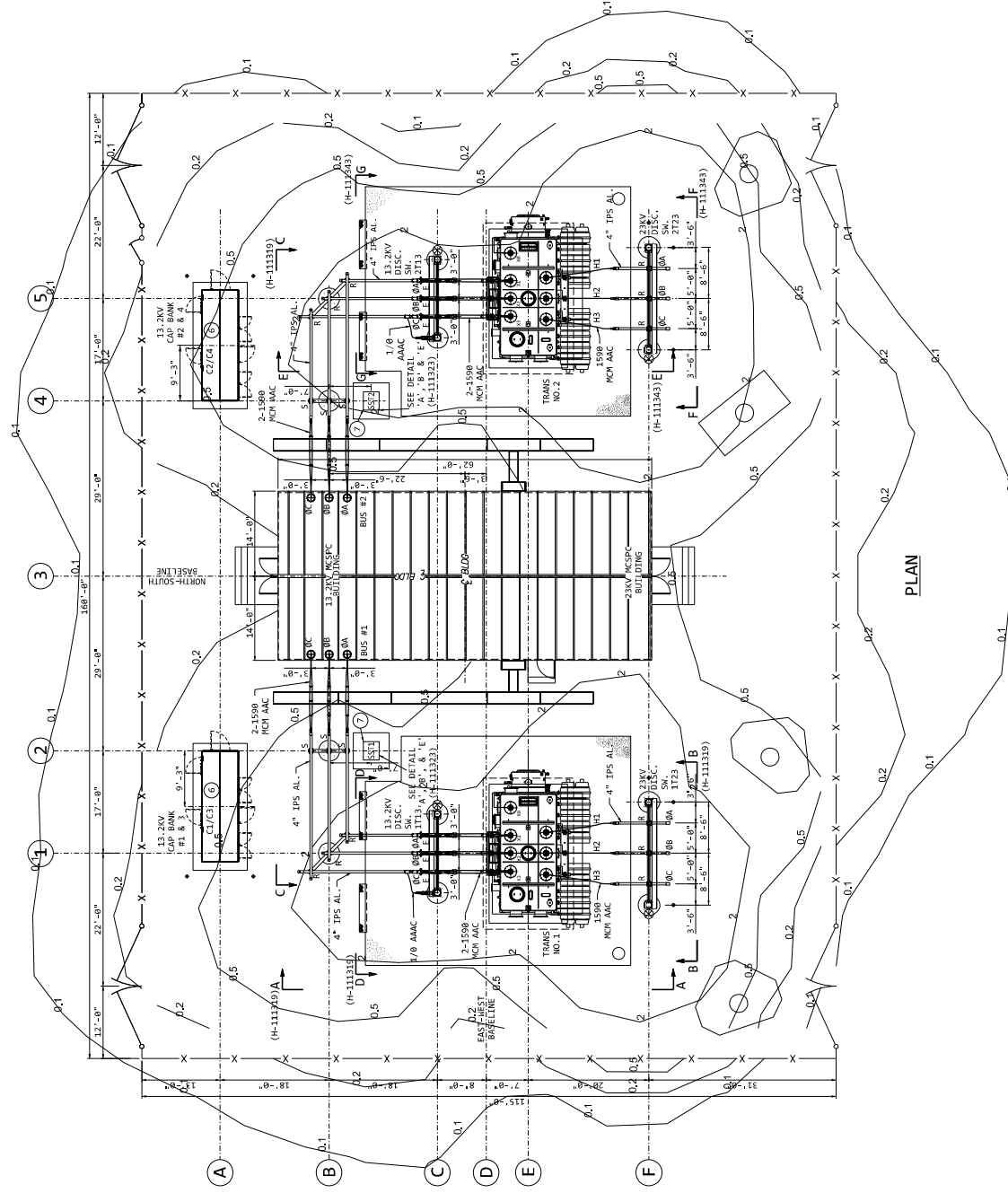




Plan View

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
13.2KV SW# 89-3	+	8.4 fc	10.8 fc	4.6 fc	2.3:1	1.8:1
13.2KV SW# 89-4	+	7.5 fc	10.0 fc	3.9 fc	2.6:1	1.9:1
13.2KV Transformer 1 Mobile SW	+	15.5 fc	18.8 fc	10.9 fc	1.7:1	1.4:1
13.2KV Transformer 2 Mobile SW	+	13.7 fc	16.7 fc	8.7 fc	1.9:1	1.6:1
23KV SW# 89-1	+	14.4 fc	30.3 fc	3.1 fc	9.8:1	4.6:1
23KV SW# 89-2	+	13.8 fc	30.3 fc	2.8 fc	10.8:1	4.9:1
SPILL AREA	+	0.0 fc	0.4 fc	0.0 fc	N/A	N/A
TRANSFORMER#1 CABINET	+	12.1 fc	19.5 fc	7.9 fc	2.5:1	1.5:1
TRANSFORMER#2 CABINET	+	10.1 fc	15.5 fc	7.0 fc	2.2:1	1.4:1
YARD AREA	+	2.0 fc	17.2 fc	0.1 fc	172.0:1	20.0:1



REFERENCE DRAWINGS

23/13-2KV BUS STRUCTURE ULTIMATE ARRANGEMENT	H-111329
23/13-2KV BUS STRUCTURE ELECTRICAL PLAN	H-111319
23/13-2KV BUS STRUCTURE CONDUIT PLAN	H-111324
23/13-2KV BUS STRUCTURE CONDUIT DETAILS	H-111326
23/13-2KV BUS STRUCTURE GROUNDING PLAN	H-111326
23/13-2KV BUS STRUCTURE GROUNDING DETAILS	H-111326
23/13-2KV BUS STRUCTURE PRIMARY DETAILS	H-111323
23/13-2KV CONTROL HOUSE LAYOUT	H-111327
MATERIAL LIST - ELECTRICAL ARRANGEMENT PLAN	H-2111327



CONCISE SUMMARY STATEMENT

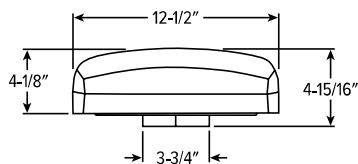
CONFIDENTIALITY STATEMENT

This document contains confidential and proprietary information of the company(s) named in the side block, aka National Grid ("National Grid"). It is to be used by authorized personnel of the company(s) named in the side block, and is not to be distributed to other contractors for National Grid solely in connection with the specific project for which it has been transmitted. Any other use, its transmission to third parties, or its reproduction is prohibited.

national arid

MASSACHUSETTS ELECTRIC COMPANY
HILLSIDE AVE. SUBSTATION NO. 66
BRIDGEVIEW, MASSACHUSETTS

23/13.2KV BUS STRUCTURE LIGHTING PLAN



Straight Arm Front view
EPA: 1.00/Weight: 20 lbs.

CATALOG #:

TYPE:

PROJECT:

FEATURES

