



PRODUCT INSTRUCTIONS

D3 SERIES ENCLOSURES



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LIMITED WARRANTY

DOTWORKZ, INC. PRODUCTS

DOTWORKZ SYSTEMS INC. Warrants this Product to be free from defects in material or workmanship, as follows:

PRODUCT CATEGORY	PARTS	LABOR
All Enclosures and Electronics	One (1) Year	One (1) Year
Power Supplies	One (1) Year	One (1) Year
Accessory Brackets	One (1) Year	One (1) Year

During the warranty period, to repair the Product the Purchaser will deliver it to Dotworkz Systems Inc. San Diego, CA, or return the defective product, freight prepaid. The Product to be repaired is to be returned in either its original carton or a similar package presenting an equal degree of protection with a Return Materials Authorization number displayed on the outer box or packing slip. To obtain RMA # you must contact our Technical Support Team at **866-575-4689**. Dotworkz Systems will return the repaired Product, freight paid. Dotworkz Systems is not obligated to provide Purchaser with a substitute unit during the warranty period or at any time. After the applicable warranty period, Purchaser must pay all labor and/or parts and shipping charges.

The limited warranty stated in these product instructions is subject to all of the following terms and conditions:

- 1. NOTIFICATION OF CLAIMS: WARRANTY SERVICE:** If Purchaser believes that the Product is defective in material or workmanship, then a written notice with an explanation of the claim shall be given promptly by Purchaser to Dotworkz Systems but all claims for warranty service must be made within the warranty period. If after investigation Dotworkz Systems determines that the reported problem was not covered by the warranty, Purchaser shall pay Dotworkz Systems for the cost of investigating the problem at its then prevailing per incident billable rate. No repair or replacement of any Product or part thereof shall extend the warranty period as to the entire Product. The specific warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product parts warranty, whichever is greater
- 2. EXCLUSIVE REMEDY: ACCEPTANCE:** Purchaser's exclusive remedy and Dotworkz System's sole obligation is to supply (or pay for) all labor necessary to repair any Product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts
- 3. EXCEPTIONS TO LIMITED WARRANTY:** Dotworkz Systems shall have no liability or obligation to Purchaser with respect to any Product requiring service during the warranty period which is subjected to any of the following: abuse, improper use, negligence, accidents, lightning damage or other acts of God (i.e., hurricanes, earthquakes), modification, failure of the end-user to follow the directions outlined in the product instructions, failure of the end-user to follow the maintenance procedures written and recommended in the product instructions and service manual, or recommended by the International Security Industry Organization. Furthermore, Dotworkz Systems shall have no liability where a schedule is specified for regular replacement, maintenance or cleaning of certain parts (based on usage) that the end-user has failed to abide to such schedule; attempted repair by non-qualified personnel; operation of the Product outside of the published environmental and electrical parameters; if such Product's original identification (trademark, serial number) markings have been defaced, altered, or removed. Dotworkz Systems excludes from warranty coverage Products sold AS IS and/or WITH ALL FAULTS and excludes used Products which have not been sold by Dotworkz Systems to the Purchaser. All software and accompanying documentation furnished with, or as part of the Product is furnished "AS IS" (i.e., without any warranty of any kind), except where expressly provided otherwise in any documentation or license agreement furnished with the Product.
- 4. PROOF OF PURCHASE:** The purchaser's dated bill of sale must be retained as evidence of the date of purchase and to establish warranty eligibility.

DISCLAIMER OF WARRANTY EXCEPT FOR THE FOREGOING WARRANTIES, DOTWORKZ SYSTEMS HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY AND/OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND/OR ANY WARRANTY WITH REGARD TO ANY CLAIM OF INFRINGEMENT THAT MAY BE PROVIDED IN SECTION 2-312(3) OF THE UNIFORM COMMERCIAL CODE AND/OR IN ANY OTHER COMPARABLE STATE STATUTE. DOTWORKZ SYSTEMS HEREBY DISCLAIMS ANY REPRESENTATIONS OR WARRANTY THAT THE PRODUCT IS COMPATIBLE WITH ANY COMBINATION OF NON-VIDEOLARM PRODUCTS OR NON-DOTWORKZ SYSTEMS RECOMMENDED PRODUCTS THAT THE PURCHASER CHOOSES TO CONNECT TO THE PRODUCT.

LIMITATION OF LIABILITY THE LIABILITY OF DOTWORKZ SYSTEMS, IF ANY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DAMAGES FOR ANY CLAIM OF ANY KIND WHATSOEVER, REGARDLESS OF THE LEGAL THEORY AND WHETHER ARISING IN TORT OR CONTRACT SHALL NOT BE GREATER THAN THE ACTUAL PURCHASE PRICE OF THE PRODUCT WITH RESPECT TO WHICH SUCH CLAIM IS MADE. IN NO EVENT SHALL DOTWORKZ SYSTEMS BE LIABLE TO PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO COMPENSATION, REIMBURSEMENT OR DAMAGES ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS, OR FOR ANY OTHER REASON WHATSOEVER.

PRODUCT INSTALLATION PRECAUTIONS – WARNINGS – ADDITIONAL INFORMATION (RETAIN THIS DOCUMENT)

IMPORTANT SAFEGUARDS

- 1 **Read Instructions** - All the safety and operating instructions should be read before the unit is operated.
- 2 **Retain Instructions** -The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the unit and in the operating instructions should be adhered to.
4. **Follow Instructions** -All operating & user instructions should be followed.
5. **Electrical Connections** - Only a qualified electrician should make electrical connections.
6. **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards
7. **Cable Runs** - All cable runs must be within permissible distance
8. **Mounting** -This unit must be properly and securely mounted to a supporting structure capable of sustaining the weight of the unit. Accordingly:
 - a. Installation should be made by a qualified installer.
 - b. Installation should be in compliance with local codes
 - c. Care should be exercised to select suitable hardware to install the unit, taking into account both the composition of the mounting surface and the weight of the unit. Be sure to periodically examine the unit and the supporting structure to make sure that the integrity of the installation is intact. Failure to comply with the foregoing could result in the unit separating from the support structure and falling, with resultant damages or injury to anyone or anything struck by the falling unit,

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE COMPONENTS TO WATER OR MOISTURE	
	The lightning flash with an arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

SERVICE

If the unit ever needs repair service, customer should contact Dotworkz Systems +1 (619) 224-LIVE (5483) for return authorization & shipping instructions

UNPACKING

Unpack carefully. Electronic components can be damaged if improperly handled or dropped. If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. **Be sure to save**

1. The shipping carton and packaging material. They are the safest material in which to make future shipments of the equipment.
2. These Installation and Operating Instructions.

