

Cl. I, Div. 2, Groups A, B, C, D
 Restricted Breathing Cl. I,
 Div. 2 & Zone 2 (Suffix S826)
 Cl. II, Groups E, F, G, Cl. III &
 Simultaneous Presence
 (HPS 50W, 70W)

Marine & Wet Locations
 3, 3R, 4, 4X; IP56 to IP66

Champ® H.I.D. Luminaires

Applications:

VMV series *Champ* luminaires are used:

- In manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore, dockside, and harbor installations, and other heavy industrial applications
- In areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- Where combustible dusts are present
- In marine applications where water spray and corrosive atmospheres are considerations
- In elevated ambient temperatures often found in industrial applications
- In installations where moisture, dirt, dust, vibration, corrosion, and rough usage are problems
- Wherever the damaging effects of water, wind, snow, sleet, hot sun, or any combination of these elements are found

Features:

- Compact, lightweight design is ideal for medium and low mounting heights
- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion
- Seven mounting arrangements to suit any lighting layout – pendant, flexible pendant, ceiling, wall bracket, angle stanchion, straight stanchion, and quad-mount
- Wide range of light sources and wattages to meet specifiers' needs: 50, 70, 100, and 150 watt high pressure sodium (HPS); 70, 100, 175 watt metal halide (MH and Pulse Start MH)
- Hinged ballast housing for ease of installation and maintenance
- Wide choice of photometric distributions. Glass globes, refractors and compact refractors available for all wattage luminaires; plastic refractors (for non-hazardous applications only) for 50–100 watt luminaires
- All luminaires are designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments
- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation
- Low ambient capability to (–40°C)
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity, with twist-on feature requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode
- Grounding wire for safety
- High power factor ballasts (Min P.F. 90%) and available in a variety of voltages to meet local area requirements
- Mogul base porcelain lamp socket



Certifications and Compliances:

- NEC & CEC:
 - Class I, Division 2, Groups A, B, C, D
 - HPS 50W, 70W – Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class I, Zone 2
- UL Standards:
 - 844 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards:
 - C22.2 No. 137
- IEC Standards:
 - 60079-15

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%)
- Exterior hardware – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant internally fluted glass
- Refractors – glass (50–175 watts); plastic (50–100 watts), for non-hazardous applications
- Guards: Globe – copper-free aluminum
 Refractor – stainless steel

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* material – high reflectance white
- Stainless steel – natural

Electrical Ratings:

- 120, 208, 240, 277, 347, 480, 600, Multi-tap (120, 208, 240 and 277)
- 50 to 150W HPS; 70 to 175W MH

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

Description	Suffix
Factory Sealed Champs	.S865
Class I, Division 2 & Zone 2 Provides T3 code without conduit or cable seals Restricted breathing/Non-sparking	.S826
Restricted Breathing Construction Class I, Division 2 & Zone 2 Suitability Cooler Operating Temperatures (T-Numbers)	.S826TB
Terminal block Furnished with terminal block, crimp terminals and dedicated voltage ballasts (no MT, DT or TT)	.S658*
Fused – to protect ballast and capacitors against abnormal line conditions (Not available with /MT Ballast) (Not for use in Canada) (Not suitable for marine applications) Quick-Clip - Holds weight of housing when closed. No need to support luminaire while screwing the housing to the cover	.S890
Ballast-Gard™ starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50–150W LX HPS only	.BG
Instant restrike – enables a hot HPS lamp to immediately restrike after a momentary loss arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. 50–150W LX HPS only	.IR
Quartz auxiliary lighting – comes to full brightness immediately and remains lit until the HID lamp attains 60–70% of full illumination. For non- hazardous locations only. Must use R2, R3 and R5 refractors.	.QTZ
Refractor Mount - For ballast housing only. Used with R2, R3 and R5 refractors.	.RM
Stainless steel insert – top hat with stainless steel threaded insert to attach ballast housing	.S806
TEFLON coating on globe for increased shatter protection	.S808
G24 only. T-Numbers not affected Factory assembled with H.I.D. lamps installed for additional labor savings	.FA

Note: BG and IR options cannot be used together. IR and QTZ options cannot be used together.

Accessories:

- See pages 1022–1023 for complete listing.

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*When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

Crouse-Hinds
 by **EATON**

VMV Series 50-150W High Pressure Sodium








Champ® H.I.D. Luminaires

Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I,
Div. 2 & Zone 2 (Suffix S826)
Cl. II, Groups E, F, G, Cl. III &
Simultaneous Presence
(50W, 70W)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

3L

To complete the catalog #, include information in notes 1, 2 and 3 below. For guards and other optics see VMV Series - Ordering By Components page.

Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER			
			With G24 Globe and P21 Guard	With G241 Type I Compact Refractor *	With R5 Glass Refractor †	
	3/4	50	VMVS2A050GP	VMVS2A050G241	VMVS2A050R5	
		70	VMVS3A050GP	VMVS3A050G241	VMVS3A050R5	
	3/4	70	VMVS2A070GP	VMVS2A070G241	VMVS2A070R5	
		100	VMVS3A070GP	VMVS3A070G241	VMVS3A070R5	
	3/4	100	VMVS2A100GP	VMVS2A100G241	VMVS2A100R5	
		150	VMVS3A100GP	VMVS3A100G241	VMVS3A100R5	
	3/4	50	VMVS2HA050GP	VMVS2HA050G241	VMVS2HA050R5	
		70	VMVS2HA070GP	VMVS2HA070G241	VMVS2HA070R5	
	3/4	100	VMVS2HA100GP	VMVS2HA100G241	VMVS2HA100R5	
		150	VMVS2HA150GP	VMVS2HA150G241	VMVS2HA150R5	
		3/4	50	VMVS2C050GP	VMVS2C050G241	VMVS2C050R5
			70	VMVS3C050GP	VMVS3C050G241	VMVS3C050R5
3/4		70	VMVS2C070GP	VMVS2C070G241	VMVS2C070R5	
		100	VMVS3C070GP	VMVS3C070G241	VMVS3C070R5	
3/4		100	VMVS2C100GP	VMVS2C100G241	VMVS2C100R5	
		150	VMVS3C100GP	VMVS3C100G241	VMVS3C100R5	
	3/4	50	VMVS2TW050GP	VMVS2TW050G241	VMVS2TW050R5	
		70	VMVS3TW050GP	VMVS3TW050G241	VMVS3TW050R5	
	3/4	70	VMVS2TW070GP	VMVS2TW070G241	VMVS2TW070R5	
		100	VMVS3TW070GP	VMVS3TW070G241	VMVS3TW070R5	
	3/4	100	VMVS2TW100GP	VMVS2TW100G241	VMVS2TW100R5	
		150	VMVS3TW100GP	VMVS3TW100G241	VMVS3TW100R5	
	3/4	50	VMVS25Q050GP	VMVS25Q050G241	VMVS25Q050R5	
		70	VMVS25Q070GP	VMVS25Q070G241	VMVS25Q070R5	
	3/4	100	VMVS25Q100GP	VMVS25Q100G241	VMVS25Q100R5	
		150	VMVS25Q150GP	VMVS25Q150G241	VMVS25Q150R5	
	1 1/2	50	VMVSJ050GP	VMVSJ050G241	VMVSJ050R5	
		70	VMVSJ070GP	VMVSJ070G241	VMVSJ070R5	
	1 1/2	100	VMVSJ100GP	VMVSJ100G241	VMVSJ100R5	
		150	VMVSJ150GP	VMVSJ150G241	VMVSJ150R5	
	1 1/2	50	VMVSP050GP	VMVSP050G241	VMVSP050R5	
		70	VMVSP070GP	VMVSP070G241	VMVSP070R5	
	1 1/2	100	VMVSP100GP	VMVSP100G241	VMVSP100R5	
		150	VMVSP150GP	VMVSP150G241	VMVSP150R5	

* For G243 Type III Compact Refractor, change "241" at end of catalog number to "243". Ex. VMVS2A050G243
For G245 Type V Compact Refractor, change "241" at end of catalog number to "245". Ex. VMVS2A050G245

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVS2A050R2.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVS2A050R3.

1. Add voltage suffix to end of catalog number
Standard Voltage Ballasts - 60Hz

Voltage Suffix	NEC/UL			CEC/CSA (cUL)		
	Multi Tap /MT	Dual Tap /DT	120V /120	480V /480	Tri Tap /TT	Dual Tap /DT
Multi Tap and Dual Tap ballasts are powered for 277V						

2. 150W HPS Luminaires: For 55V lamps - add suffix LX; for 100V lamps - add suffix CE. 50W HPS luminaire is dual tap only.
3. Options - Add the required option suffixes, see page 962, in alpha-numeric order.

Optional Voltage Ballasts - 50 or 60Hz

Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts				EXPORT		
	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	240V 50Hz /240 50

Crouse-Hinds
by E.T.N

3L








3L VMV Series 150-175W Pulse Start Metal Halide

Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I, Div. 2
& Zone 2 (Suffix S826)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

Champ® H.I.D. Luminaires

To complete the catalog #, include information in note 1 below. For guards and other optics see VMV Series - Ordering By Components page.

	Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER		
				With G24 Globe and P21 Guard	With G245 Type V Compact Refractor *	With R5 Glass Refractor †
	Pendant Mount	3/4	150	VMVM2A150GP S828	VMVM2A150G245 S828	VMVM2A150R5 S828
		1		VMVM3A150GP S828	VMVM3A150G245 S828	VMVM3A150R5 S828
		3/4	175	VMVM2A175GP S828	VMVM2A175G245 S828	VMVM2A175R5 S828
		1		VMVM3A175GP S828	VMVM3A175G245 S828	VMVM3A175R5 S828
	Flexible Pendant Mount	3/4	150	VMVM2HA150GP S828	VMVM2HA150G245 S828	VMVM2HA150R5 S828
		3/4	175	VMVM2HA175GP S828	VMVM2HA175G245 S828	VMVM2HA175R5 S828
	Ceiling Mount Thru-Feed	3/4	150	VMVM2C150GP S828	VMVM2C150G245 S828	VMVM2C150R5 S828
		1		VMVM3C150GP S828	VMVM3C150G245 S828	VMVM3C150R5 S828
		3/4	175	VMVM2C175GP S828	VMVM2C175G245 S828	VMVM2C175R5 S828
		1		VMVM3C175GP S828	VMVM3C175G245 S828	VMVM3C175R5 S828
	Wall Mount Thru-Feed	3/4	150	VMVM2TW150GP S828	VMVM2TW150G245 S828	VMVM2TW150R5 S828
		1		VMVM3TW150GP S828	VMVM3TW150G245 S828	VMVM3TW150R5 S828
		3/4	175	VMVM2TW175GP S828	VMVM2TW175G245 S828	VMVM2TW175R5 S828
		1		VMVM3TW175GP S828	VMVM3TW175G245 S828	VMVM3TW175R5 S828
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12 1/2° Angle	3/4	150	VMVM25Q150GP S828	VMVM25Q150G245 S828	VMVM25Q150R5 S828
		3/4	175	VMVM25Q175GP S828	VMVM25Q175G245 S828	VMVM25Q175R5 S828
	Stanchion Mount 25° Angle	1 1/2	150	VMVMJ150GP S828	VMVMJ150G245 S828	VMVMJ150R5 S828
		1 1/2	175	VMVMJ175GP S828	VMVMJ175G245 S828	VMVMJ175R5 S828
	Stanchion Mount Straight	1 1/2	150	VMVMP150GP S828	VMVMP150G245 S828	VMVMP150R5 S828
		1 1/2	175	VMVMP175GP S828	VMVMP175G245 S828	VMVMP175R5 S828

* For G241 Type I Compact Refractor, change "245" at end of catalog number to "241". Ex. VMVM2A150G241-S828
For G243 Type III Compact Refractor, change "245" at end of catalog number to "243". Ex. VMVM2A150G243-S828

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVM2A150R2-S828.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVM2A150R3-S828.

1. Add voltage suffix to end of catalog number

Voltage Suffix	Standard Voltage Ballasts - 60Hz			
	Multi Tap /MT	120V /120	480V /480	CEC/CSA (cUL) Tri Tap /TT 120V /120
	Optional Voltage Ballasts - 50 or 60Hz EXPORT			
Voltage Suffix	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

VMV Series 70-175W Metal Halide








Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I,
Div. 2 & Zone 2 (Suffix S826)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

3L

Champ® H.I.D. Luminaires

To complete the catalog #, include information in notes 1, 2 and 3 below. For guards and other optics see VMV Series - Ordering By Components page.

	Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER		
				With G24 Globe and P21 Guard	With G241 Type I Compact Refractor *	With R5 Glass Refractor †
	Pendant Mount	3/4	70	VMVM2A070GP	VMVM2A070G241	VMVM2A070R5
		1		VMVM3A070GP	VMVM3A070G241	VMVM3A070R5
		3/4	100	VMVM2A100GP	VMVM2A100G241	VMVM2A100R5
		1		VMVM3A100GP	VMVM3A100G241	VMVM3A100R5
		3/4	175	VMVM2A175GP	VMVM2A175G241	VMVM2A175R5
		1		VMVM3A175GP	VMVM3A175G241	VMVM3A175R5
	Flexible Pendant Mount	3/4	70	VMVM2HA070GP	VMVM2HA070G241	VMVM2HA070R5
		3/4	100	VMVM2HA100GP	VMVM2HA100G241	VMVM2HA100R5
		3/4	175	VMVM2HA175GP	VMVM2HA175G241	VMVM2HA175R5
	Ceiling Mount Thru-Feed	3/4	70	VMVM2C070GP	VMVM2C070G241	VMVM2C070R5
		1		VMVM3C070GP	VMVM3C070G241	VMVM3C070R5
		3/4	100	VMVM2C100GP	VMVM2C100G241	VMVM2C100R5
		1		VMVM3C100GP	VMVM3C100G241	VMVM3C100R5
		3/4	175	VMVM2C175GP	VMVM2C175G241	VMVM2C175R5
		1		VMVM3C175GP	VMVM3C175G241	VMVM3C175R5
	Wall Mount Thru-Feed	3/4	70	VMVM2TW070GP	VMVM2TW070G241	VMVM2TW070R5
		1		VMVM3TW070GP	VMVM3TW070G241	VMVM3TW070R5
		3/4	100	VMVM2TW100GP	VMVM2TW100G241	VMVM2TW100R5
		1		VMVM3TW100GP	VMVM3TW100G241	VMVM3TW100R5
		3/4	175	VMVM2TW175GP	VMVM2TW175G241	VMVM2TW175R5
		1		VMVM3TW175GP	VMVM3TW175G241	VMVM3TW175R5
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12 1/2° Angle	3/4	70	VMVM25Q070GP	VMVM25Q070G241	VMVM25Q070R5
		3/4	100	VMVM25Q100GP	VMVM25Q100G241	VMVM25Q100R5
		3/4	175	VMVM25Q175GP	VMVM25Q175G241	VMVM25Q175R5
	Stanchion Mount 25° Angle	1 1/2	70	VMVMJ070GP	VMVMJ070G241	VMVMJ070R5
		1 1/2	100	VMVMJ100GP	VMVMJ100G241	VMVMJ100R5
		1 1/2	175	VMVMJ175GP	VMVMJ175G241	VMVMJ175R5
	Stanchion Mount Straight	1 1/2	70	VMVMP070GP	VMVMP070G241	VMVMP070R5
		1 1/2	100	VMVMP100GP	VMVMP100G241	VMVMP100R5
		1 1/2	175	VMVMP175GP	VMVMP175G241	VMVMP175R5

* For G243 Type III Compact Refractor, change "241" at end of catalog number to "243". Ex. VMVM2A070G243
For G245 Type V Compact Refractor, change "241" at end of catalog number to "245". Ex. VMVM2A070G245

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVM2A070R2.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVM2A070R3.

1. Add voltage suffix to end of catalog number
Standard Voltage Ballasts - 60Hz

Voltage Suffix	NEC/UL			CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120

Optional Voltage Ballasts - 50 or 60Hz

Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts			EXPORT			
	208V CWI /208CWI	480V CWI /240CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 70W ballast not available in 480V.

3. Options - Add the required option suffixes, see page 962, in alpha-numeric order.

3L

VMV luminaires are available in components.

A complete luminaire consists of:

- I. Champ Cover (Mounting Module)
- II. VMV Ballast Housing – Include voltage and required option(s)
- III. Optical & Guard components – Globe, Reflector, Refractor, Guard

I. Champ Cover (Mounting Module):

Type	Conduit	Cat. #
Pendant	3/4"	APM2
	1"	APM3
Flexible Pendant	3/4"	HPM2
Ceiling*	3/4"	CM2
	1"	CM3
Wall	3/4"	TWM2
	1"	TWM3
Stanchion – 25 Degree Angle	1 1/2"	JM5
Stanchion – Straight	1 1/2"	PM5
Quad-Mount	3/4"	QM25

*Not available with V2PC photocell.

