

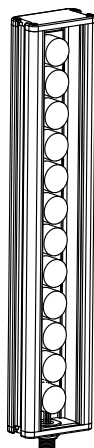
# High-Power Unsealed Linear Array Lights



## Datasheet

Lighting for use with Vision Systems

To view or download the latest technical information about this product, including specifications, dimensions, accessories, and wiring, see <http://www.bannerengineering.com>.



- Four high-intensity, visible wavelengths, plus IR and UV
- The following array lengths are available:
  - 145 mm (5.7 in)
  - 290 mm (11.4 in)
  - 435 mm (17.7 in)
  - 580 mm (22.8 in)
  - 870 mm (34.2 in)
  - 1160 mm (45.6 in)
- High-power, solid-state LED array; continuous or strobed operation is selectable via sensor software (P4 models) or via hookup
- Optically isolated strobe signal
- Active High or Active Low strobe models available
- LEDs directly illuminate target
- Lens angle of  $\pm 6.5^\circ$  on visible and IR models, lens angle of  $\pm 5^\circ$  on UV 395 nm models, reflector cup angle of  $\pm 15^\circ$  on UV 365 nm models
- Three window materials from which to choose: clear acrylic, clear glass, and clear diffusing acrylic
- Maintenance-free, rugged construction
- Built-in constant current regulation
- Very even light pattern as close as 76.2 mm (3 in)

## Model Key

Light Source	LED Color	Linear Array	Array Length	Housing	Window Material <sup>1</sup>	Relative Intensity	Intensity Control	Connector
LED	R	LA	145	X	P	6 —	X	Q
	R = Red W = White B = Blue G = Green I = IR UV365 = UV365 nm UV395 = UV395 nm		145 mm 290 mm 435 mm 580 mm 870 mm 1160 mm	X = IP50	P = Clear Plastic G = Glass D = Diffuse Plastic		X = Not Adjustable	Q = QD

The following caution applies to UV365 nm models:



### CAUTION:

Risk Group 1: UV Emitted from this product.

Minimize exposure to eyes or skin. Use appropriate shielding and eye protection. Risk Group 1 (RG 1) products are safe for most use applications, except for very prolonged exposures where direct ocular exposures may be expected.

- IEC 62471

The following caution applies to UV395 nm models:



### CAUTION:

Risk Group 2: UV Emitted from this product.

Eye or skin irritation may result from exposure. Use appropriate shielding and eye protection. Risk Group 2 (RG 2) products generally do not pose a realistic optical hazard if aversion responses limit the exposure duration or where lengthy exposures are unrealistic.

- IEC 62471

<sup>1</sup> UV365 is only available in models with a glass window.



## Wiring

Wire Purpose	Cable Wire Color <sup>2</sup>	Wire Connections	PresencePLUS Pro Controller Terminal Block
Power Wires	Brown (1)	+24 V dc	Pin 01 <sup>3</sup>
	Blue (3)	common	Pin 02
Strobe Polarity Control	Gray (5)	Active Low: open	Pin 02 or open
		Active High: connect to common (Blue wire)	
Strobe Voltage Wires	White (2)	Active Low: 0 V dc = ON      +5 V dc to 24 V dc = OFF	Pin 04
		Active High: 0 V dc = OFF      +5 V dc to 24 V dc = ON	
	Black (4)	Strobe common	Pin 02

Figure 1. Pinouts for Mating Cable



NOTE: Connection to earth ground recommended.