- ✓ For technical questions or product returns – call Dotworkz Customer Service (866-575-4689) 7:30 AM to 4:30 PM (PST). The proper technician will contact you as soon as possible.
- The External Nut on All electrical wire feed Glands must be tightened to create a weather tight seal prior to putting D2 in service. Failure to create this seal may result in water incursion into enclosure. This may lead to electrical shock, product failure and damage to electrical systems installed within enclosure, including but not limited to damage to camera, heater and blower circuitry, cooling circuitry and other systems installed in unit.
- All screws on hinged lower must be tightened to create seal on enclosure. Failure to create this seal may result in water incursion into enclosure. This may lead to electrical shock, failure and damage to electrical systems installed within enclosure, including but not limited to damage to camera, heater and blower circuitry, cooling circuitry and other systems installed in unit.
- Do not over tighten any Screws, Stand Offs, or other fasteners on this unit. Failure to heed this warning will cause damage or failure of the D2 enclosure.
- Be sure to take extra care to Protect Lens of unit prior to and during installation, and during service. Suspension packaging box is a handy platform to protect lens and enclosure, while installing camera and accessory electronics before installation. Failure to protect lens will adversely affect product perform



Electrical Conduit Guidelines

For optimal performance, your Dotworkz Enclosure is designed to be Air & Water Tight to eliminate any moisture, dust, and insect damage, safety, performance, reliability, and maintenance related issues.



Use of Electrical Conduit, without sealing the entry ports/ inside wire feeds within Camera Enclosure, will subject the inside of your enclosure to possibility of condensation driven moisture, dust, and insect contamination hazards.



Dotworkz has provided each enclosure with two Cable Gland Strain Relief seal ports that fully seal enclosure to an IP68 rating, Waterproof and Airtight Seal. To properly seal, only one round cable is used in each cable gland port. (Holes on enclosure are 7/8" diameter, ready for standard 1/2" I.D. NPT connector, or PG13 fittings.)

However, we realize our customers are retrofitting these connectors with electrical conduit fittings. We acknowledge this industry customization and installation practice, and would like to guide customers to properly install these products.

Conduit Guidelines:

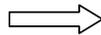
- 1) If wires, cabling, or conduit are coming at enclosure wire entry level, or above, always create a drip loop.
- 2) Please use only approved watertight electrical conduit and connectors, IP66 or better, with proper seals and fittings installed & fully seal.
- 3) **Then, after all wire and cables are installed into enclosure, Seal wire entry ports inside of enclosure** with any number of commercially available sealing putty's, Silicone Sealant, or similar products that are approved by applicable local and relevant electrical codes.



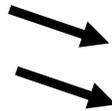
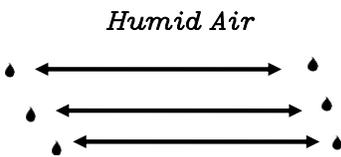
Dotworkz supplies two 1/2" diameter foam conduit plugs, that when installed, will assist in sealing off airflow in conduit feed thru, at cable entry inside of enclosure. Putty or Sealant can be used in conjunction with these plugs, to assure a full seal inside enclosure cable feed entry.

FORCES AT WORK IN ANY UNSEALED, CONDUIT WIRE FEED ENCLOSURE SYSTEM

WARM/MOIST IN UNSEALED CONDUIT MOVES THRU CONDUIT FEEDS EXPAND & CONTRACT WHEN CONDUIT HEATS & COOLS WITH OUTSIDE TEMPERATURES



EXPANDING HEATED AIR IS PUSHED INTO ENCLOSURE THEN COOLS & CONDENSES, HUMID AIR CONDENSES ON SURFACES INSIDE ENCLOSURE



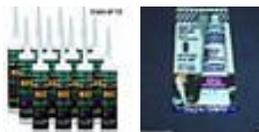
Condensing to Water



SHOCK HAZARD! Failure to fully seal enclosure wire and cabling entry ports **may lead to shock hazard, unsatisfactory product performance, a possibility of damage to electronics in the Dotworkz enclosure product, including camera damage, and damage to integrated electronics** due to air driven moisture traveling thru the conduit, condensing and collecting in the enclosure creating a short circuit hazard.



Electrical Putty & Putty Tapes



Silicone Sealants



Foam Sealants (use very sparingly)

Dotworkz does not endorse, nor has it evaluated any of these products. Test products first, and follow all manufacturers' instructions. Follow all applicable electrical and building codes and installation guidelines. End user assumes liability for applicability of these products and their effectiveness and incurred liability in using these products.



IMPORTANT



VENT STOPPER PLUGS for CONDUIT

Foam Conduit Feed Plugs for 1/2" I.D. Conduit Fittings



Conduit Feeds Must Be Sealed for Safe and Satisfactory Product Performance.

Conduit Stopper Plugs prevent Humid Air exchange from venting thru external conduit into Dotworkz sealed enclosure, when conduit is used with Dotworkz enclosures. Vent Stopper Plugs eliminate Conduit driven condensation in surveillance camera enclosures, or other outdoor enclosure products.

QUICK INSTALLATION GUIDE



1) Pull wires to final installed length.



2) Open Vent Stop Plug and install over wire.



3) Pinch Plug to compress over wire, and insert into conduit feed mouth.



4) Push plug into conduit mouth with finger tips till it flush with outside of fitting.



5) Repeat steps 1-4 for any other conduit feeds as needed.

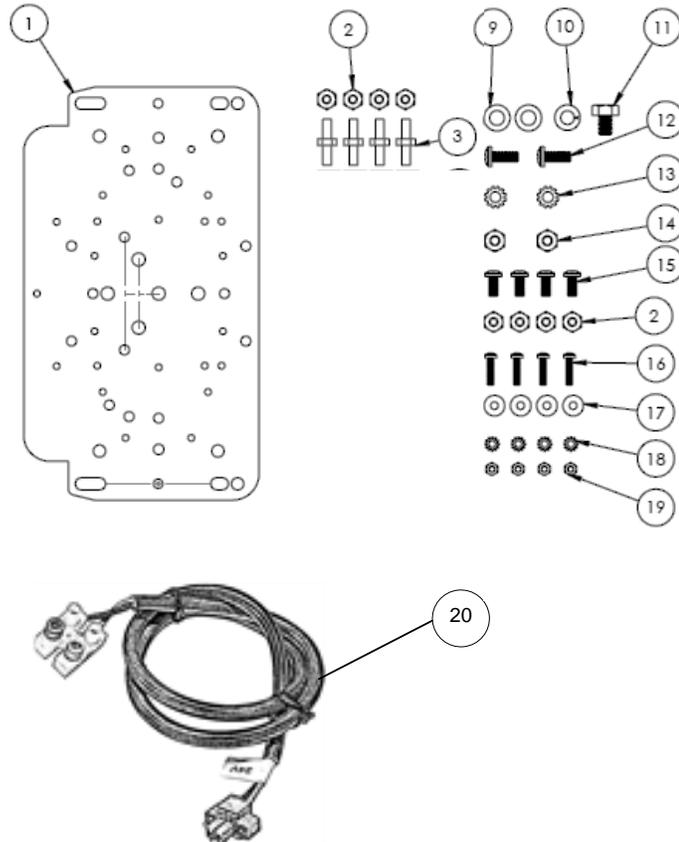


6) To assure an airtight seal, caulk around wires and cables, coating entire plug surface with sealant.