II. Ballast Housings:

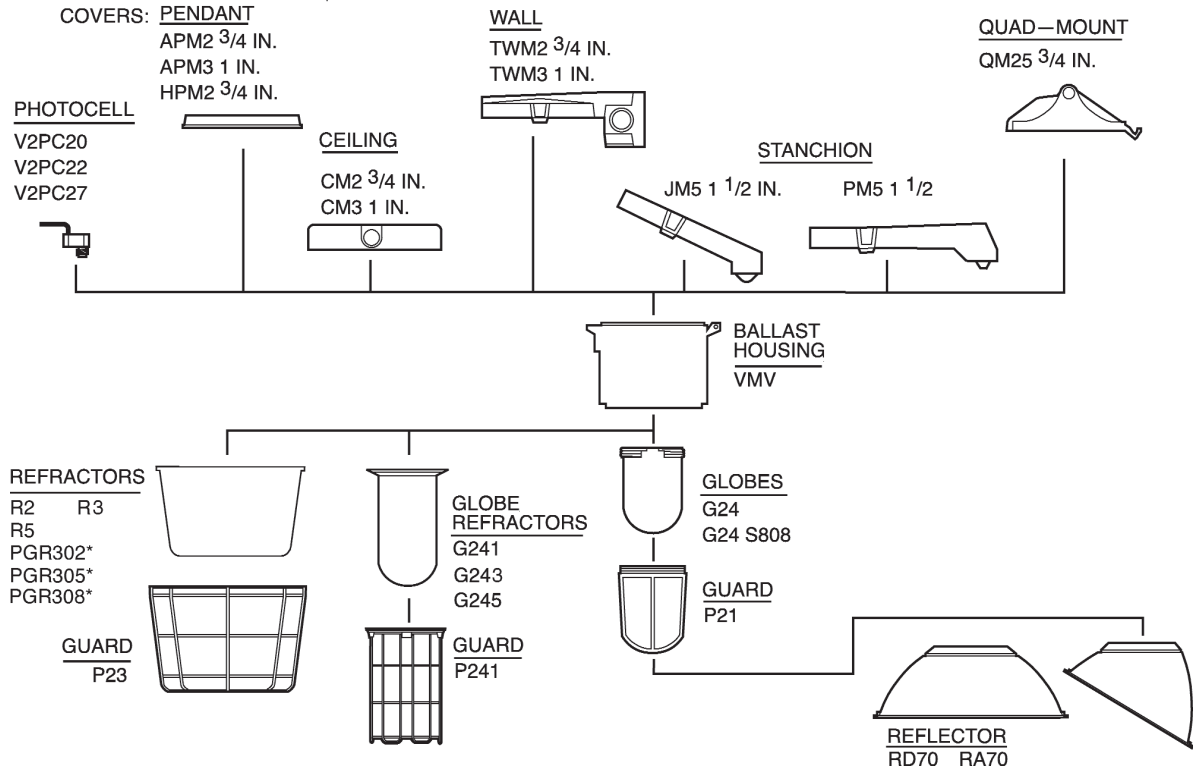
Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Cat. # For Globe and Compact Refractor	Cat. # For Large Refractor
High Pressure Sodium	50	VMVS050/DT	VMVS050/MT RM
	70	VMVS070/MT	VMVS070/MT RM
	100	VMVS100/MT	VMVS100/MT RM
	150	VMVS150/MT LX	VMVS150/MT LX RM
Metal Halide	70	VMVM070/MT	VMVM070/TT RM
	100	VMVM100/MT	VMVM100/MT RM
	175	VMVM175/MT	VMVM175/MT RM

III. Globe, Reflectors, Refractors, Guards:

Type	Cat. #
Globe	G24
Globe – Teflon Coated	G24 S808
Globe Guard	P21
Reflector – Dome	RD70
Reflector – Angle	RA70
Compact Refractor Type 1	G241
Compact Refractor Type 3	G243
Compact Refractor Type 5	G245
Compact Refractor Guard	P241
Large Refractor Type 2	R2
Large Refractor Type 3	R3
Large Refractor Type 5	R5
Large Refractor Guard	P23
Large Plastic Refractor Type 2	PR2
Large Plastic Refractor Type 3	PR3
Large Plastic Refractor Type 5	PR5

Champ® H.I.D. Luminaires



*Plastic refractors are for non-hazardous areas only (50-100W Max.)

Champ® H.I.D. Luminaires

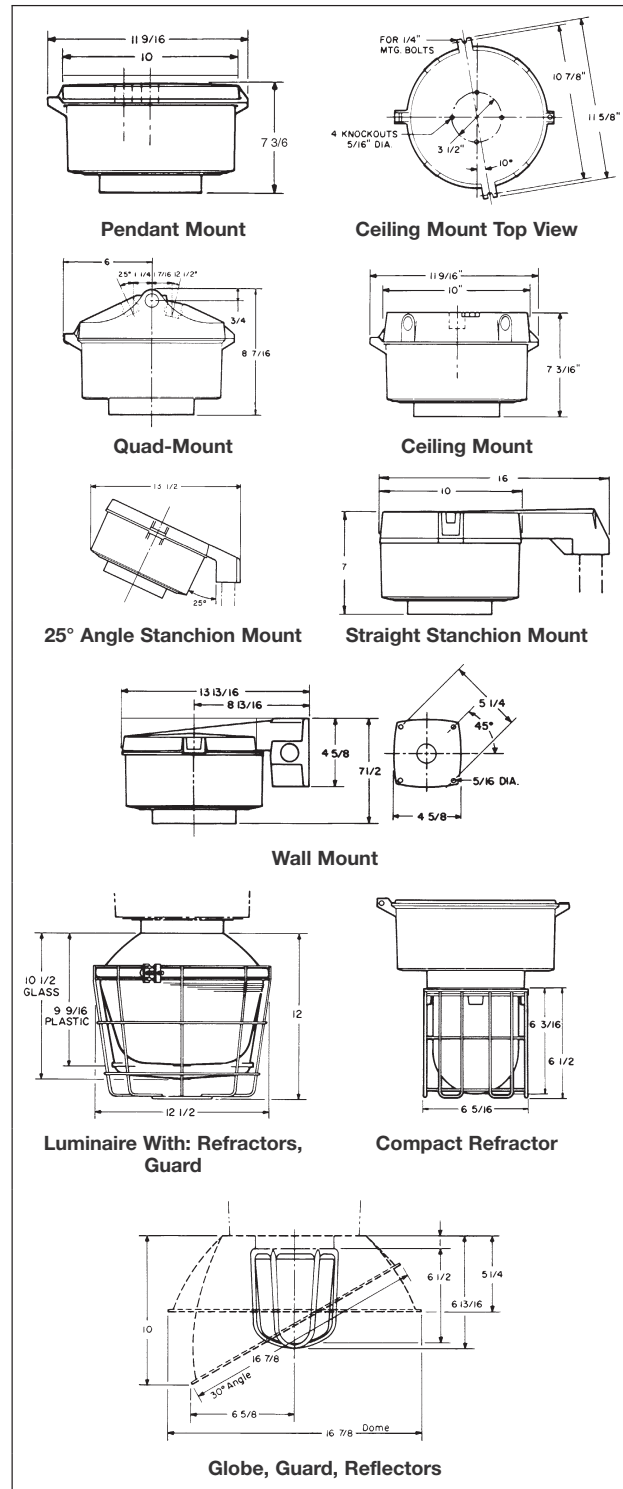
Cat. #	Lamp		Rated Ambient °C	Class I, Division 2				Class II, Division 1	Simultaneous Presence Class I, Div. 2 Class II, Div. 1	Class I, Zone 2		Supply Wire Suitable For °C	
	Wattage	Type		Globe (G24, G241, G245)	Globe (G24) w/ Reflector (RA70 or RD70)	Reflector (R2, R3, or R5)	Group			Globe (G24) w/ or w/o Reflector (RA70 or RD70)	Restricted Breathing Suffix S826 w/ Globe (G24, G241, G245)	Factory Sealed Suffix S865 AEx nA nR II	Globe (G24, G241, G245)
VMVM70	70	MH	40	T3A	T3A	T3A		T3A		T5	T3	90	90
VMVM70	70	MH	55	T3	T3	T3		T3		T4	T3	90	90
VMVM70	70	MH	65	T3	T3	T3		T3		T4	T3	90	90
VMVM100	100	MH	40	T2D	T2D	T2D		T2D		T4	T3	90	90
VMVM100 S849	100	MH	40	T2	T2	T2		T2		T4	T3	75	75
VMVM100	100	MH	55	T2D	T2D	T2D		T2D		T4	T3	90	90
VMVM150	150	MH	40	T2A	T2A	T2B		T2A		T3	T3	90	90
VMVM175	175	MH	40	T2A	T2A	T2B		T2A		T3	T3	90	90
VMVS50	50	HPS	40	T3A	T3A	T3B	EFG	T4A	T3A	T5	T3	75	65
VMVS50	50	HPS	55	T3A	T3A	T3A	EFG	T4	T3	T5	T3	75	75
VMVS50	50	HPS	65	T3	T3	T3	EFG	T4	T2D	T5	T3	75	75
VMVS70	70	HPS	40	T3	T3	T3B	EFG	T3C	T2C	T4	T3	75	65
VMVS70	70	HPS	55	T3	T3	T3	EFG	T3C	T2B	T4	T3	90	90
VMVS100	100	HPS	40	T2C	T2C	T2D	EFG	T3A	T2A	T4	T3	90	75
VMVS100	100	HPS	55	T2B	T2B	T2C	EFG			T3	T3	105	90
VMVS150	150	HPS	40	T2A	T2A	T2B				T3	T3	90	85
VMVS150	150	HPS	55	T2	T2	T2A				T3	T3	105	105
VMVIG055	55	Induction	40	T2C	T2C	—				T6	—	65	—
VMVIG055	55	Induction	55	T2C	T2C	—				T5	—	65	—

The Class I, Division 2 T-codes apply to luminaires without the restricted breathing (S826) or factory sealed (S865) options. These luminaires are listed to UL 844. UL844 specifies how the temperatures are measured.

