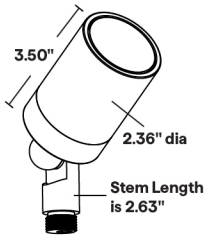
VOYA END MOUNT 2.5" COB STATIC WHITE

12VAC COB Flood/Accent LED





- Specification-grade, flood/accent lighting with best-in-class lumen output, color quality, dimming performance, and optical control
- Available in ultra-durable powder-coated 6061 aluminum, polished brass, or polished 316L stainless steel
- Flexible tree, surface, wall and ground mounting options support diverse installations
- High lumen output with peak color performance including CRI > 95 and R9 > 90.
- Field-adjustable output set on site via DIP switch
- Wet listed for exterior applications

1 PRODUCT	2 KNUCKLE	3 CRI	4 CCT	5 SNOOT	6 COB	7 BEAM ANGLE	8 MATERIAL	9 FINISH	10 WATTAGE	11 OUTPUT SETTING	12 WEEP HOLE	13 ACCESSORY 1	14 ACCESSORY 2	15 ACCESSORY 3
VOYA-EM-2.5-COB-12VAC-SW	ST													

Sample Part Number: **VOYA-EM-2.5-COB-12VAC-SW-ST-95-40-HR-COBSP-12-SS-P-09-N/A-N/A-LV-WW-N/A**

1 PRODUCT

VOYA-EM-2.5-COB-12VAC-SW	

2 KNUCKLE

ST	Standard

3 CRI

95	
90	

4 CCT

22	2200K
24	2400K
27	2700K
30	3000K
35	3500K
40	4000K

5 SNOOT

FL	Flush
HR	0.5" Regress
1R	1" Regress
30D	30 Degree
45D	45 Degree
60D	60 Degree
GZR	Grazer

6 COB

COBSP	Spot
COB	All Other
COB	All Other

7 BEAM ANGLE

12	12 Degree
16	16 Degree
23	23 Degree
37	37 Degree
51	51 Degree
GZR	Grazer

8 MATERIAL

A	6061 Aluminum Anodized and Powder Coated
B	Brass H59
SS	Stainless Steel 316L

9 FINISH

BG	Beige
BB	Black Bronze
BK	Black
BKT	Black Texture
BZ	Bronze
BZT	Bronze Texture
SL	Silver
WH	White
CU	Custom
P	Polished

Lead times differ. BZT parts are readily available. All other standard finishes are painted upon order. Custom finishes: consult factory

Brass and Stainless Steel have longer lead times: consult factory

10 WATTAGE

12	12.5 Watts
09	9.5 Watts
05	4.9 Watts

Refer to delivered lumen output on following pages

12W option includes on board dip switch for field adjustable output with 8 settings

Refer to delivered lumen output on following pages

11 OUTPUT SETTING

500MA	100% Output
375MA	75% Output
300MA	60% Output
250MA	50% Output
220MA	44% Output
190MA	38% Output
170MA	34% Output
150MA	30% Output
N/A	Not available for these wattages

Selection above is factory set. Current settings follow logarithmic reduction in output for linear perception, can be adjusted in the field

12 WEEP HOLE

WPH	Weep Hole
N/A	No Weep Hole

Not using a weep hole while aiming up will void warranty. FL and GZR snoots do not have weep holes. If FL or GZR is chosen, select N/A

13 ACCESSORY 1

SP	Spread Lens
LS	Linear Spread Lens
WW	Wall Wash Lens
LV	Honeycomb Louver
N/A	No Accessory

Retaining Ring included with each accessory. Accessories not compatible with GZR options.

14 ACCESSORY 2

SP	Spread Lens
LS	Linear Spread Lens
WW	Wall Wash Lens
LV	Honeycomb Louver
N/A	No Accessory

Retaining Ring included with each accessory. Accessories not compatible with GZR options.

15 ACCESSORY 3

SP	Spread Lens
LS	Linear Spread Lens
WW	Wall Wash Lens
LV	Honeycomb Louver
N/A	No Accessory

Retaining Ring included with each accessory. Accessories not compatible with GZR options.