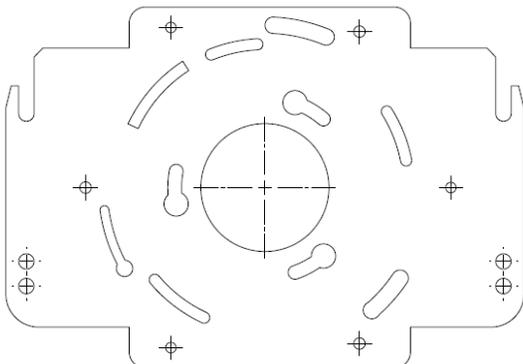


Component Check List For D3 Included Standard Hardware for Camera Mounting

ITEM NO.	PART NUMBER	QTY.
1	CB-1007 V4	1
2	#8-32 Hexnut	8
3	0.125in male-male standoff	4
9	0.25" Narrow Washer	2
10	0.25" Lock Washer	1
11	0.25"-20 .375" Long Hex Head Bolt	1
12	#10-32 0.5in Long Screw (Phillips Head)	2
13	#10 Toothed Lock Washer	2
14	#10-32 Hex Nut	2
15	#8-32 0.375" Long Screw (Phillips)	4
16	M3 x 0.5 x 13 Long Screw (Phillips Head)	4
17	0.125 Aluminum Backup Washer	4
18	M3 Toothed Lock Washer	4
19	M3 x 0.5 Nylon Locknut	4
20	24V Input Blue Bypass Cable In MVP models only	1



Optional Camera Mount Bracket for Larger Cameras #RP-AXBR (AB-1007)



Optional RP-AXBR Bracket Direct Compatibility:

(Available by special order)
 Axis 231D, & 232D
 DVTel 9840
 Merit-LiLin PIH-7000/7600/7625
 PiXORD P-463T Fast Speed Dome
 Pelco Spectra IV
 Sony SNCRH124, SNC-RS44N, SNC-RS46N
 Toshiba IK-DP30A

MVP Voltage Matrix: Enclosure Input – Camera Output

Input Voltage to Enclosure

The MVP Enclosures can be powered by Inputs of either High Voltage 110-220 VAC. Or Low Volt 24 VAC/ VDC

Site Power Available



110 – 220 VAC
Power Source – Single Phase Only



Or



Site Power Available




24 VAC/VDC
Step Down Transformer
High Voltage to 24 VAC



Voltage Matrix for Input / Output

Input Voltage: To Power D2	Output Voltage: To Power Camera	12V DC +	24V AC ~	24V DC +
110-220 VAC ~	✓		✓	
24V AC ~	✓	✓		
24V DC +	✓			✓

Output Voltage to Power Camera

MVP provides step down voltage to supply camera power for 12VDC, and 24V Cameras. 24V Camera Supply 24V output depends on Site Power Input, for either 24V Direct Current, or Alternating Current (see table above)

Power Chassis integrated into D-Series MVP



*Optional 24VAC Transformer Module available for 24VAC only cameras to convert 110-220 VAC to 24 VAC (sold separately)

Input Power Configuration for 24 VAC/ VDC

Site Power Available



110 – 220 VAC Power Source
Single Phase Only



Step Down Transformer
High Voltage to 24 VAC

Inside all D3-MVP is a Chassis similar to shown

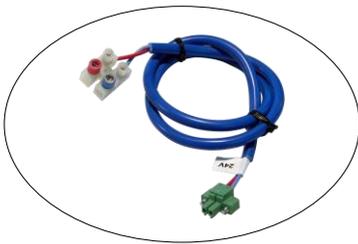


The MVP comes ready for 110-220VAC Input power

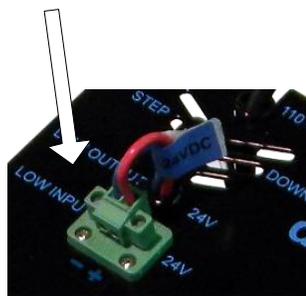
All Wiring Connections are to be made fully inside of D3

For 24 VAC/VDC inputs; Installer must take a moment to allow input configuration for Low Voltage Input. Use Blue 24 VAC Bypass Cable To hook up Power inside D3 as shown below.

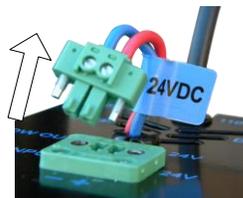
Locate 24V Bypass Cable in Hardware Pack Provided



Locate Green Plug on Chassis



Unplug Green Plug on Chassis from panel mount socket, then push aside



Then insert similar Plug on 24V Bypass Cable Tighten screws on plug to secure



24 VDC Color Code:
Red = + Positive
Blue = - Negative



Run 24V into D3 via weatherproof wiring ports provided. Connect wires to appropriate Color Coded terminal shown here

24 VDC: Connect wires to appropriate Color coded terminal shown above.

24 VAC: hook-up has no polarity

When all wiring is complete, secure screws from plug to panel mount, Then secure all wiring to be sure it does not interfere/ damage fan(s) or camera pan - tilt operation

Input Power Configuration for 110 – 220 VAC

- * **Shut off** all power before and during wiring & servicing!
- * All Wiring must be done by a Qualified technician
- * Observe all local and applicable electrical codes

Use Color coded terminals for High Voltage Input to hook up inside D3

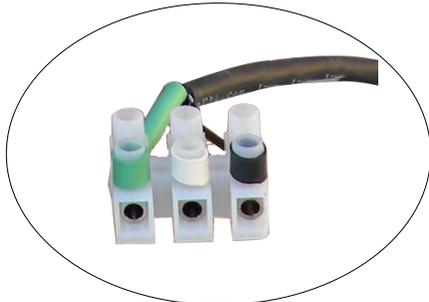


Inside all D3-MVP is a Chassis similar to shown



The MVP comes ready for 110-220VAC Input power

! Use **Single Phase** Voltage Wiring **Only!**



Run 110-220 VAC into D3 via weatherproof wiring ports provided. Connect wires to appropriate Color Coded terminal shown here

High Voltage A/C Typical Conventions, single phase (USA wiring convention):

Color	Symbol	Description
Black	L	Line Conductor, aka: "Hot" wire
White	N	Neutral Conductor
Green	G	Ground Wire, Chassis Ground

Input Specifications

Input Voltage: 90-264 VAC, (127-370 VDC)
 Frequency Range: 47- 63 HZ
 Input Current @ Full Load(Typ.): 1.8A@115VAC, 1.0A@230VAC
 Recommended Min. Circuit Breaker: 6 A (type C)
 Int. Electrical. Working Temp*: -20 ~ +70C
 MTBF: 353.6Khrs min. MIL-HDBK-217F(25C)



Power Available to Camera & Accessories (max.)