- Contoured styling blends seamlessly with landscaping
- Precise light control with six standard NEMA distributions
- Versatile suite of architectural mounting arms
- Made Right Here® in the USA

SPECIFICATIONS

- HOUSING** – Die-cast aluminum enclosure, sealed to protect electrical components.
- THERMAL MANAGEMENT** – Integral die-cast aluminum heatsink provides passive thermal management. Rated -30°C to 40°C ambient operating temperature.
- OPTICAL SYSTEM** – Precision, injection-molded, refractive acrylic lensing produces standard NEMA floodlight distributions. Clear tempered glass lens.
- LED ASSEMBLY** – Circuit board design incorporates TVS (transient-voltage-suppression) diodes to protect against ESD events. ANSI 3000K, 4000K, and 5000K CCT, minimum 70 CRI LEDs.
- LED DRIVER** – Class 2 constant-current driver, 0-10V dimming.
- ELECTRICAL** – 120-277, 347, and 480 VAC input range; 50-60Hz; power factor >.90; THD <20% at full load. FCC Class A compliant. 10kA/10kV surge protection standard. L70 >50,000 hours per IES TM-21.
- FINISH** – Super durable polyester powder coat bonded to phosphate-free, multi-stage pretreated metal, meets and exceeds AAMA 2604 specifications for outdoor durability.
- MOUNTING** – Straight arm slip-fits ø2" (ø2-3/8" O.D.) tenon. Curved arm mounts to vertical surface or pole, downlight orientation only using cast adapter and mounting plate provided. Must be anchored to adequate structure that can safely support fixture weight. Fixture not designed to be mounted in horizontal orientation with glass facing upwards at 0 degrees.
- LISTINGS** –
 - cCSAus listed to STD 22.2 No 250.0 certified as luminaire suitable for wet locations.
 - IP66 rated.
 - Meets the American National Standard for Roadway and Area Lighting Equipment – Luminaire Vibration (ANSI C1363.31-2010). Straight arm fixture only.
 - RoHS compliant.
- WARRANTY** – 5-year limited warranty, see hew.com/warranty.

