



Submittal Package/Purchasing Guide



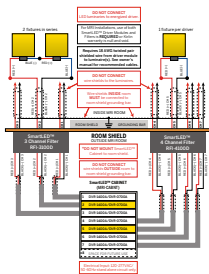
SmartLED™ MRI Cabinet2
MRI-CABNT



SmartLED™ MRI Driver Modules3-5
DVR Modules



SmartLED™ Filters6-7
RFI-3100D, RFI-4100D



SmartLED™ Schematics8-9



CATALOG #	TYPE	
JOB NAME	WATTAGE	VOLTAGE

SmartLED™ MRI Driver Cabinet

MRI-CABNT

MRI-CABNT: Driver Cabinet

- 24"x 18"x 4.5" carbon steel enclosure supports up to **8 SmartLED™ Driver Modules** (sold separately, see page 3).
- Wall mounted enclosure fabricated from 16 gauge steel. Includes flat, removable cover fastened with plated steel screws. Cover design permits easy removal without extracting cover screws. Mounting holes on back of cabinet. Removable knockouts on all four sides.
- Certifications and Compliance: NEMA 1 rating, UL Listed.

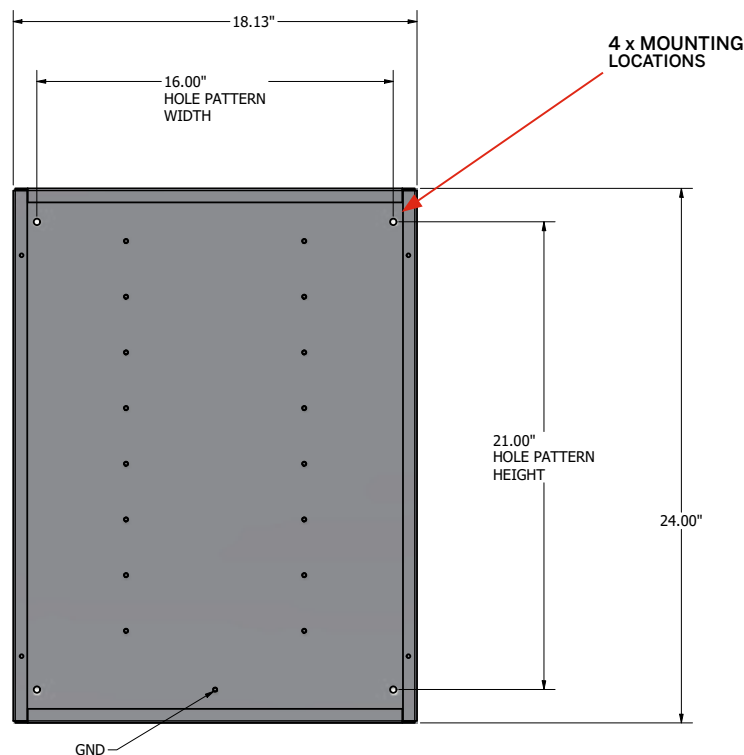


For MRI Installations, use of both SmartLED™ Driver Modules and Filters is REQUIRED or Kirlin warranty is null and void.

Specifications

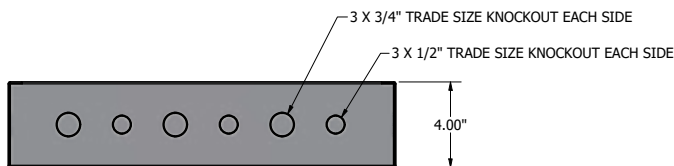
Dimensions	24" (h) x 18" (w) x 4.5" (d)
Weight	28 lb
Color	Black
Construction	Spot Welded
Cover Type	Screw Cover
Knockouts	Trade Sizes: 1/2"; 3/4"
Listings	UL, CSA
Material	Carbon Steel
Mounting Method	Embossed Mounting Holes
Mounting Type	Wall Mount
NEMA Rating	NEMA 1

Dimensions



In MRI Installations, wall dimmers **MUST** be located outside the MRI room shield and must **NOT** be filtered.