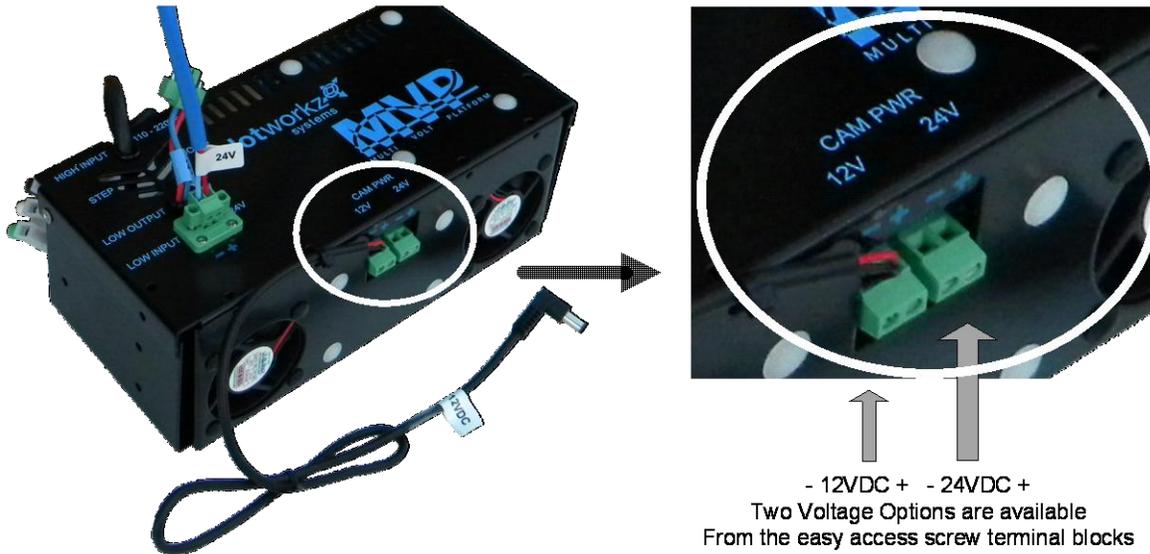
MVP using 110/ 220 VAC input to S-Type enclosure

Using ONE Output

Using BOTH Output Channels (12VDC & 24VDC)

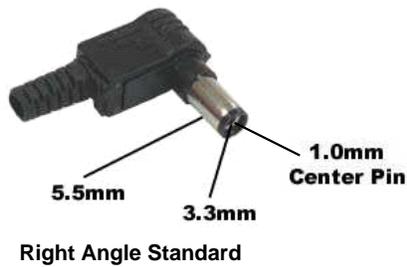
Model	12 VDC Output	OR	24 VDC	
Heater Blower	25 watts	or	25 watts	25 watts first channel, 5 watts on second Channel
Tornado	25 watts	or	50 watts	25 watts first channel, 25 watts on second channel
Ring of Fire	25 watts	or	25 watts	25 watts first channel, 5 watts on second channel

Camera Power / Output Power for MVP



The MVP comes prewired with a 12VDC power cable ready to plug in to some of the most common camera models. However, if your camera has a different power need, the MVP can easily adapt to most camera power needs.

All D2 environmental enclosures come standard with a **12VDC Right Angle Barrel Plug (3.3mm x 5.5mm with a 1mm center pin)** for majority of the IP cameras on the market.



If your IP camera's power connector is different but still accepts up to ~ 13VDC for power, please see our section on **Camera Power Setup (NON-STANDARD CONNECTOR)** for instructions on how to power your camera. Below are pictures of typical NON-STANDARD CONNECTORS.



DC plugs with NO center pin



Terminal pin connectors



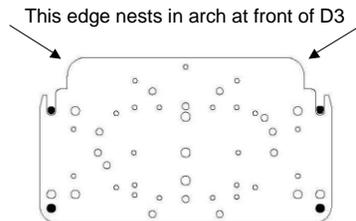
Terminal connector

Generic Camera Installation

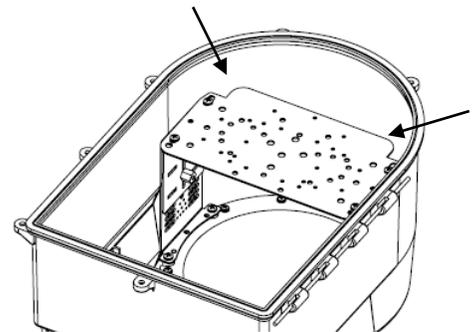


Align camera on D3 camera bracket so as to center camera’s “pan” axis directly over center of camera plate provided. The D3 camera bracket has been pre-drilled with most of the popular camera mounting hole patterns. Align pre-drilled holes on camera plate to best fit your camera model. Use hardware provided to secure to D3 camera plate. On some camera models, new holes may need to be drilled by installer to secure to D3 camera bracket, or for installer to provide misc. hardware to secure camera to provided D3 bracket.

Orientation of Camera Plate when installed into D3 Enclosure



This edge of the bracket faces back of the D3



Secure the camera plate to Steady Step slide bracket by using (4) #8-32 Pan Head Machine screws into D3.

Steady Step Camera Height Adjustment Brackets

Steady Step brackets are the brushed aluminum brackets pre-installed in every D3 enclosure. Using the Steady Step brackets as illustrated in following pages, Camera mounting plate can be adjusted to any height from 0.5” to over 6” by using ¼” stepping ladder system. Steady Step camera bracket is an easy to adjust, stable, mounting system that adjusts to fit virtually every major PTZ camera on the market.

By utilizing the lower mounts around the lens on hinged lower of D3, virtually any PTZ or Mini-Dome Camera can be mounted into the enclosure at any level. By using the included 1/8” tall brass standoff set, the Steady Step system can be attain half steps of 1/8” steps for a precision optimized camera height adjustment within dome lens.

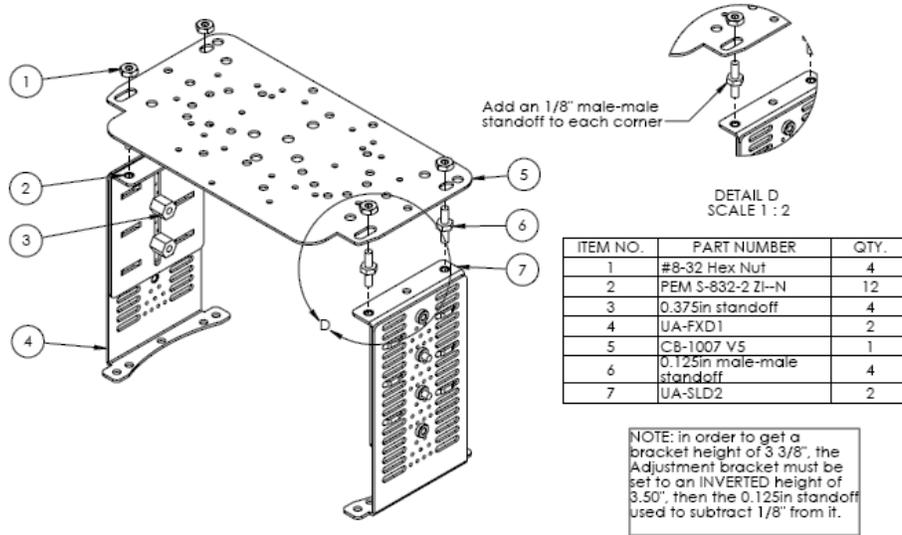
The enclosure lens bubble has 3.5” of internal depth clearance, beyond housing depth, that enables the D3 to house cameras of heights from mini-domes, to camera heights of over 12” tall, while providing plenty of room for integrated products, with convenient mounting / anchoring inserts in upper of housing.