The Class I, Zone 2 T-codes are for luminaires that are additionally listed to UL 60079-15 that specify a different method for measuring temperatures. Since NEC® 501.1 states that equipment "...for use in Class I, Zone 0, 1, or 2 locations shall be permitted in Class I, Division 2 locations..." then these luminaires are suitable for Class I, Division 2 but with cooler temperature ratings. They also have the advantage of meeting the more rigorous mechanical tests of UL 844.

Champ® H.I.D. Luminaires

**Dimensions
In Inches:**



Net Luminaire Weights:

Luminaire Series	Lamp Watts			
	50	70	100	150 175
Luminaire with Globe, Guards (lbs.):				
VMVS	13 1/2	14 1/2	14 1/2	14 1/2
VMVM		13	13 1/4	15 1/2
Luminaire with Glass Refractor (lbs.):				
VMVS	21 3/4	22 3/4	22 3/4	22 3/4
VMVM		21	21 1/2	23 3/4

Type	Lbs.	Type	Lbs.
Add for mounting modules:			
Pendant	1 1/4	Quad-Mount	3 1/2
Flexible Pendant	1 1/2	Angle Stanchion	3 1/2
Ceiling	2 3/4	Straight Stanchion	4 1/2
Wall	4 1/2		

Add for reflectors:			
Dome	1 1/2	30° Angle	1 1/2

Deduct: 1/2" lb. for fixture without P21 Guard

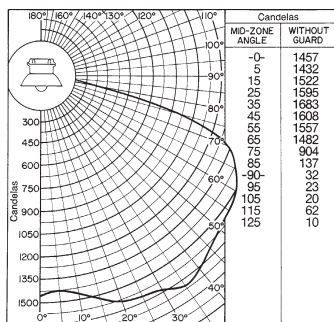


Champ® H.I.D. Luminaires

Lamp: 100W/E – 23½ high pressure sodium (HPS)
 Total bare lamp lumens: 9500

NOTE: All data provided is for high pressure sodium luminaires with 100W/E-23½ clear lamps. Use conversion factors (multipliers) shown below for other clear lamp types and wattages. Consult Eaton's Crouse-Hinds for additional photometric data on any Champ Series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers (for use with candela curve only).

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

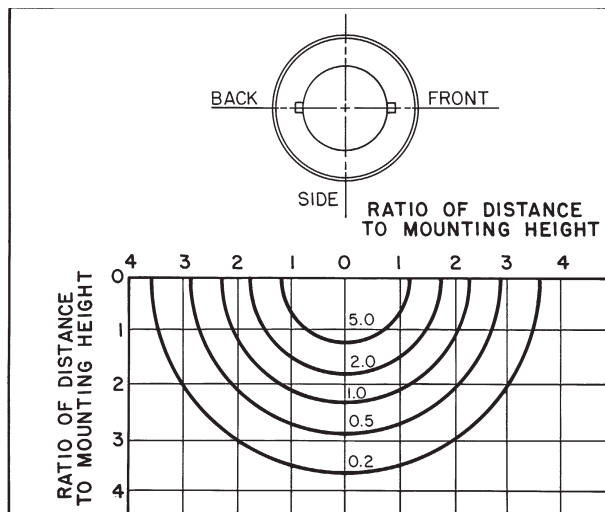
Luminaire spacing ratio: 1.85

Coefficient of Utilization

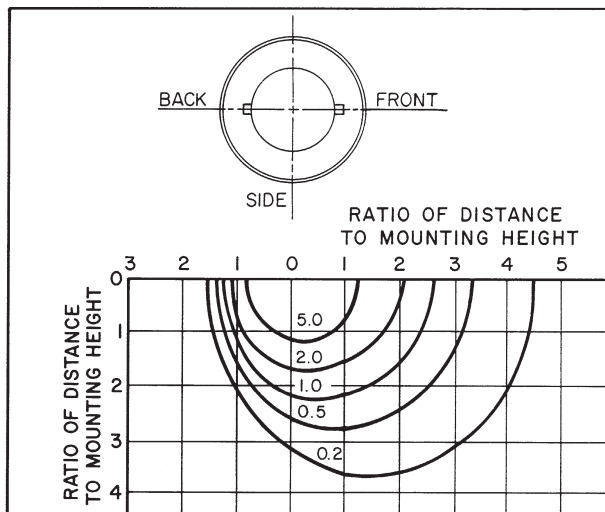
Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		1	2	3	4	5
80	50	.823	.707	.610	.529	.464
	30	.784	.646	.538	.451	.384
	10	.749	.594	.482	.391	.324
70	50	.804	.690	.597	.517	.452
	30	.767	.633	.530	.445	.377
	10	.734	.587	.477	.388	.321
50	50	.765	.658	.571	.494	.434
	30	.735	.611	.513	.431	.368
	10	.709	.569	.466	.381	.318
30	50	.731	.629	.546	.473	.416
	30	.708	.591	.497	.419	.357
	10	.685	.555	.456	.375	.312
10	50	.701	.603	.524	.454	.399
	30	.681	.569	.482	.406	.348
	10	.662	.541	.446	.367	.307
0	0	.644	.521	.427	.348	.288
% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		6	7	8	9	10
80	50	.412	.366	.326	.296	.258
	30	.334	.290	.253	.224	.187
	10	.278	.239	.201	.175	.142
70	50	.403	.359	.320	.291	.252
	30	.329	.285	.250	.221	.187
	10	.274	.235	.200	.174	.142
50	50	.386	.344	.307	.279	.244
	30	.320	.277	.244	.216	.182
	10	.271	.231	.197	.172	.140
30	50	.371	.329	.296	.269	.235
	30	.312	.272	.237	.210	.178
	10	.267	.227	.195	.170	.137
10	50	.357	.319	.285	.260	.227
	30	.304	.266	.232	.206	.173
	10	.263	.224	.192	.167	.135
0	0	.245	.207	.176	.152	.120

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

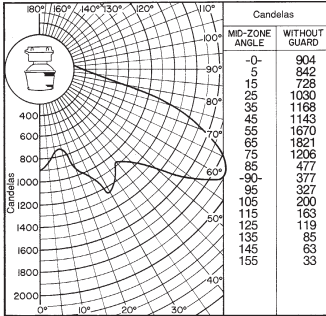
Height (Ft.)	Factor	Height (Ft.)	Factor
6	2.78	14	0.51
8	1.56	16	0.39
12	0.70		

3L

Champ® H.I.D. Luminaires

Lamp: 100W/E0 – 23½ high pressure sodium (HPS)

Luminaire with I.E.S. Type V Glass Refractor



NOTE: Photometric data was developed using a 100 watt clear high pressure sodium lamp (9500 lumens). For other clear lamps, use the following conversion factors (multipliers):

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

Luminaire spacing ratio: 2.0

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		1	2	3	4	5
80	50	.848	.709	.597	.508	.437
	30	.796	.631	.509	.414	.343
	10	.750	.566	.439	.341	.271
70	50	.818	.682	.576	.489	.419
	30	.770	.611	.493	.402	.331
	10	.726	.552	.428	.334	.264
50	50	.759	.632	.533	.451	.389
	30	.720	.574	.464	.377	.312
	10	.685	.521	.407	.318	.253
30	50	.706	.586	.493	.417	.359
	30	.675	.538	.435	.354	.291
	10	.645	.495	.386	.302	.240
10	50	.658	.544	.457	.385	.331
	30	.632	.504	.408	.331	.274
	10	.608	.469	.366	.286	.227
0	0	.581	.441	.340	.260	.203

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		6	7	8	9	10
80	50	.384	.337	.299	.272	.238
	30	.292	.249	.214	.189	.159
	10	.226	.189	.154	.132	.103
70	50	.369	.325	.288	.262	.229
	30	.283	.240	.203	.183	.156
	10	.218	.182	.150	.130	.105
50	50	.341	.301	.266	.243	.214
	30	.266	.225	.195	.173	.146
	10	.209	.173	.143	.124	.099
30	50	.316	.277	.248	.225	.198
	30	.249	.213	.182	.161	.136
	10	.199	.163	.136	.117	.093
10	50	.292	.258	.223	.209	.134
	30	.233	.200	.171	.151	.127
	10	.188	.154	.128	.110	.087
0	0	.165	.133	.108	.091	.070



Cl. I, Div. 2, Groups A, B, C, D
 Restricted Breathing Cl. I,
 Div. 2 & Zone 2 (Suffix S826)
 Cl. II, Groups E, F, G, Cl. III &
 Simultaneous Presence
 (HPS 50W, 70W)