ORDERING EXAMPLE: VF2 - L70/750 - MF - SR - DBZ - OPTIONS - DIM - UNV

ORDERING INFO

SERIES	LUMENS ^[1]	CRI	CCT	DISTRIBUTION ^[2]
VF2	L57 5,700lm	7 70	30 3000K	NS Narrow spot (3H x 3V)
	L70 7,000lm		40 4000K	MF Medium flood (5H x 5V)
	L88 8,800lm		50 5000K	WF Wide flood (6H x 6V)
	L106 10,600lm			HS Horizontal spot (7H x 5V)
				VF Vertical flood (5H x 5V)
				HF Horizontal flood (7H x 5V)

MOUNTING ^[3]

- SR Straight arm
CU Curved arm ^[5]

FINISH OPTIONS ^[4]

- BLK Black (RAL #9004)
DBZ Dark bronze
DBR Medium bronze
GRAY Standard gray
SLV Satin aluminum (RAL #9006)
WHT White (RAL #9003)

OPTIONS ^[6]

- PC Factory-installed button-style photocell ^[7]
WG Wireguard, 11-gauge tempered steel with chrome powder-coat finish. ^[8]
FVS Flush vandal shield, 3/16" clear polycarbonate. ^[9]
VF2CS Cutoff shield ^[10]
VF2FS Full cutoff shield ^[11]

DRIVER

- DIM Dimming driver prewired for 0-10V low voltage applications

VOLTAGE

- 120 120V
208 208V
240 240V
277 277V
UNV 120-277V
347 347V
480 480V

ACCESSORIES ^[12]

MOUNTING

- VF2TA Threaded adapter ^[13]
STK Ground stake ^[14]

NOTES

- Lumen output based on 3500 CCT. Actual lumens may vary +/-5%, see page 2 for FIXTURE PERFORMANCE DATA.
- Additional lumen package available, see options.
- See page 2 for DISTRIBUTION DETAILS.
- See page 3 for MOUNTING DETAILS.
- See page 2 for FINISH OPTIONS.
- Vertical surface mount, downlight orientation only, includes cast adapter and mounting plate.
- See page 4 for OPTIONS DETAILS.
- 120V, 208V, 240V, or 277V only; must specify voltage.

- Factory-installed.
- Factory-installed.
- Field-installed.
- Field-installed.
- See page 4 for MOUNTING ACCESSORY DETAILS. Tenon mount available. See page 5 for TENON MOUNT ACCESSORY OPTIONS.
- SR Mounting only.
- SR Mounting only. Requires VF2TA option.



VF2 LED

Voltaire Architectural Flood Light – Medium

FIXTURE PERFORMANCE DATA

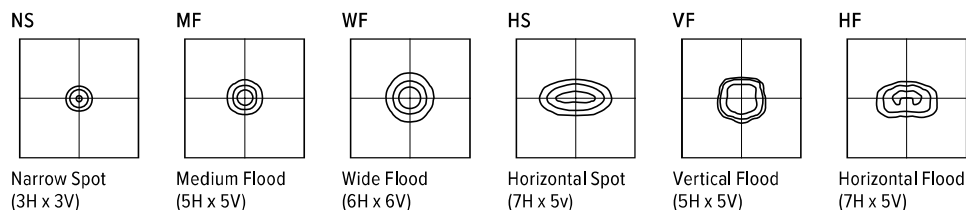
	WATTAGE	DISTRIBUTION	EFFICACY (lm/W)	FLUX (LM)	NEMA CLASSIFICATION	
					HORIZONTAL	VERTICAL
L57	43	NS	123	5296	3	3
		MF	133	5701	6	6
		WF	133	5711	6	6
		HS	124	5352	7	5
		VF	125	5360	5	5
		HF	122	5248	7	6
L70	55	NS	118	6512	3	3
		MF	127	7010	6	6
		WF	128	7023	6	6
		HS	120	6582	7	5
		VF	120	6592	5	6
		HF	117	6454	7	5
L88	75	NS	109	8175	3	3
		MF	117	8800	6	6
		WF	118	8816	6	6
		HS	110	8262	7	5
		VF	110	8275	5	5
		HF	108	8102	7	6
L106	98	NS	101	9857	3	3
		MF	108	10630	6	6
		WF	109	10649	6	6
		HS	102	9980	7	5
		VF	102	9995	5	6
		HF	100	9786	7	5