The Upper mounts above the camera are freed up to mount accessories by utilizing the lower mounts only for all sizes of cameras.

Steady Step Mounting System

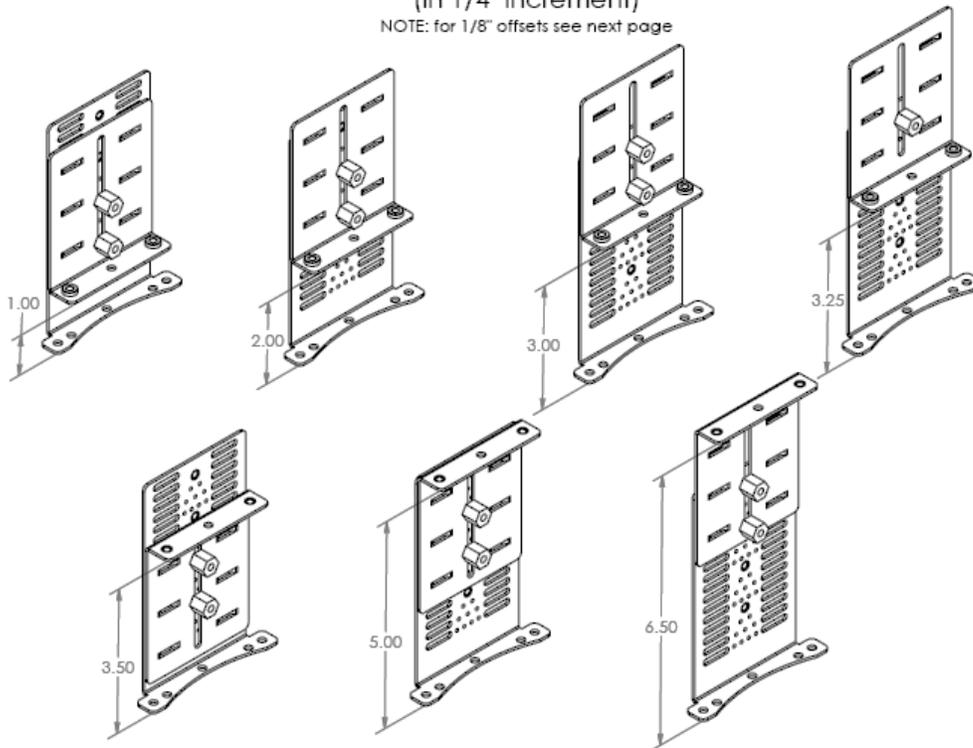
Steady Step Bracket Steps adjust in 1/4" increments. To adjust 1/8" between step settings, add 1/8" brass male-male hex stand-off (ITEM NO. 6) shown in detail D (below), and provided in D3 hardware pack, by threading on top of movable slide bracket of steady step bracket system, then fastening camera bracket (CB-1007 or AB-1007).

UA-CB Installation
1/8" Offset

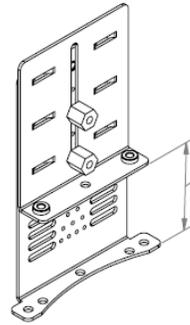
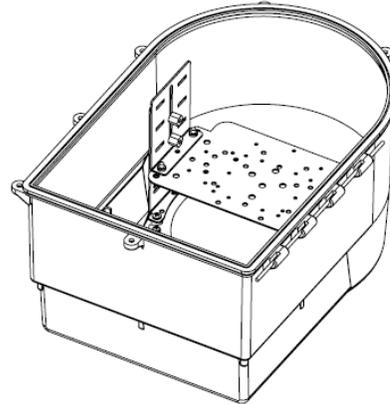
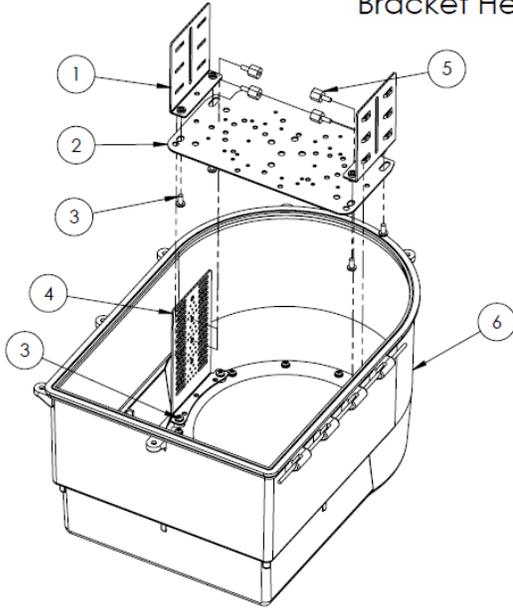


UA-CB Installation
Example Bracket Heights
(in 1/4" increment)

NOTE: for 1/8" offsets see next page



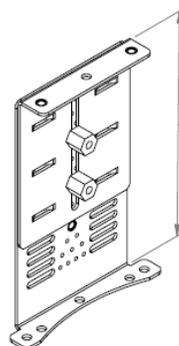
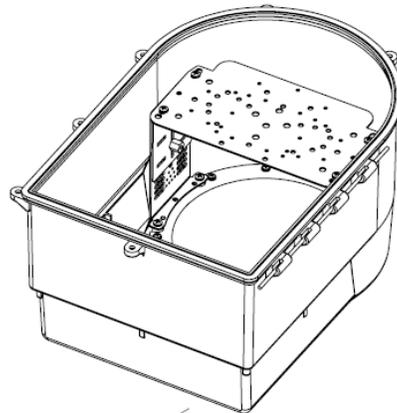
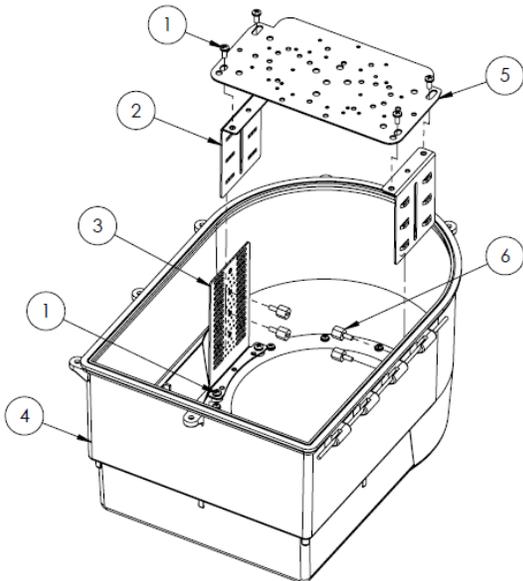
UA-CB Installation into D3 Lower Housing
Bracket Heights .25"-3.375"



