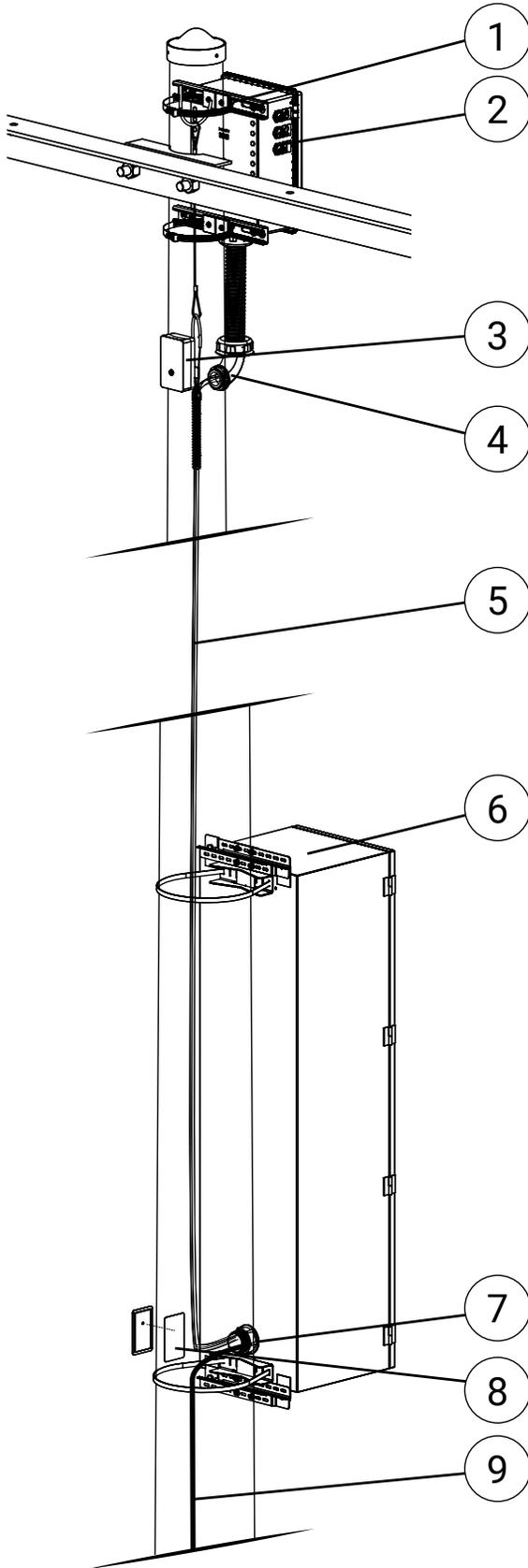
Upper Power Hub & Lower Power-Control Cabinets

- Top hub: polycarbonate enclosure w/ NEMA 1, 2, 4, 4X, and IP66 rating
- Labeled connections for fixtures on cross arm(s)
- Lower aluminum industrial power-control cabinet with NEMA 3R rating
- Small, medium, large, and custom cabinet configurations available

ITEM NO.	COMPONENT
1	BAND-WRAP BRACKET
2	UPPER CONNECTION PANEL
3	ADDITIONAL HANDHOLE
4	UPPER COUPLING
5	WIRING HARNESS
6	LOWER REMOTE DRIVER PANEL
7	LOWER COUPLING
8	ADDITIONAL HANDHOLE
9	INCOMING CONDUCTORS

PR-2023-001080 (CUP, DR) - Exhibit 9c-ISMND - Appendix B

WILL | WISCONSIN LIGHTING LAB®