LUMEN MAINTENANCE

LUMEN PACKAGE	CCT	REPORTED L70 HOURS (TM-21)
L57	ALL	>60,000
L70		
L88		
L106	3000K	>46,000
	4000K & 5000K	>60,000

- Efficacy and flux shown are for 5000K CCT. Flux multipliers: 0.96 for 4000K, 0.86 for 3000K
- Photometrics tested in accordance with IESNA LM-79. Results shown are at 25°C ambient temperature.

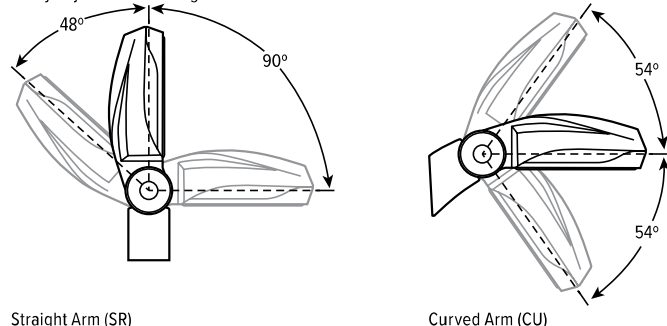
DISTRIBUTION DETAILS



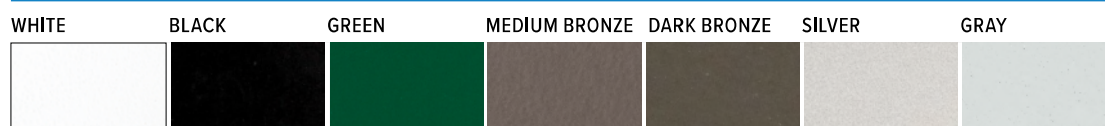
FIXTURE DETAILS

FIXTURE ADJUSTMENT DETAIL

Easily adjusts with locking teeth in 6° increments.



FINISH OPTIONS



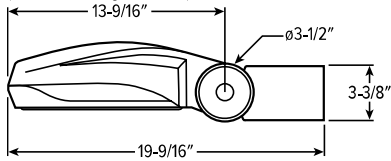
For custom color, please specify RAL code or a manufacturer code with description. All custom colors other than RAL require two sample swatches, minimum 1" square.

VF2^{LED} Voltaire Architectural Flood Light – Medium

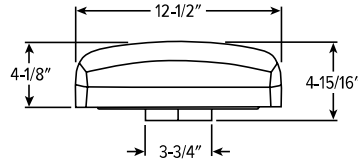
CROSS SECTIONS

STRAIGHT ARM

(EPA: 1.00/Weight: 20 lbs)



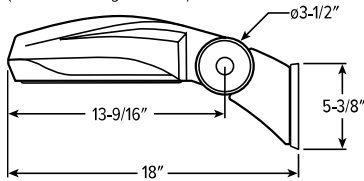
Side View



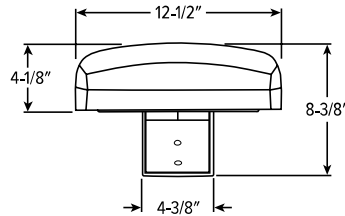
Front View

CURVED ARM

(EPA: 1.00/Weight: 20 lbs)



Side View

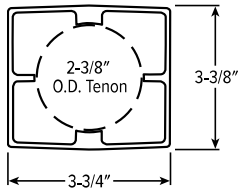


Front View

MOUNTING DETAILS

STRAIGHT ARM (SR) MOUNTING

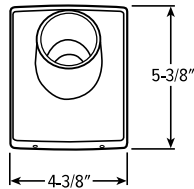
- Mounts horizontally or vertically to 2" (2-3/8" O.D.) tenon.
- Up or down light applications.
- 360° rotation on mounting tenon.
- Additional mounting accessories available. See page 4 for MOUNTING ACCESSORY DETAILS.