Bracket Height
(measured from top
of fixed bracket to
bottom of adjustment
bracket)

ITEM NO.	PART NUMBER	QTY.
1	UA-SLD2	2
2	CB-1007 V5	1
3	#8-32x0.5in Pan Head UA-CB	8
4	UA-FXD1	2
5	0.375in standoff	4
6	D3 Lower V2	1

UA-CB Installation into D3 Lower Housing
Bracket Heights 3.5"-6.5"

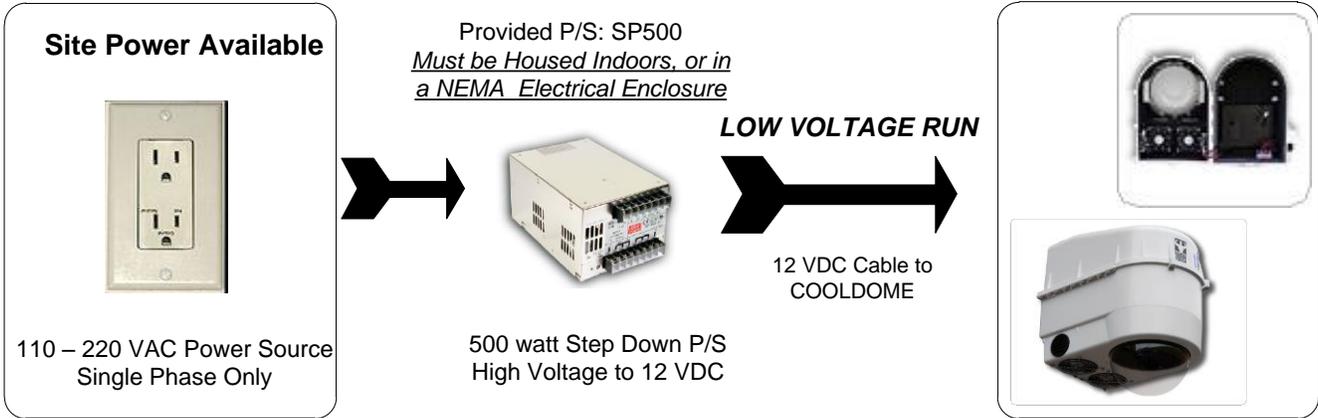


Bracket Height
(measured from top surfaces)

ITEM NO.	PART NUMBER	QTY.
1	#8-32x0.5in Pan Head UA-CB	8
2	UA-SLD2	2
3	UA-FXD1	2
4	D3 Lower V2	1
5	CB-1007 V5	1
6	0.375in standoff	4

COOLDOME Input Power Configuration: D3-CD-12VDC

Turn Off Power or leave power disconnected during Installation of All Wiring.
 Follow all local and relevant electrical codes & standards.
 Test all Wiring and confirm correct voltages before wiring up & powering up COOLDOME.



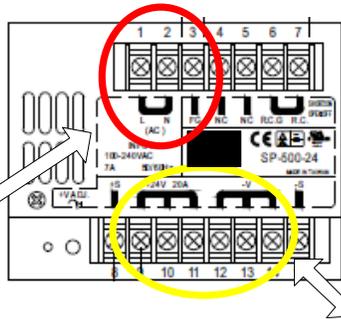
Wiring from Step Down P/S to D3 CD

Front of Power Supply with terminal strip

The D3 CD has two Coolers that run independently.

To reduce low voltage current load, it is best to run two pairs- individually –

So each 12VDC paired wiring runs load of one cooler



Round, Water rated cable bundle, such as **SJOOW - 4 conductor** makes for an easy install and seal into provided cable ports

High Voltage A/C Input. Single Phase. USA Wiring Color Code

Color	Symbol	Terminal	Description
Black	L	1	Line Conductor, AKA Live, Hot
White	N	2	Neutral Conductor
Green	FG	3	FG, Field Ground, Chassis Ground

Low Voltage 12 VDC Output Terminals

Color	Symbol	Terminals	Description
Red	+, V+	9,10,11	Positive VDC
Black	-, V-	12,13,14	Negative VDC

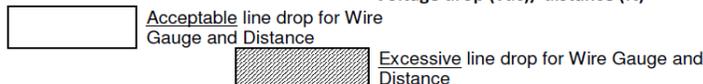
LOW VOLTAGE RUN: Wire Gauge Chart for D3-CD-12VDC: each cooler wired on independent 12VDC wire pairs

12 Volts D/C Voltage Drop for Dotworkz | Cool Dome

Distance (ft)>>	Wire gauge In AWG (below)							
	1.0 ft	10.0	20.0	30.0	40.0	50.0	100.0	
4.0	0.006	0.062	0.124	0.186	0.248	0.310	0.620	
6.0	0.010	0.098	0.196	0.294	0.392	0.490	0.980	
AWG 8.0	0.016	0.156	0.312	0.468	0.624	0.780	1.560	
10.0	0.025	0.248	0.496	0.744	0.992	1.240	2.480	
12.0	0.040	0.400	0.800	1.200	1.600	2.000	4.000	
14.0	0.063	0.628	1.256	1.884	2.512	3.140	6.280	

Gauge Multiplier
 Vdc drop/ft

Voltage drop (vdc)/ distance (ft)



COOLDOME Input Power Configuration: D3-CD-12VDC

Warning!!!: *COOLDOME Enclosure runs on 12 VDC only! If high voltage is applied directly to COOLDOME enclosure, you will damage housing, void warranty, and create electrocution hazard that can be harmful or fatal. Do not start wiring until you have fully read and understand these installation instructions.*

External Power Supply: Model SP-500

The step down power supply provided with each D3 COOLDOME must be mounted outside of the D3 enclosure. *This power supply is must be mounted indoors or in an environmentally protective enclosure.* The power supply can be powered by 95-264 VAC, single phase source voltage. It is self-ranging, so no switch adjustment is needed if you power it from a 110 VAC source, or 220 VAC source voltage (single phase). *Optional outdoor rated, sealed power supplies are available sold separately.*

The output of the SP-500 is rated up to 40 amps peak output @ 12VDC. Output 12 VDC can be tuned up or down 10% to optimize regulated output, via a small nylon adjustment to left of 12V output terminals on face of power supply . It is recommended to tune the voltage at power supply between 12.0 VDC – 13.5 VDC in unloaded condition. A higher voltage setting may create premature fan failure, and settings above 15VDC may cause costly failure to main cooling components. Use voltage meter to confirm all voltages before connecting COOLDOME to power supply. Firmly tighten all screw terminal connections and check there are no stray wire strands that can create short between wires and terminals.