5 year warranty | Warranty only valid with QTL power supplies | Field modifications void warranty | Data subject to change, all data has +/- 5% tolerance

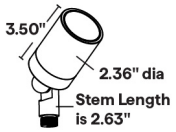
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Specification subject to change. Rev-11-02-26

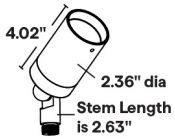
VOYA END MOUNT 2.5" COB STATIC WHITE

12VAC COB Flood/Accent LED

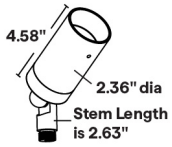
1 PRODUCT - DIMENSIONS



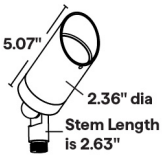
Flush Snoot (FL)



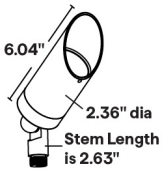
0.5" Regress Snoot (HR)



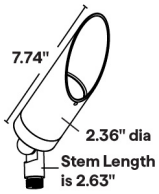
1" Regress Snoot (1R)



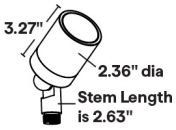
30 Degree Snoot (30D)



45 Degree Snoot (45D)



60 Degree Snoot (60D)



Grazer Snoot (GZR)
*Only to be used with GZR optics

6 DELIVERED LUMENS

Tested with VOYA-2.5-COB-12VAC-SW-ST-95-30-FL at 12W
Grazer COB and Beam Angle are tested with Grazer Snoot

COB - BEAM ANGLE	CCT	LUMENS	LM/W	PEAK INTENSITY (CD)	CRI Ra	CRI R9	TM30 Rf	TM30 Rg
COB - 16°	2997	795	64	6759	98	93	97	99
COB - 23°	3004	860	69	4655	98	93	97	99
COB - 37°	3011	845	68	2082	98	93	97	99
COB - 51°	3011	780	63	1070	98	93	97	99
COB - Grazer	3036	770	61	2804	98	93	97	99

CCT MULTIPLIERS	
2200K	0.81
2400K	0.88
2700K	0.92
3000K	1.00
3500K	1.04
4000K	1.08

WATTAGE MULTIPLIERS	
12W	1.00
9W	0.80
5W	0.38

Tested with VOYA-2.5-COB-12VAC-SW-ST-90-30-FL at 12W
Grazer COB and Beam Angle are tested with Grazer Snoot

COB - BEAM ANGLE	CCT	LUMENS	LM/W	PEAK INTENSITY (CD)	CRI Ra	CRI R9	TM30 Rf	TM30 Rg
COB - 16°	2980	874	69	7285	93	58	91	97
COB - 23°	2984	946	75	4972	93	58	91	97
COB - 37°	2995	937	74	2266	93	58	91	97
COB - 51°	2995	860	68	1162	93	58	91	97
COB - Grazer	3022	878	71	3107	93	58	91	97

CCT MULTIPLIERS	
2200K	0.80
2400K	0.90
2700K	0.95
3000K	1.00
3500K	1.05
4000K	1.04

WATTAGE MULTIPLIERS	
12W	1.00
9W	0.80
5W	0.40

Tested with VOYA-2.5-COBSP-12VAC-SW-ST-95-30-FL at 12W

COBSP - BEAM ANGLE	CCT	LUMENS	LM/W	PEAK INTENSITY (CD)	CRI Ra	CRI R9	TM30 Rf	TM30 Rg
COBSP - 12°	2988	733	62	10502	99	88	98	99

CCT MULTIPLIERS	
2200K	0.84
2400K	0.89
2700K	0.93
3000K	1.00
3500K	1.06
4000K	1.10

WATTAGE MULTIPLIERS	
12W	1.00
9W	0.81
5W	0.39

Tested with VOYA-2.5-COBSP-12VAC-SW-ST-90-30-FL at 12W

COBSP - BEAM ANGLE	CCT	LUMENS	LM/W	PEAK INTENSITY (CD)	CRI Ra	CRI R9	TM30 Rf	TM30 Rg
COBSP - 12°	2996	849	68	11413	93	57	91	97