MRI Driver Cabinet must **NOT** be mounted to, or be in contact with the MRI room shield.



CATALOG #	TYPE	
JOB NAME	WATTAGE	VOLTAGE

SmartLED™ MRI Driver Modules

DVR Series

Fully Digital Controlled Power Source for LED Luminaires

DVR Series Driver Modules

Fully Digital Controlled Power Source for LED Luminaires Mounted in Kirlin's MRI-CABNT

See product specification sheets for quantity and type(s) of drivers needed.



Specifications

Input Electrical Specifications (Per Installed DVR Module)

Nominal input voltage range AC	120 - 277V
Absolute input voltage range AC	108 - 306V
Input frequency range	50 - 60Hz
Maximum wattage	50W (DVR-XXXXA) 75W (DVR-XXXXB)
Efficiency at full load	85%
Power factor at full load	> 0.95
THD at full load	< 20%
Maximum inrush current	< 200mA's @ 120V / 60Hz < 200mA's @ 277V / 60Hz
Surge protection	2kV differential mode (DM) 2kV common mode (CM)
Maximum standby power	0.5W

Environmental Conditions

Operating ambient temperature (Ta) Range	
Module	-20°C to +40°C
Filter	-10°C to +60°C
Acoustic noise - steady state	< 24dBa (Class A)
All components	Dry location only

Dimming Control

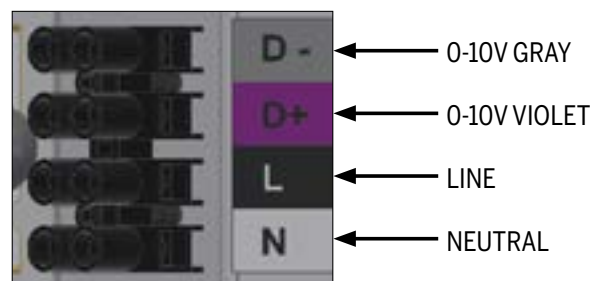
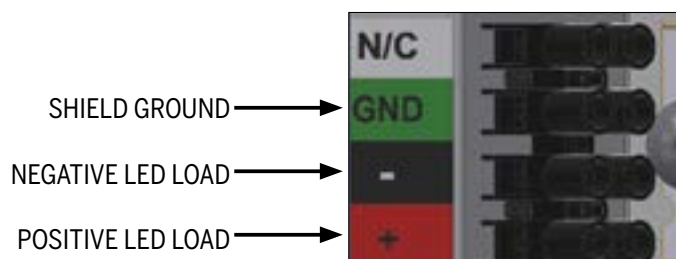
Control protocol	0-10V
Dimming range*	100% - 0.1%, off
Dimming curve	Linear

Remote Mounting Distance

Module to Filter	50 feet max.
Filter to Luminaire	50 feet max.

*In combination with RFI Filters, low end dimming increases to 0.38%

Input Connections



Input to modules can be separate or connected together. (Jumpers provided.)

Standards & Compliance (Per Installed DVR Module)

UL Listed, Class P, Class 2	UL 1310 UL 8750	This low voltage luminaire system complies with UL 2108
Conducted emissions	FCC title 47 CFR part 15 class B	
Radiated emissions	FCC title 47 CFR part 15 class B	
Electrostatic discharge	EN 61000-4-2	
0-10V	IES/EN 60929 annex E NOTE: From 0.6V to 10V drivers comply with IEC/EN 60929 annex E. Below 0.6V LED drivers comply with ABL 0-10V Design Spec v1.2 enabling standby mode.	
Surge protection	ANSI 62.41 1991 category B1: 2.5kV DM, 2.5kV CM @ 30 Ohm 0-10V input 0.5kv DM, 1kV CM surge	
Restriction of hazardous substances	RoHS3 (Directives 2011/65/EU-2015/863/EU)	



Kirlin reserves the right to make changes without further notice to any products herein to improve reliability, function, or design. Kirlin does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.