Marine & Wet Locations
 3, 3R, 4, 4X; IP56 to IP66

Champ® H.I.D. Luminaires

Applications:

VMV series *Champ* luminaires are used:

- In manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore, dockside, and harbor installations, and other heavy industrial applications
- In areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- Where combustible dusts are present
- In marine applications where water spray and corrosive atmospheres are considerations
- In elevated ambient temperatures often found in industrial applications
- In installations where moisture, dirt, dust, vibration, corrosion, and rough usage are problems
- Wherever the damaging effects of water, wind, snow, sleet, hot sun, or any combination of these elements are found

Features:

- Compact, lightweight design is ideal for medium and low mounting heights
- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion
- Seven mounting arrangements to suit any lighting layout – pendant, flexible pendant, ceiling, wall bracket, angle stanchion, straight stanchion, and quad-mount
- Wide range of light sources and wattages to meet specifiers' needs: 50, 70, 100, and 150 watt high pressure sodium (HPS); 70, 100, 175 watt metal halide (MH and Pulse Start MH)
- Hinged ballast housing for ease of installation and maintenance
- Wide choice of photometric distributions. Glass globes, refractors and compact refractors available for all wattage luminaires; plastic refractors (for non-hazardous applications only) for 50–100 watt luminaires
- All luminaires are designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments
- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation
- Low ambient capability to (–40°C)
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity, with twist-on feature requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode
- Grounding wire for safety
- High power factor ballasts (Min P.F. 90%) and available in a variety of voltages to meet local area requirements
- Mogul base porcelain lamp socket



Certifications and Compliances:

- NEC & CEC:
 - Class I, Division 2, Groups A, B, C, D
 - HPS 50W, 70W – Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class I, Zone 2
- UL Standards:
 - 844 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards:
 - C22.2 No. 137
- IEC Standards:
 - 60079-15

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%)
- Exterior hardware – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant internally fluted glass
- Refractors – glass (50–175 watts); plastic (50–100 watts), for non-hazardous applications
- Guards: Globe – copper-free aluminum
 Refractor – stainless steel

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* material – high reflectance white
- Stainless steel – natural

Electrical Ratings:

- 120, 208, 240, 277, 347, 480, 600, Multi-tap (120, 208, 240 and 277)
- 50 to 150W HPS; 70 to 175W MH

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

Description	Suffix
Factory Sealed Champs	.S865
Class I, Division 2 & Zone 2 Provides T3 code without conduit or cable seals Restricted breathing/Non-sparking	.S826
Restricted Breathing Construction Class I, Division 2 & Zone 2 Suitability Cooler Operating Temperatures (T-Numbers)	.S826TB
Terminal block Furnished with terminal block, crimp terminals and dedicated voltage ballasts (no MT, DT or TT)	.S658*
Fused – to protect ballast and capacitors against abnormal line conditions (Not available with /MT Ballast) (Not for use in Canada) (Not suitable for marine applications) Quick-Clip - Holds weight of housing when closed. No need to support luminaire while screwing the housing to the cover	.S890
Ballast-Gard™ starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50–150W LX HPS only	.BG
Instant restrike – enables a hot HPS lamp to immediately restrike after a momentary loss arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. 50–150W LX HPS only	.IR
Quartz auxiliary lighting – comes to full brightness immediately and remains lit until the HID lamp attains 60–70% of full illumination. For non- hazardous locations only. Must use R2, R3 and R5 refractors.	.QTZ
Refractor Mount - For ballast housing only. Used with R2, R3 and R5 refractors.	.RM
Stainless steel insert – top hat with stainless steel threaded insert to attach ballast housing	.S806
TEFLON coating on globe for increased shatter protection	.S808
G24 only. T-Numbers not affected Factory assembled with H.I.D. lamps installed for additional labor savings	.FA

Note: BG and IR options cannot be used together. IR and QTZ options cannot be used together.

Accessories:

- See pages 1022–1023 for complete listing.

TEFLON is a registered trademark of E.I. duPont Co.

*When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

Crouse-Hinds
 by **EATON**

VMV Series 50-150W High Pressure Sodium








Champ® H.I.D. Luminaires

Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I,
Div. 2 & Zone 2 (Suffix S826)
Cl. II, Groups E, F, G, Cl. III &
Simultaneous Presence
(50W, 70W)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

3L

To complete the catalog #, include information in notes 1, 2 and 3 below. For guards and other optics see VMV Series - Ordering By Components page.

Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER			
			With G24 Globe and P21 Guard	With G241 Type I Compact Refractor *	With R5 Glass Refractor †	
	3/4	50	VMVS2A050GP	VMVS2A050G241	VMVS2A050R5	
		70	VMVS3A050GP	VMVS3A050G241	VMVS3A050R5	
	1	50	VMVS2A070GP	VMVS2A070G241	VMVS2A070R5	
		70	VMVS3A070GP	VMVS3A070G241	VMVS3A070R5	
	3/4	100	VMVS2A100GP	VMVS2A100G241	VMVS2A100R5	
		150	VMVS3A100GP	VMVS3A100G241	VMVS3A100R5	
	3/4	50	VMVS2HA050GP	VMVS2HA050G241	VMVS2HA050R5	
		70	VMVS2HA070GP	VMVS2HA070G241	VMVS2HA070R5	
	1	50	VMVS2HA100GP	VMVS2HA100G241	VMVS2HA100R5	
		150	VMVS2HA150GP	VMVS2HA150G241	VMVS2HA150R5	
		3/4	50	VMVS2C050GP	VMVS2C050G241	VMVS2C050R5
			70	VMVS3C050GP	VMVS3C050G241	VMVS3C050R5
1		50	VMVS2C070GP	VMVS2C070G241	VMVS2C070R5	
		70	VMVS3C070GP	VMVS3C070G241	VMVS3C070R5	
3/4		100	VMVS2C100GP	VMVS2C100G241	VMVS2C100R5	
		150	VMVS3C100GP	VMVS3C100G241	VMVS3C100R5	
	3/4	50	VMVS2TW050GP	VMVS2TW050G241	VMVS2TW050R5	
		70	VMVS3TW050GP	VMVS3TW050G241	VMVS3TW050R5	
	1	50	VMVS2TW070GP	VMVS2TW070G241	VMVS2TW070R5	
		70	VMVS3TW070GP	VMVS3TW070G241	VMVS3TW070R5	
	3/4	100	VMVS2TW100GP	VMVS2TW100G241	VMVS2TW100R5	
		150	VMVS3TW100GP	VMVS3TW100G241	VMVS3TW100R5	
	3/4	50	VMVS25Q050GP	VMVS25Q050G241	VMVS25Q050R5	
		70	VMVS25Q070GP	VMVS25Q070G241	VMVS25Q070R5	
	1	50	VMVS25Q100GP	VMVS25Q100G241	VMVS25Q100R5	
		150	VMVS25Q150GP	VMVS25Q150G241	VMVS25Q150R5	
		1 1/2	50	VMVSJ050GP	VMVSJ050G241	VMVSJ050R5
			70	VMVSJ070GP	VMVSJ070G241	VMVSJ070R5
1 1/2		50	VMVSJ100GP	VMVSJ100G241	VMVSJ100R5	
		150	VMVSJ150GP	VMVSJ150G241	VMVSJ150R5	
		1 1/2	50	VMVSP050GP	VMVSP050G241	VMVSP050R5
			70	VMVSP070GP	VMVSP070G241	VMVSP070R5
	1 1/2	50	VMVSP100GP	VMVSP100G241	VMVSP100R5	
		150	VMVSP150GP	VMVSP150G241	VMVSP150R5	

* For G243 Type III Compact Refractor, change "241" at end of catalog number to "243". Ex. VMVS2A050G243
For G245 Type V Compact Refractor, change "241" at end of catalog number to "245". Ex. VMVS2A050G245

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVS2A050R2.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVS2A050R3.

1. Add voltage suffix to end of catalog number
Standard Voltage Ballasts - 60Hz

Voltage Suffix	NEC/UL			CEC/CSA (cUL)		
	Multi Tap /MT	Dual Tap /DT	120V /120	480V /480	Tri Tap /TT	Dual Tap /DT
Multi Tap and Dual Tap ballasts are powered for 277V						

2. 150W HPS Luminaires: For 55V lamps - add suffix LX; for 100V lamps - add suffix CE. 50W HPS luminaire is dual tap only.
3. Options - Add the required option suffixes, see page 962, in alpha-numeric order.

Optional Voltage Ballasts - 50 or 60Hz

Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts				EXPORT		
	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	240V 50Hz /240 50

Crouse-Hinds
by E.T.N

3L








3L VMV Series 150-175W Pulse Start Metal Halide

Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I, Div. 2
& Zone 2 (Suffix S826)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

Champ® H.I.D. Luminaires

To complete the catalog #, include information in note 1 below. For guards and other optics see VMV Series - Ordering By Components page.

	Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER		
				With G24 Globe and P21 Guard	With G245 Type V Compact Refractor *	With R5 Glass Refractor †
	Pendant Mount	3/4	150	VMVM2A150GP S828	VMVM2A150G245 S828	VMVM2A150R5 S828
		1		VMVM3A150GP S828	VMVM3A150G245 S828	VMVM3A150R5 S828
		3/4	175	VMVM2A175GP S828	VMVM2A175G245 S828	VMVM2A175R5 S828
		1		VMVM3A175GP S828	VMVM3A175G245 S828	VMVM3A175R5 S828
	Flexible Pendant Mount	3/4	150	VMVM2HA150GP S828	VMVM2HA150G245 S828	VMVM2HA150R5 S828
		3/4	175	VMVM2HA175GP S828	VMVM2HA175G245 S828	VMVM2HA175R5 S828
	Ceiling Mount Thru-Feed	3/4	150	VMVM2C150GP S828	VMVM2C150G245 S828	VMVM2C150R5 S828
		1		VMVM3C150GP S828	VMVM3C150G245 S828	VMVM3C150R5 S828
		3/4	175	VMVM2C175GP S828	VMVM2C175G245 S828	VMVM2C175R5 S828
		1		VMVM3C175GP S828	VMVM3C175G245 S828	VMVM3C175R5 S828
	Wall Mount Thru-Feed	3/4	150	VMVM2TW150GP S828	VMVM2TW150G245 S828	VMVM2TW150R5 S828
		1		VMVM3TW150GP S828	VMVM3TW150G245 S828	VMVM3TW150R5 S828
		3/4	175	VMVM2TW175GP S828	VMVM2TW175G245 S828	VMVM2TW175R5 S828
		1		VMVM3TW175GP S828	VMVM3TW175G245 S828	VMVM3TW175R5 S828
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	150	VMVM25Q150GP S828	VMVM25Q150G245 S828	VMVM25Q150R5 S828
		3/4	175	VMVM25Q175GP S828	VMVM25Q175G245 S828	VMVM25Q175R5 S828
	Stanchion Mount 25° Angle	1½	150	VMVMJ150GP S828	VMVMJ150G245 S828	VMVMJ150R5 S828
		1½	175	VMVMJ175GP S828	VMVMJ175G245 S828	VMVMJ175R5 S828
	Stanchion Mount Straight	1½	150	VMVMP150GP S828	VMVMP150G245 S828	VMVMP150R5 S828
		1½	175	VMVMP175GP S828	VMVMP175G245 S828	VMVMP175R5 S828

* For G241 Type I Compact Refractor, change "245" at end of catalog number to "241". Ex. VMVM2A150G241-S828
For G243 Type III Compact Refractor, change "245" at end of catalog number to "243". Ex. VMVM2A150G243-S828

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVM2A150R2-S828.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVM2A150R3-S828.

1. Add voltage suffix to end of catalog number

Voltage Suffix	Standard Voltage Ballasts - 60Hz			
	Multi Tap /MT	120V /120	480V /480	CEC/CSA (cUL) Tri Tap /TT 120V /120
	Optional Voltage Ballasts - 50 or 60Hz EXPORT			
Voltage Suffix	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

VMV Series 70-175W Metal Halide








Cl. I, Div. 2, Groups A, B, C, D
Restricted Breathing Cl. I,
Div. 2 & Zone 2 (Suffix S826)

Marine & Wet Locations
3, 3R, 4, 4X; IP66

3L

Champ® H.I.D. Luminaires

To complete the catalog #, include information in notes 1, 2 and 3 below. For guards and other optics see VMV Series - Ordering By Components page.

	Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER		
				With G24 Globe and P21 Guard	With G241 Type I Compact Refractor *	With R5 Glass Refractor †
	Pendant Mount	3/4	70	VMVM2A070GP	VMVM2A070G241	VMVM2A070R5
		1		VMVM3A070GP	VMVM3A070G241	VMVM3A070R5
		3/4	100	VMVM2A100GP	VMVM2A100G241	VMVM2A100R5
		1		VMVM3A100GP	VMVM3A100G241	VMVM3A100R5
		3/4	175	VMVM2A175GP	VMVM2A175G241	VMVM2A175R5
		1		VMVM3A175GP	VMVM3A175G241	VMVM3A175R5
	Flexible Pendant Mount	3/4	70	VMVM2HA070GP	VMVM2HA070G241	VMVM2HA070R5
		3/4	100	VMVM2HA100GP	VMVM2HA100G241	VMVM2HA100R5
		3/4	175	VMVM2HA175GP	VMVM2HA175G241	VMVM2HA175R5
	Ceiling Mount Thru-Feed	3/4	70	VMVM2C070GP	VMVM2C070G241	VMVM2C070R5
		1		VMVM3C070GP	VMVM3C070G241	VMVM3C070R5
		3/4	100	VMVM2C100GP	VMVM2C100G241	VMVM2C100R5
		1		VMVM3C100GP	VMVM3C100G241	VMVM3C100R5
		3/4	175	VMVM2C175GP	VMVM2C175G241	VMVM2C175R5
		1		VMVM3C175GP	VMVM3C175G241	VMVM3C175R5
	Wall Mount Thru-Feed	3/4	70	VMVM2TW070GP	VMVM2TW070G241	VMVM2TW070R5
		1		VMVM3TW070GP	VMVM3TW070G241	VMVM3TW070R5
		3/4	100	VMVM2TW100GP	VMVM2TW100G241	VMVM2TW100R5
		1		VMVM3TW100GP	VMVM3TW100G241	VMVM3TW100R5
		3/4	175	VMVM2TW175GP	VMVM2TW175G241	VMVM2TW175R5
		1		VMVM3TW175GP	VMVM3TW175G241	VMVM3TW175R5
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12 1/2° Angle	3/4	70	VMVM25Q070GP	VMVM25Q070G241	VMVM25Q070R5
		3/4	100	VMVM25Q100GP	VMVM25Q100G241	VMVM25Q100R5
		3/4	175	VMVM25Q175GP	VMVM25Q175G241	VMVM25Q175R5
	Stanchion Mount 25° Angle	1 1/2	70	VMVMJ070GP	VMVMJ070G241	VMVMJ070R5
		1 1/2	100	VMVMJ100GP	VMVMJ100G241	VMVMJ100R5
		1 1/2	175	VMVMJ175GP	VMVMJ175G241	VMVMJ175R5
	Stanchion Mount Straight	1 1/2	70	VMVMP070GP	VMVMP070G241	VMVMP070R5
		1 1/2	100	VMVMP100GP	VMVMP100G241	VMVMP100R5
		1 1/2	175	VMVMP175GP	VMVMP175G241	VMVMP175R5

* For G243 Type III Compact Refractor, change "241" at end of catalog number to "243". Ex. VMVM2A070G243
For G245 Type V Compact Refractor, change "241" at end of catalog number to "245". Ex. VMVM2A070G245

† For R2 Glass Refractor, change "R5" at end of catalog number to "R2". Ex. VMVM2A070R2.
For R3 Glass Refractor, change "R5" at end of catalog number to "R3". Ex. VMVM2A070R3.

1. Add voltage suffix to end of catalog number
Standard Voltage Ballasts - 60Hz

Voltage Suffix	NEC/UL			CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120

Optional Voltage Ballasts - 50 or 60Hz

Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts			EXPORT			
	208V CWI /208CWI	480V CWI /240CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 70W ballast not available in 480V.

3. Options - Add the required option suffixes, see page 962, in alpha-numeric order.

3L

VMV luminaires are available in components.

A complete luminaire consists of:

- I. Champ Cover (Mounting Module)
- II. VMV Ballast Housing – Include voltage and required option(s)
- III. Optical & Guard components – Globe, Reflector, Refractor, Guard

I. Champ Cover (Mounting Module):

Type	Conduit	Cat. #
Pendant	3/4"	APM2
	1"	APM3
Flexible Pendant	3/4"	HPM2
Ceiling*	3/4"	CM2
	1"	CM3
Wall	3/4"	TWM2
	1"	TWM3
Stanchion – 25 Degree Angle	1 1/2"	JM5
Stanchion – Straight	1 1/2"	PM5
Quad-Mount	3/4"	QM25

*Not available with V2PC photocell.