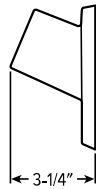
Fixture arm end view

CURVED ARM (CU) MOUNTING

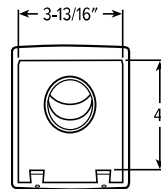
- Mounts to vertical surface or pole, downlight orientation only, using cast adapter and mounting plate provided.
- Must be anchored to adequate structure that can safely support fixture weight.



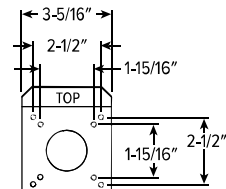
Adapter front view



Adapter Side View



Adapter back view



Mounting plate



VF2^{LED} Voltaire Architectural Flood Light – Medium

OPTIONS DETAILS

FVS



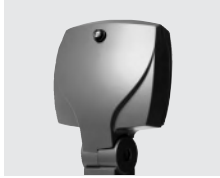
FVS Flush vandal shield, 3/16" clear polycarbonate, factory-installed. Fixture can accommodate only one face-mounted option.

WG



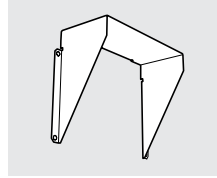
WG Wireguard, 11-gauge tempered steel with chrome powder-coat finish, factory-installed. Fixture can accommodate only one face-mounted option.

PC



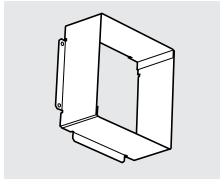
PC Factory-installed button-style photocell, (120V, 208V, 240V, or 277V only; must specify voltage)

CUTOFF SHIELD



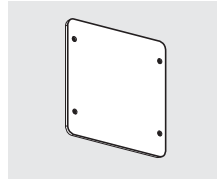
VF2CS-____ Cutoff shield, 1/16" thick aluminum, field-installed. Must specify finish. Includes (4) #6-32 screws. 9-5/8" x 7-11/16" x 3-9/16" EPA: 0.42/Weight: 0.42 lbs.
Example: **VF2CS-DBZ**

FULL CUTOFF SHIELD



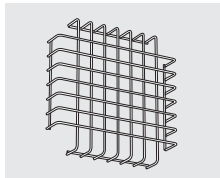
VF2FS-____ Full cutoff shield, 1/16" thick aluminum, field-installed. Must specify finish. Includes (4) #6-32 screws. 9-5/8" x 9-5/8" x 3-9/16" EPA: 0.42/Weight: 0.82 lbs.
Example: **VF2FS-DBZ**

VANDAL SHIELD KIT



VF2FVS Flush vandal shield kit, 3/16" clear polycarbonate, field-installed. Includes (4) #6-32 screws and clips. EPA: 0.02/Weight: 0.60 lbs.

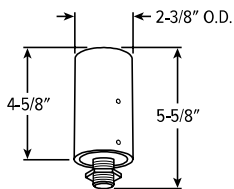
WIREGUARD KIT



WG-VF2 Wireguard kit, 11-gauge tempered steel with chrome powder-coat finish, field-installed. Includes (8) #6-32 screws and clips. EPA: 0.18/Weight: 0.69 lbs.

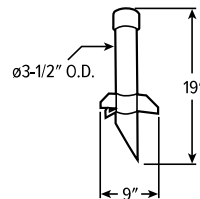
MOUNTING ACCESSORY DETAILS

THREADED ADAPTER



VF2TA 1/2" NPS stainless steel threaded nipple with hex locknut on a cast aluminum anodized $\varnothing$ 2-3/8" O.D. adapter
EPA: 0.00/Weight: 0.61 lbs.

GROUND STAKE



STK Ground stake, molded black plastic with integral splice compartment and 1/2" NPS threaded entry point for fixture mounting (requires VF2TA options, left)