## Specifications

### Supply Voltage and Current

145 mm Models: 24 V dc  $\pm$  10% at 500 mA maximum  
 290 mm Models: 24 V dc  $\pm$  10% at 1 A maximum  
 435 mm Models: 24 V dc  $\pm$  10% at 1.5 A maximum  
 580 mm Models: 24 V dc  $\pm$  10% at 2 A maximum  
 870 mm Models: 24 V dc  $\pm$  10% at 3 A maximum  
 1160 mm Models: 24 V dc  $\pm$  10% at 4 A maximum  
 Strobe Voltage: 5 V dc to 24 V dc  
 Built-in constant current regulator for LEDs

### Light Source

LED Color	Wavelength
Infrared	850 nm
Red	620 nm to 630 nm
Blue	465 nm to 485 nm
Green	520 nm to 535 nm
White	5000 K to 8300 K
UV	365 nm
	395 nm

### Operating Conditions

0 °C to +50 °C (+32 °F to +122 °F)

### Connections

Integral 5-pin M12/Euro-style male quick disconnect (QD), accessory cordset required

### Construction

Housing: black anodized aluminum  
 Window: acrylic or glass, depending on model

### Mounting

4 M5 T-nuts included, brackets available

### Useful Life

When operated within specifications, output will decrease less than 30% after 50,000 hours for visible and IR models; 20,000 hours for UV models

### Environmental Rating

IEC IP50

### Certification



## Optical Data

Light Characteristic: Clear and Diffuse Window

Values shown are typical at 25 °C.

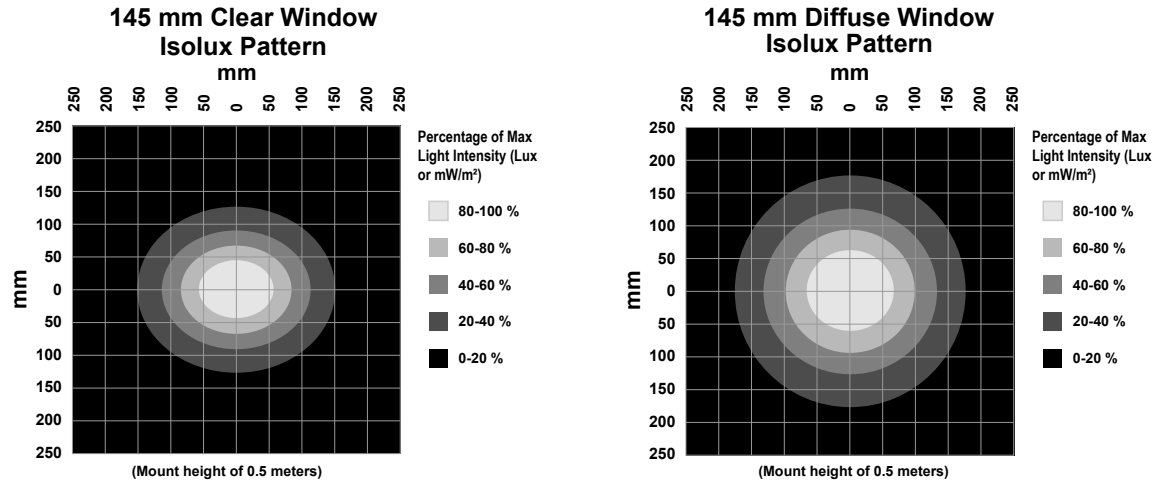
Lighted Length (mm)	Lumens				mWatts		
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>4</sup>
145	580	445	275	205	895	1165	610
290	1160	890	550	410	1790	2330	1220
435	1740	1335	825	615	2685	3495	1830
580	2320	1780	1100	820	3580	4660	2440
870	3480	2670	1650	1230	5370	6990	3660
1160	4640	3560	2200	1640	7160	9320	4880

<sup>2</sup> For Banner-supplied wire.

<sup>3</sup> When connecting the light to a PresencePLUS Pro controller terminal block, the controller supply must be 24 V dc  $\pm$  10%.

<sup>4</sup> Only available in models with a glass window.