II. Ballast Housings:

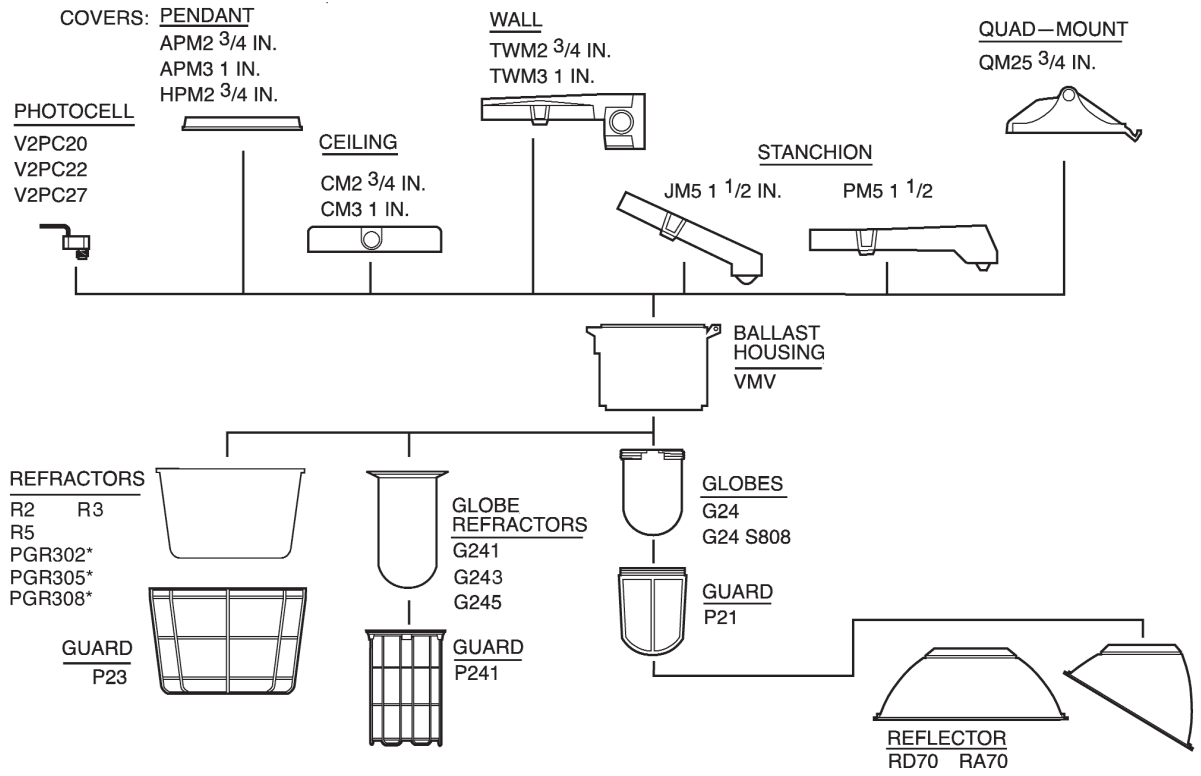
Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Cat. # For Globe and Compact Refractor	Cat. # For Large Refractor
High Pressure Sodium	50	VMVS050/DT	VMVS050/MT RM
	70	VMVS070/MT	VMVS070/MT RM
	100	VMVS100/MT	VMVS100/MT RM
	150	VMVS150/MT LX	VMVS150/MT LX RM
Metal Halide	70	VMVM070/MT	VMVM070/TT RM
	100	VMVM100/MT	VMVM100/MT RM
	175	VMVM175/MT	VMVM175/MT RM

III. Globe, Reflectors, Refractors, Guards:

Type	Cat. #
Globe	G24
Globe – Teflon Coated	G24 S808
Globe Guard	P21
Reflector – Dome	RD70
Reflector – Angle	RA70
Compact Refractor Type 1	G241
Compact Refractor Type 3	G243
Compact Refractor Type 5	G245
Compact Refractor Guard	P241
Large Refractor Type 2	R2
Large Refractor Type 3	R3
Large Refractor Type 5	R5
Large Refractor Guard	P23
Large Plastic Refractor Type 2	PR2
Large Plastic Refractor Type 3	PR3
Large Plastic Refractor Type 5	PR5

Champ® H.I.D. Luminaires



*Plastic refractors are for non-hazardous areas only (50-100W Max.)



Champ® H.I.D. Luminaires

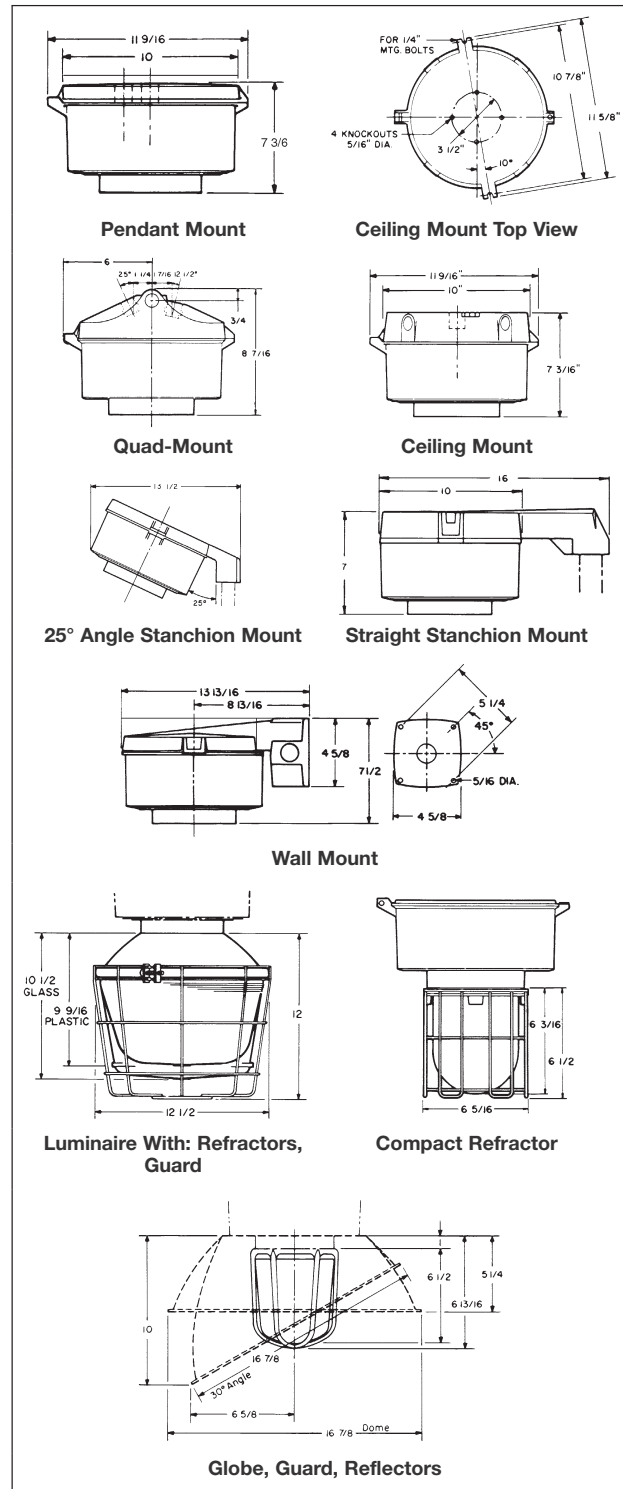
Cat. #	Lamp		Rated Ambient °C	Class I, Division 2				Class II, Division 1	Simultaneous Presence Class I, Div. 2 Class II, Div. 1	Class I, Zone 2		Supply Wire Suitable For °C	
	Wattage	Type		Globe (G24, G241, G245)	Globe (G24) w/ Reflector (RA70 or RD70)	Reflector (R2, R3, or R5)	Group			Globe (G24) w/ or w/o Reflector (RA70 or RD70)	Restricted Breathing Suffix S826 w/ Globe (G24, G241, G245)	Factory Sealed Suffix S865 AEx nA nR II	Globe (G24, G241, G245)
VMVM70	70	MH	40	T3A	T3A	T3A		T3A		T5	T3	90	90
VMVM70	70	MH	55	T3	T3	T3		T3		T4	T3	90	90
VMVM70	70	MH	65	T3	T3	T3		T3		T4	T3	90	90
VMVM100	100	MH	40	T2D	T2D	T2D		T2D		T4	T3	90	90
VMVM100 S849	100	MH	40	T2	T2	T2		T2		T4	T3	75	75
VMVM100	100	MH	55	T2D	T2D	T2D		T2D		T4	T3	90	90
VMVM150	150	MH	40	T2A	T2A	T2B		T2A		T3	T3	90	90
VMVM175	175	MH	40	T2A	T2A	T2B		T2A		T3	T3	90	90
VMVS50	50	HPS	40	T3A	T3A	T3B	EFG	T4A	T3A	T5	T3	75	65
VMVS50	50	HPS	55	T3A	T3A	T3A	EFG	T4	T3	T5	T3	75	75
VMVS50	50	HPS	65	T3	T3	T3	EFG	T4	T2D	T5	T3	75	75
VMVS70	70	HPS	40	T3	T3	T3B	EFG	T3C	T2C	T4	T3	75	65
VMVS70	70	HPS	55	T3	T3	T3	EFG	T3C	T2B	T4	T3	90	90
VMVS100	100	HPS	40	T2C	T2C	T2D	EFG	T3A	T2A	T4	T3	90	75
VMVS100	100	HPS	55	T2B	T2B	T2C	EFG			T3	T3	105	90
VMVS150	150	HPS	40	T2A	T2A	T2B				T3	T3	90	85
VMVS150	150	HPS	55	T2	T2	T2A				T3	T3	105	105
VMVIG055	55	Induction	40	T2C	T2C	—				T6	—	65	—
VMVIG055	55	Induction	55	T2C	T2C	—				T5	—	65	—

The Class I, Division 2 T-codes apply to luminaires without the restricted breathing (S826) or factory sealed (S865) options. These luminaires are listed to UL 844. UL844 specifies how the temperatures are measured.