CCT MULTIPLIERS	
2200K	0.77
2400K	0.88
2700K	0.95
3000K	1.00
3500K	1.02
4000K	1.06

WATTAGE MULTIPLIERS	
12W	1.00
9W	0.80
5W	0.40

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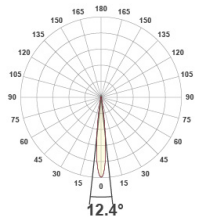
VOYA END MOUNT 2.5" COB STATIC WHITE

12VAC COB Flood/Accent LED

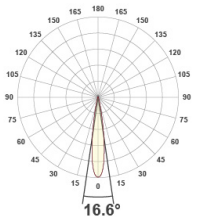
PHOTOMETRIC PERFORMANCE

Nominal beam spread shown, beam spread varies based on light engine. For more detailed information, see photometric data.

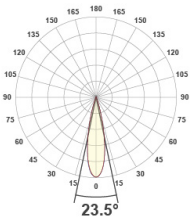
12°



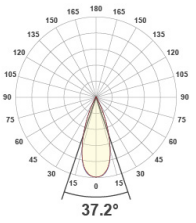
16°



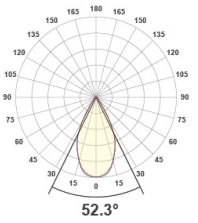
23°



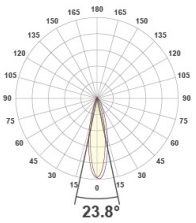
37°



51°



GZR



9 FINISH

ALUMINUM POWDER COAT FINISHES

Lead times differ. BZT parts are readily available. All other standard finishes are painted upon order.
Custom finishes: consult factory



Beige

Black

Black Texture

Bronze



Bronze Texture

Black Bronze

Silver

White

BRASS AND STAINLESS STEEL POLISHED FINISHES

Brass and Stainless Steel have longer lead times: consult factory



Polished Brass

Polished Stainless Steel

11 DIP SWITCH SETTINGS

VOYA-2.5-12VAC-COB-SW

Output								
Rated Current(A)	150	170	190	220	250	300	375	500
DIP Code	TTT	TT⊥	T⊥T	T⊥⊥	⊥TT	⊥T⊥	⊥⊥T	⊥⊥⊥
Rated Power(W)	4.6	4.9	5.3	5.9	6.6	7.9	9.5	12.5

T On ⊥ Off.

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VOYA END MOUNT 2.5" COB STATIC WHITE

12VAC COB Flood/Accent LED

13/14/15 ACCESSORIES

Holds up to three accessories. Retaining Ring included with each accessory. Accessories not compatible GZR option.

SP



Spread Lens

To order separately use ACC-2.5-SP

LS



Linear Spread Lens

To order separately use ACC-2.5-LS

WW



Wall Wash Lens

To order separately use ACC-2.5-WW

LV



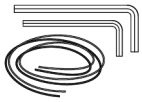
Honeycomb Louver

To order separately use ACC-2.5-LV



Retaining Ring

To order separately use ACC-2.5-RR



SNOOT INSTALL KIT

To order separately use VOYA-SNOOT-INSTALL-KIT

COMPATIBLE GLARE CONTROL ACCESSORIES

VOYA-2.5-45D-GLARE-SHIELD-YY-XX



Adjustable 45° Glare Shield. See Spec Sheet for material (YY) and finish (XX) options

COMPATIBLE POWER SUPPLIES

See power supplies cut sheets for more information. Data subject to change, all data has +/- 5% tolerance.

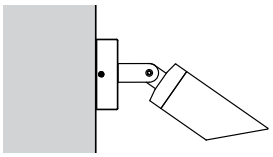
DIMMING PROTOCOL	OUTDOOR
	LANDSCAPE LIGHTING
Phase	Q-HEX Q-SET-1 Q-SET-2 Q-SET-3 QOMD QOMS

VOYA EM/SM 2.5" MOUNT COMPATIBILITY

Landscape Lighting

SURFACE/WALL

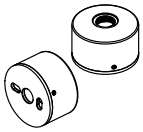
See Surface/Wall installation for dimensions and included hardware. Refer to the mount cut sheets for complete order codes regarding mount's options.