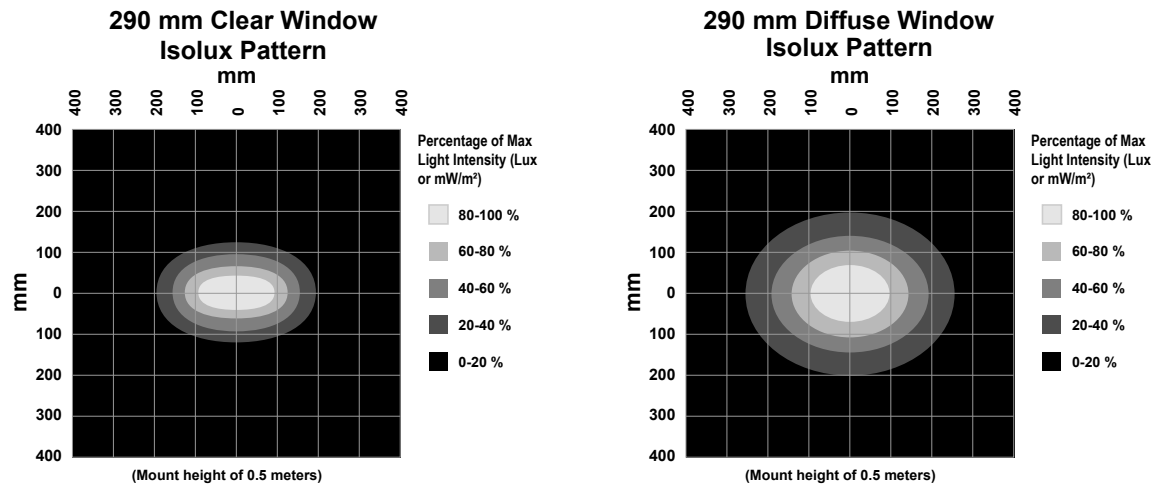
## 145 mm Models



Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>5</sup>	Vertical (Spread 13.8°)	Horizontal (Spread 21.4°)
0.25	41,560	31,887	19,705	14,689	64,131	83,478	43,710	0.06	0.09
0.50	17,020	13,058	8,070	6,016	26,264	34,187	17,900	0.12	0.19
1.00	5,220	4,005	2,475	1,845	8,055	10,485	5,490	0.24	0.38

## 290 mm Models



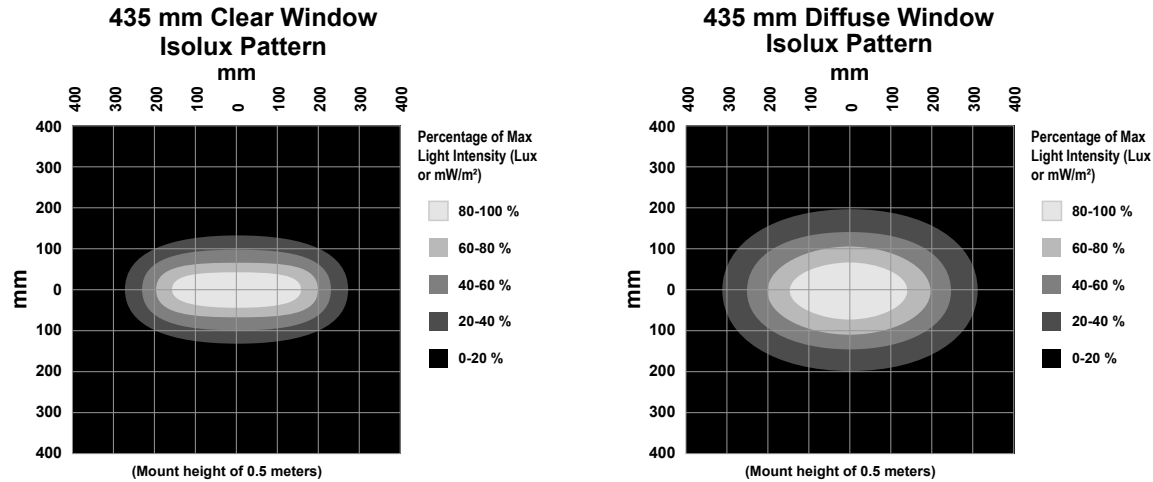
Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>6</sup>	Vertical (Spread 13.8°)	Horizontal (Spread 21.4°)
0.25	45,220	34,695	21,441	15,983	69,779	90,830	47,559	0.06	0.09
0.50	23,420	17,969	11,104	8,278	36,139	47,042	24,631	0.12	0.19
1.00	8,930	6,851	4,234	3,156	13,780	17,937	9,392	0.24	0.38

<sup>5</sup> Only available in models with a glass window.