The Class I, Zone 2 T-codes are for luminaires that are additionally listed to UL 60079-15 that specify a different method for measuring temperatures. Since NEC® 501.1 states that equipment "...for use in Class I, Zone 0, 1, or 2 locations shall be permitted in Class I, Division 2 locations..." then these luminaires are suitable for Class I, Division 2 but with cooler temperature ratings. They also have the advantage of meeting the more rigorous mechanical tests of UL 844.

Champ® H.I.D. Luminaires

**Dimensions
In Inches:**



Net Luminaire Weights:

Luminaire Series	Lamp Watts			
	50	70	100	150 175
Luminaire with Globe, Guards (lbs.):				
VMVS	13 1/2	14 1/2	14 1/2	14 1/2
VMVM		13	13 1/4	15 1/2
Luminaire with Glass Refractor (lbs.):				
VMVS	21 3/4	22 3/4	22 3/4	22 3/4
VMVM		21	21 1/2	23 3/4

Type	Lbs.	Type	Lbs.
Add for mounting modules:			
Pendant	1 1/4	Quad-Mount	3 1/2
Flexible Pendant	1 1/2	Angle Stanchion	3 1/2
Ceiling	2 3/4	Straight Stanchion	4 1/2
Wall	4 1/2		

Add for reflectors:			
Dome	1 1/2	30° Angle	1 1/2

Deduct: 1/2" lb. for fixture without P21 Guard

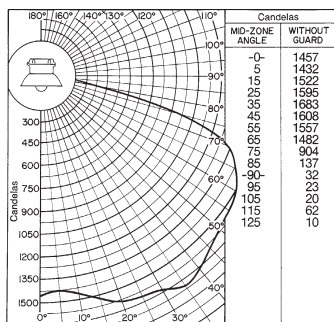


Champ® H.I.D. Luminaires

Lamp: 100W/E – 23½ high pressure sodium (HPS)
 Total bare lamp lumens: 9500

NOTE: All data provided is for high pressure sodium luminaires with 100W/E-23½ clear lamps. Use conversion factors (multipliers) shown below for other clear lamp types and wattages. Consult Eaton's Crouse-Hinds for additional photometric data on any Champ Series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers (for use with candela curve only).

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

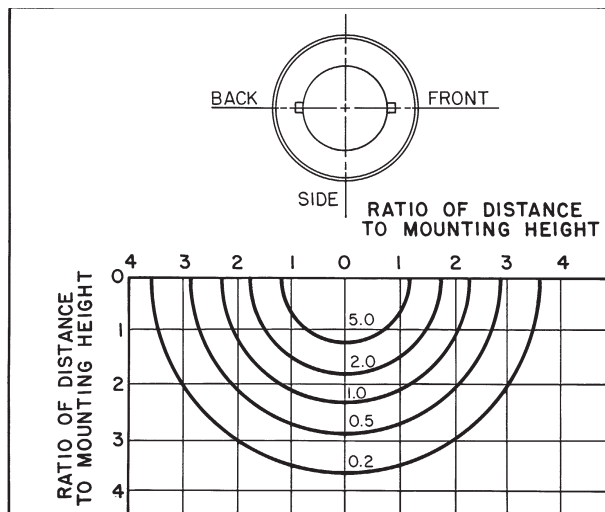
Luminaire spacing ratio: 1.85

Coefficient of Utilization

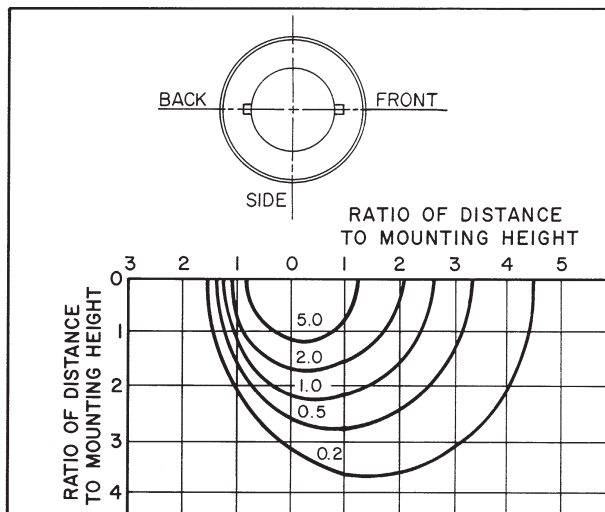
Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		1	2	3	4	5
80	50	.823	.707	.610	.529	.464
	30	.784	.646	.538	.451	.384
	10	.749	.594	.482	.391	.324
70	50	.804	.690	.597	.517	.452
	30	.767	.633	.530	.445	.377
	10	.734	.587	.477	.388	.321
50	50	.765	.658	.571	.494	.434
	30	.735	.611	.513	.431	.368
	10	.709	.569	.466	.381	.318
30	50	.731	.629	.546	.473	.416
	30	.708	.591	.497	.419	.357
	10	.685	.555	.456	.375	.312
10	50	.701	.603	.524	.454	.399
	30	.681	.569	.482	.406	.348
	10	.662	.541	.446	.367	.307
0	0	.644	.521	.427	.348	.288
% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		6	7	8	9	10
80	50	.412	.366	.326	.296	.258
	30	.334	.290	.253	.224	.187
	10	.278	.239	.201	.175	.142
70	50	.403	.359	.320	.291	.252
	30	.329	.285	.250	.221	.187
	10	.274	.235	.200	.174	.142
50	50	.386	.344	.307	.279	.244
	30	.320	.277	.244	.216	.182
	10	.271	.231	.197	.172	.140
30	50	.371	.329	.296	.269	.235
	30	.312	.272	.237	.210	.178
	10	.267	.227	.195	.170	.137
10	50	.357	.319	.285	.260	.227
	30	.304	.266	.232	.206	.173
	10	.263	.224	.192	.167	.135
0	0	.245	.207	.176	.152	.120

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

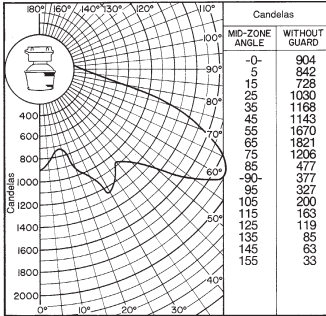
Height (Ft.)	Factor	Height (Ft.)	Factor
6	2.78	14	0.51
8	1.56	16	0.39
12	0.70		

3L

Champ® H.I.D. Luminaires

Lamp: 100W/E0 – 23½ high pressure sodium (HPS)

Luminaire with I.E.S. Type V Glass Refractor



NOTE: Photometric data was developed using a 100 watt clear high pressure sodium lamp (9500 lumens). For other clear lamps, use the following conversion factors (multipliers):

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

Luminaire spacing ratio: 2.0

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		1	2	3	4	5
80	50	.848	.709	.597	.508	.437
	30	.796	.631	.509	.414	.343
	10	.750	.566	.439	.341	.271
70	50	.818	.682	.576	.489	.419
	30	.770	.611	.493	.402	.331
	10	.726	.552	.428	.334	.264
50	50	.759	.632	.533	.451	.389
	30	.720	.574	.464	.377	.312
	10	.685	.521	.407	.318	.253
30	50	.706	.586	.493	.417	.359
	30	.675	.538	.435	.354	.291
	10	.645	.495	.386	.302	.240
10	50	.658	.544	.457	.385	.331
	30	.632	.504	.408	.331	.274
	10	.608	.469	.366	.286	.227
0	0	.581	.441	.340	.260	.203

% Reflectance Eff. Ceil.	Wall	Room Cavity Ratio				
		6	7	8	9	10
80	50	.384	.337	.299	.272	.238
	30	.292	.249	.214	.189	.159
	10	.226	.189	.154	.132	.103
70	50	.369	.325	.288	.262	.229
	30	.283	.240	.203	.183	.156
	10	.218	.182	.150	.130	.105
50	50	.341	.301	.266	.243	.214
	30	.266	.225	.195	.173	.146
	10	.209	.173	.143	.124	.099
30	50	.316	.277	.248	.225	.198
	30	.249	.213	.182	.161	.136
	10	.199	.163	.136	.117	.093
10	50	.292	.258	.223	.209	.134
	30	.233	.200	.171	.151	.127
	10	.188	.154	.128	.110	.087
0	0	.165	.133	.108	.091	.070