Wiring Guidelines:

Dotworkz recommends wiring the low voltage 12VDC outputs so that there are two pairs of wires from the SP-500 P/S outputs, to power each cooler independently, to reduce the need for very heavy wire gages on low voltage wiring run, thus eliminating voltage drop issues. Dotworkz recommends to keep all low voltage wiring runs, as short as possible, by installing step down power supply near to COOLDOME.

Dotworkz recommends using 12gg copper wire, or thicker, even on shortest wire runs of 20 ft or less, wired between coolers and step down power supply (per cooler). SJOOW 12-4 type cable provides a stranded 4 conductor round bundle ideal for under 20 ft low voltage cabling, when using our stock cable gland ports, creating a good waterproof seal around cabling to enclosure.

Follow wire gage recommendation on table provided found on prior page, for proper wire gage minimums based on distance between step down power, and COOLDOME. Voltage drop is based on fully loaded “cooler engaged” conditions (and camera powered, allowing up to 3 amps) at typical ambient temperatures of 100F.

Inside D3 CD at rear of upper on enclosure will be two pairs of color coded screw terminal blocks to conveniently and securely attach low voltage wiring. Always check voltage to assure 12VDC is properly wired into enclosure, and observe proper polarity.

Each of the Coolers on the D3 are set up for independent operation, and therefore will switch on and off at slightly different set points, when properly powered and wired. This adds fail safe redundancy to system, as well as electrical efficiency; as second cooler only engages only at higher thermal loads.

Fully Seal Enclosure

D3 COOLDOME is engineered to operate in fully sealed conditions only. Failure to fully seal wire ports and all seals will allow unsatisfactory cooling, and condensation to form within enclosure.

Always completely seal wire ports when completing wiring installation, especially when using conduit; even within inside wire feeds. See Conduit guideline section in this manual for proper conduit installation.

Always create a Drip Loop on wiring that comes from overhead the enclosure, to reduce the risk of water entering enclosure at wire seal ports.

Only use one round cable per provided wire port seal / cable gland. Attempting to run multiple separate wires thru one cable gland will create air and water leaks, and will not seal properly. Use of flat cable or zip cord will not allow cable gland ports to seal properly, creating leaks and product damage.

Humidity Control Pack

A Humidity control pack is provided to eliminate humidity in trapped air within COOLDOME. Each COOLDOME product includes a canister that contains 40 grams of silica gel. This will prevent moisture buildup inside of the CD housing.

Make sure to remove canister from its sealed foil packaging, and secure into enclosure prior to enclosure use. Double stick tape, Velcro tape, large zip ties, or fine wire are common ways to secure the canister. Secure canister above camera- on top of camera bracket, or where space provides. Be sure not to obscure holes on canister so as to allow it to operate effectively.

There is a small window on the canister (see white circle on image). Ensure that the crystals are blue. Occasionally, especially in humid environments, the canister may need to be serviced. If so, the crystals in the window turn pink when silica gel is saturated with moisture. The tin canister can be reactivated by being placed in an oven at 300F for three hours, or until crystals turn blue again. The gel can be reactivated virtually and infinite number of times.

D3 High Voltage Power Supply Specifications

D3 COOLDOME SP-500-12 Power Supply

INPUT	VOLTAGE RANGE <small>Note.5</small>	88 ~ 264VAC 124 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.95/115VAC at full load					
	EFFICIENCY(Typ.)	84%	84%	83%	85.5%	86.5%	87%
	AC CURRENT (Typ.)	7A/115VAC 3.5A/230VAC					
	INRUSH CURRENT (Typ.)	18A/115VAC 36A/230VAC					
	LEAKAGE CURRENT	<3.5mA/240VAC					
PROTECTION	OVERLOAD	105 ~ 135% rated output power Protection type : Fold back current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	31 ~ 36.5V	57.6 ~ 67.2V
	FAN CONTROL, O.T.P.	RTH1 or RTH2 $\geq 50^{\circ}\text{C}$ FAN ON, $\leq 45^{\circ}\text{C}$ FAN OFF, $\geq 70^{\circ}\text{C}$ output shutdown Protection type : Hiccup mode, recovers automatically after fault condition is removed					
FUNCTION	REMOTE CONTROL	RC+/RC-: Short = power on ; Open = power off					
ENVIRONMENT	WORKING TEMP.	-10 ~ +50 $^{\circ}\text{C}$ (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85 $^{\circ}\text{C}$, 10 ~ 95% RH					
	TEMP. COEFFICIENT	0.03%/ $^{\circ}\text{C}$ (0 ~ 50 $^{\circ}\text{C}$)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC <small>(Note 4)</small>	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC					
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B					
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, light industry level, criteria A					
	MTBF	133.4K hrs min. MIL-HDBK-217F (25 $^{\circ}\text{C}$)					
	DIMENSION	170*120*93mm (L*W*H)					
	PACKING	1.9Kg; 8pcs/15.5Kg/1.06CUFT					