Q-WB

Wood Beam Mount



Q-MT-11*

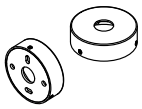
With Water Protection



Q-MT-17*



Q-MT-18

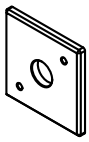


Q-MT-19

With Water Protection



Q-MT-21



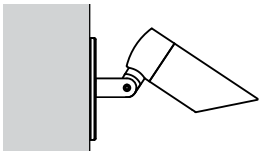
Q-MT-22

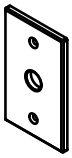


Q-MT-37*

SURFACE/WALL J-BOX PLATES

See Surface/Wall J-Box Plate installation for dimensions and included hardware. Refer to the mount cut sheets for complete order codes regarding mount's options.



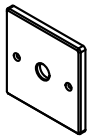


Q-MT-24

Compatible with 1 GANG RECTANGLE WEATHER PROOF J-BOX or 4/0 WEATHER PROOF J-BOX by others



Q-MT-25



Q-MT-26

Compatible with 1 GANG RECESS J-BOX or 4/0 RECESSED J-BOX by others



Q-MT-27

Compatible with 3/0 RECESSED J-BOX by others

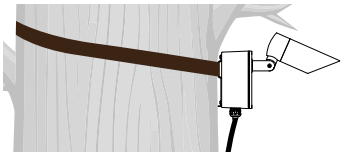


Q-MT-42*

Compatible with 1 GANG RECTANGLE WEATHER PROOF J-BOX or 4/0 WEATHER PROOF J-BOX by others

TREE MOUNT

See Tree Mount installation for dimensions and included hardware. Refer to the mount cut sheets for complete order codes regarding mount's options.





Q-MT-10



Q-MT-12*

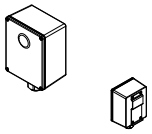


Q-MT-14*

With Tree Strap

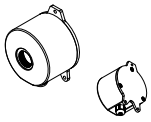


Q-MT-39*



Q-MT-50 (No Driver)

With Water Protection and Tree Strap

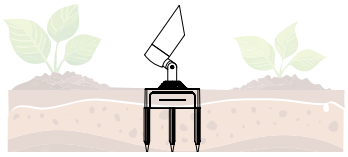


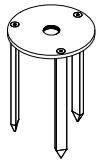
Q-MT-51*

With Water Protection

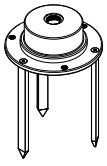
DIRECT BURIAL

See Direct Burial installation for dimensions and included hardware. Refer to the mount cut sheets for complete order codes regarding mount's options.





Q-MT-6*

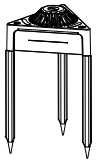


Q-MT-7*

With Water Protection

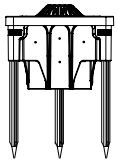


Q-MT-45*



Q-TRIX-R20* (No Driver)

With Water Protection

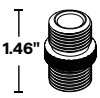


Q-TRIX-R50* (With Driver)

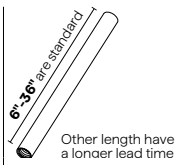
With Water Protection

MOUNT ACCESSORIES

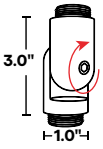
See Accessories installation for dimensions and included hardware.



NPS ADAPTER

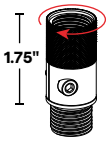


AY-3 Riser Pole



AY-7

No Water Protection



(RA) ROTATIONAL ADAPTER

With Water Protection

***Compatible with AY-3 Riser Pole**

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Specification subject to change. Rev-11-02-26

VOYA EM/SM 2.5" 12VAC COB STATIC WHITE

Power Supply Sizing & Wiring

SIZING RULES

Every VOYA Circuit should be sized to two limitations:
Power Supply - total connected VOYA load must not exceed 70% of supply's rated wattage
Output Breaker - connected load on each breaker must not exceed 70% of the that breaker's rated capacity (breaker amps x 12V)

The supply's 70% limit caps the total load on the transformer; each breaker's 70% limit caps the load on its own circuit. The lower of the two, controls the number of fixtures

- The 70% factor reflects the VOYA 2.5 integrated driver's power factor (~0.7) at 12VAC input. Higher secondary taps (13V / 14V / 15V) are provided to recover voltage drop on longer runs - they do not increase the load a power supply or breaker can carry, so size all capacity at the 12V tap.
- This VOYA specific 70% guideline supersedes the generic "50% derating for LED retrofit loads" note shown on the QTL's power-supply cut sheets. VOYA 2.5 COB fixtures include an integrated driver (hence not a retrofit LED fixture).