<sup>6</sup> Only available in models with a glass window.

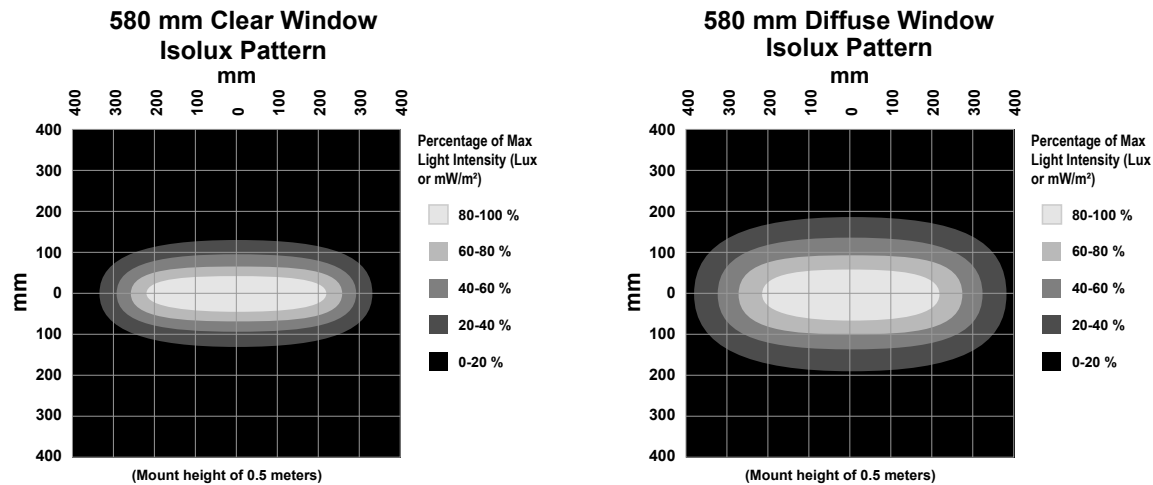
## 435 mm Models



Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>7</sup>	Vertical ( Spread 13.8°)	Horizontal ( Spread 21.4°)
0.25	45,220	34,695	21,441	15,983	69,779	90,830	47,559	0.06	0.09
0.50	23,420	17,969	11,104	8,278	36,139	47,042	24,631	0.12	0.19
1.00	9,740	7,473	4,618	3,443	15,030	19,564	10,244	0.24	0.38