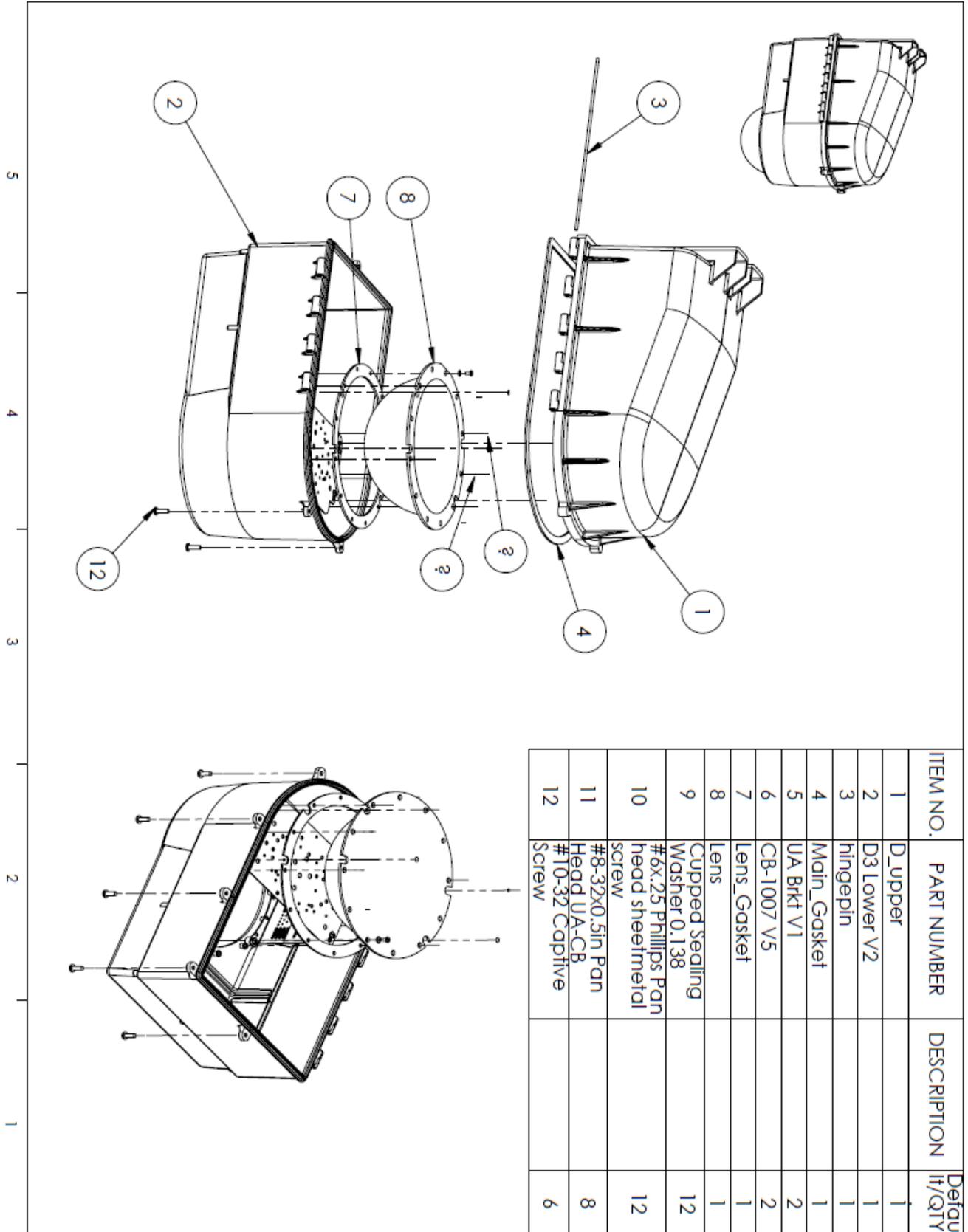
D3 MVP Models – High Voltage Inputs

INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	74%	79%	83%	84%	85%	86%
	AC CURRENT (Typ.)	1.8A/115VAC 1 A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 60A/230VAC 30A/115VAC					
	LEAKAGE CURRENT	For earth <200uA / 264VAC, For patient <100uA/264VAC					
PROTECTION	OVER LOAD	115 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	3.8 ~ 5V	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	28.4 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-20 ~ +70 $^{\circ}\text{C}$ (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85 $^{\circ}\text{C}$, 10 ~ 95% RH					
	TEMP. COEFFICIENT	$\pm 0.03\%/^{\circ}\text{C}$ (0 ~ 45 $^{\circ}\text{C}$)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC <small>(Note 5)</small>	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, UL60601-1, TUV EN60601-1, IEC60601-1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:1.5KVAC O/P-FG:1.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC					
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11), EN55022 (CISPR22) Class B					
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, EN60601-1-2, EN61204-3, medical level, criteria A					
	MTBF	353.6Khrs min. MIL-HDBK-217F (25 $^{\circ}\text{C}$)					
	DIMENSION	101.6*50.8*29mm (L*W*H)					
	PACKING	0.15Kg; 96pcs/15.4Kg/0.89CUFT					

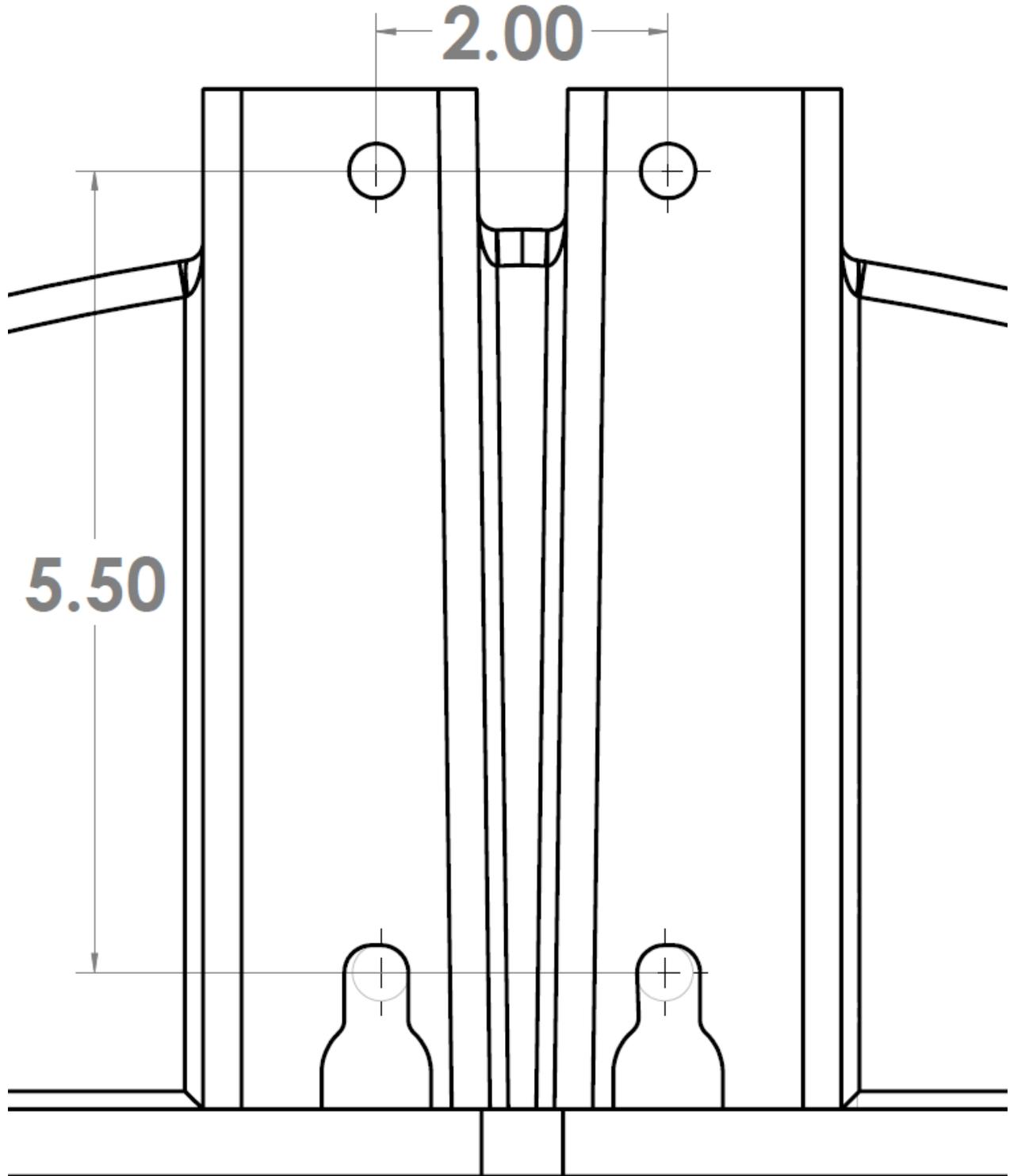
Recommended circuit breaker

6 A (characteristic C) or slow blow fuse

D3 Exploded Detail



D3 Mounting Detail



3/8" Dia. Bolt Clearance Holes/ Key slots (4)
All dimension in inches