POWER SUPPLIES LOADING EXAMPLE

Max VOYA fixtures per sample power supply ratings (70% rated wattage)

Power Supply Rating	Useable Load (70%)	12.5W	9.5W	4.9W
60W	42W	3	4	8
100W	70W	5	7	14
150W	105W	8	11	21
300W	210W	16	22	42

OUTPUT BREAKER LOADING EXAMPLE

Max VOYA fixtures per sample breaker ratings (70% breaker capacity)

Breaker	Rated @ 12V	Useable Load (70%)	12.5 W	9.5 W	4.9 W
5 A	60W	42W	3	4	8
10 A	120W	70W	6	8	17
12.5 A	150W	105W	8	11	21
25 A	300W	210W	16	22	42

DISTRUBUTED & BRANCH CIRCUITS

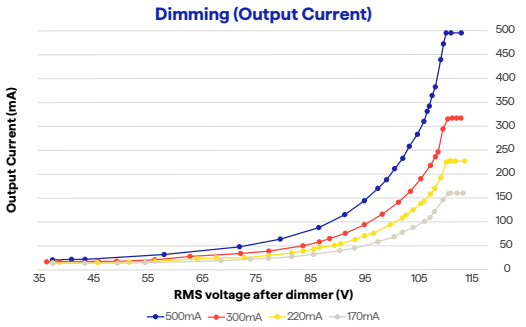
VOYA 2.5 COB can be wired as either a distributed load - multiple fixtures tapped along a run, in branches, or in loop/ring circuits - or as a single load at the end of a run. When wiring as a distributed load, refer to the VOYA 2.5 12VAC wiring guide to size wires within recommended voltage-drop limits. When wiring as a single load at the end of a run, refer to the QTL voltage drop calculator.

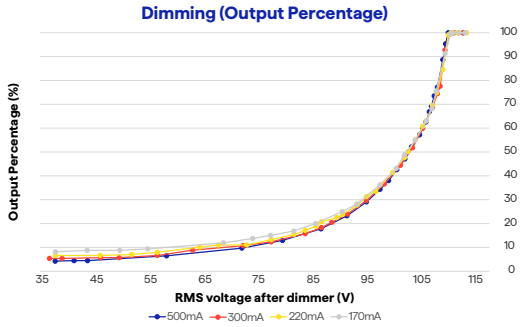
Input voltage at the fixture should be 11.4V–15V AC without dimming. The voltage at the fixture should be 12V–15V AC with dimming. Therefore, taps higher than 12V are recommended when dimming is used.

- Keep every branch and run within both 70% limits and the 12–15V AC fixture voltage window.
- Use the multi-tap secondary (12V / 13V / 14V / 15V) to recover voltage drop on longer runs - tap up to compensate.

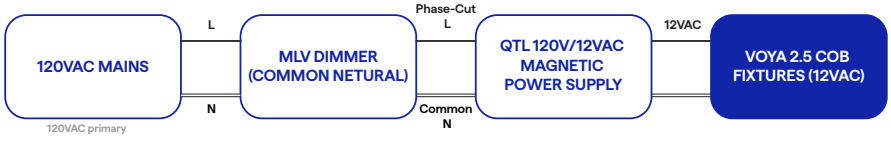
DIMMING

VOYA 2.5 COB Static White dims by phase control on the 120VAC primary of the magnetic power supply. The curves below show measured output as a common-neutral MLV dimmer reduces the RMS voltage to the supply, at four factory drive-current settings. VOYA 2.5 12VAC COB dims as low as 4% of full output.





Recommended dimmer: Use a magnetic low-voltage (MLV) dimmer with a common (shared) neutral, installed on the line side - upstream of the magnetic power supply. The dimmer phase-cuts the 120VAC primary; the 12VAC secondary is never dimmed directly



MLV Dimmer on the line side - upstream of power supply. 12VAC secondary is never dimmed

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