## 580 mm Models



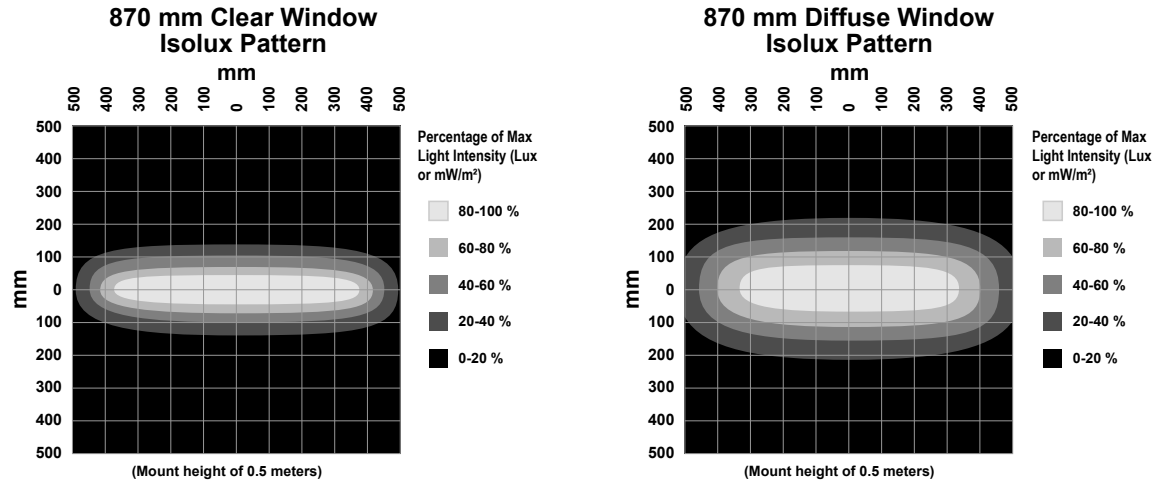
Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>8</sup>	Vertical ( Spread 13.8°)	Horizontal ( Spread 21.4°)
0.25	45,220	34,695	21,441	15,983	69,779	90,830	47,559	0.06	0.09
0.50	23,420	17,969	11,104	8,278	36,139	47,042	24,631	0.12	0.19
1.00	11,550	8,862	5,476	4,082	17,823	23,200	12,147	0.24	0.38

<sup>7</sup> Only available in models with a glass window.

<sup>8</sup> Only available in models with a glass window.

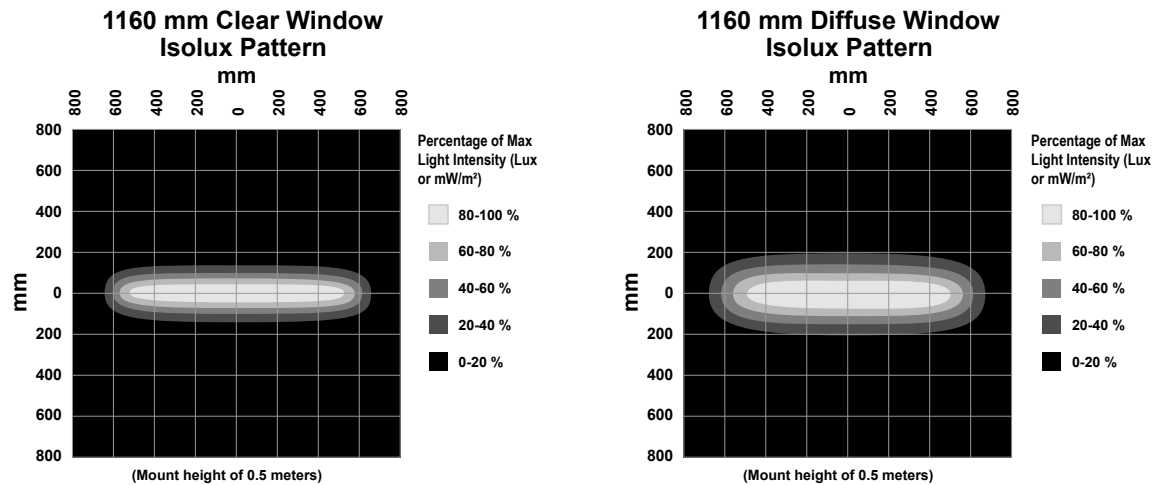
## 870 mm Models



Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>9</sup>	Vertical (Spread 13.8°)	Horizontal (Spread 21.4°)
0.25	45,220	34,695	21,441	15,983	69,779	90,830	47,559	0.06	0.09
0.50	23,420	17,969	11,104	8,278	36,139	47,042	24,631	0.12	0.19
1.00	11,800	9,053	5,595	4,171	18,209	23,702	12,410	0.24	0.38

## 1160 mm Models



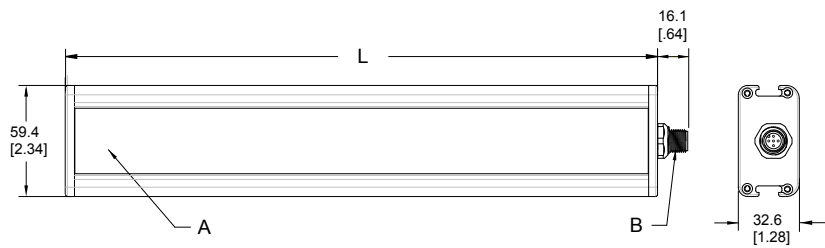
Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

Distance (m)	Max Center Beam Lux (lux)				Max Center Beam Irradiance (mW/m <sup>2</sup> )			Beam Width (m)	
	Cool White	Green	Red	Blue	IR	UV395	UV365 <sup>10</sup>	Vertical (Spread 13.8°)	Horizontal (Spread 21.4°)
0.25	45,220	34,695	21,441	15,983	69,779	90,830	47,559	0.06	0.09
0.50	23,420	17,969	11,104	8,278	36,139	47,042	24,631	0.12	0.19
1.00	12,330	9,460	5,846	4,358	19,026	24,766	12,968	0.24	0.38

<sup>9</sup> Only available in models with a glass window.

<sup>10</sup> Only available in models with a glass window.

Dimensions



Array Length	Length "L"
145 mm	171 mm (6.73 in)
290 mm	316.5 mm (12.46 in)
435 mm	462 mm (18.19 in)
580 mm	607.5 mm (23.92 in)
870 mm	898.5 mm (35.37 in)
1160 mm	1189.5 mm (46.83 in)

A = Window (glass or acrylic, depending on model)  
B = 5-pin Euro-style male connector

All measurements are listed in millimeters [inches], unless noted otherwise.

Accessory Cordsets

5-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC20-506	1.83 m (6 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
MQDC20-515	4.57 m (15 ft)			
MQDC20-530	9.14 m (30 ft)			

Accessory Brackets

<p><b>SMBLAXRA</b></p> <ul style="list-style-type: none"><li>Right-angle stainless steel bracket</li><li>May be used individually or in combination with SMBLAXU to provide swivel adjustment</li></ul> <p>Includes:</p> <ul style="list-style-type: none"><li>2 Brackets</li><li>4 M5 screws (socket drive, button head)</li><li>4 M5 T-nuts</li></ul>	<p><b>SMBLAXU</b></p> <ul style="list-style-type: none"><li>U-shaped stainless steel bracket</li><li>For use with SMBLAXRA to provide swivel adjustment</li></ul> <p>Includes:</p> <ul style="list-style-type: none"><li>2 Brackets</li><li>4 M5 screws (socket-drive, button head)</li><li>4 M5 T-nuts</li><li>Four each stainless steel ¼-20 screws (socket drive, button head), lock nuts, washers</li></ul> <p>Combination View</p>
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Filters (Optional)

Light filters are available in red, white, blue, green, infrared, and other options. Visit <http://www.bannerengineering.com> to determine which filter is best for your application and Vision system.

## Replacement Windows

Array Length	Clear Glass	Clear Acrylic	Diffuse Acrylic	White Diffuse Acrylic
145 mm	LEDLA145XW-G	LEDLA145XW-P	LEDLA145XCDW-P	LEDLA145XWDW-P
290 mm	LEDLA290XW-G	LEDLA290XW-P	LEDLA290XCDW-P	LEDLA290XWDW-P
435 mm	LEDLA435XW-G	LEDLA435XW-P	LEDLA435XCDW-P	LEDLA435XWDW-P
580 mm	LEDLA580XW-G	LEDLA580XW-P	LEDLA580XCDW-P	LEDLA580XWDW-P
870 mm	LEDLA870XW-G	LEDLA870XW-P	LEDLA870XCDW-P	LEDLA870XWDW-P
1160 mm	LEDLA1160XW-G	LEDLA1160XW-P	LEDLA1160XCDW-P	LEDLA1160XWDW-P

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