In MRI Installations, wall dimmers **MUST** be located outside the MRI room shield and must **NOT** be filtered. MRI Driver Cabinet must **NOT** be mounted to, or be in contact with the MRI room shield.

CATALOG NUMBER
DVR Series

Compatible Dimmers and Controls

COMPATIBLE DIMMING CONTROL SYSTEMS	
Manufacturer	Type
Lutron Electronics	GraphicEye - GRX-TVI w GRX3503, Linear Energy Savr Node - QSN-4T16-S, TVM2 Module
Crestron	GLX-DIMFLV8, GLXP-DIMFLV8, GLPAC-DIMFLV4-*, GLPAC-DIMFLV8-*, GLPP-DIMFLVEX-PM, GLPP-1DIMFLV2EX-PM, GLPP-1DIMFLV3EX-PM, DIN-AO8, DIN-4DIMFLV4, CLS-EXP-DIMFLV, CLCI-1DIMFLV2EX
ABB	SD/S 2.16.1

Note: Some dimmers may cause reduced stability at the lowest dim level setting; this is normal and may be resolved by increasing the lowest dim level setting if your selected dimmer allows.

COMPATIBLE 0-10V DIMMERS and SWITCHES		
Manufacturer	Type	Dimming Curve
Busch-Jaeger	2112U-101	Logarithmic
Jung	240-10	Logarithmic
Leviton	IllumaTech - IP710-DLZ / IP710-LFZ	Logarithmic
Lightolier	ZP600FAM120	Logarithmic
Lutron	Diva; DVTv, DVSTv, NFTv Nova-T; NTSTv	Linear
Merten	5729	Logarithmic
Pass & Seymour	CD4FB-W	Logarithmic
WattStopper	DCLV2	Logarithmic
Sensor Switch	n O EZ	Linear
Synergy	ISD BC	Logarithmic

CATALOGED KIRLIN COMPONENTS ARE WARRANTED FREE OF DEFECTS IN WORKMANSHIP OR MATERIAL FOR FIVE YEARS FROM DATE OF PURCHASE. INSTALLATION TO N.E.C. IN NORMAL USE. Manufacturer at this option will replace or repair such product or refund the purchase price on presentation of proof of purchase and defective product at the offices of manufacturer within five years of original shipment. Liability of manufacturer is limited to the foregoing, and manufacturer shall not be liable for any other damages, direct or indirect, sustained or suffered by purchaser or any person. This warranty is supplied to the buyer in place of all other warranties, expressed or implied. Seller does not warrant as to merchantability or fitness for a particular use, nor will any oral statement constitute a warranty or amend this specific warranty. Abnormal use, abuse of the product, improper installation, or repair, or modification of the product without prior written authorization from the manufacturer will render the warranty void.



Kirlin reserves the right to make changes without further notice to any products herein to improve reliability, function, or design. Kirlin does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.

In MRI Installations, wall dimmers **MUST** be located outside the MRI room shield and must **NOT** be filtered. MRI Driver Cabinet must **NOT** be mounted to, or be in contact with the MRI room shield.

CATALOG NUMBER
DVR Series

CATALOG #	TYPE	
JOB NAME	WATTAGE	VOLTAGE

SmartLED™ Filter

For use with SmartLED™ MRI Luminaires and Driver Modules

RFI-3100D

DC MEDICAL RFI (3 CHANNEL) FILTER

Specifications

“Smart” Filters

- Allows lighting power to be delivered into the MRI suite.
- Removes RFI/EMI from electrical circuits entering the MRI suite.
- Fewer filters required. Each RFI-3100D filters three channels (circuits).

“Smart” Operation

- 60 volt DC maximum.
- 3 amp maximum current.
- Indoor use, -10°C to 60°C (-14°F to 140°F).
- Insertion loss: 100dB min (10kHz-1.0 GHz).

“Smart” Size

- At only 5.4" x 8.70", the small size of filter allows placement virtually anywhere through the MRI shield.

“Smart” Installation

- Each output circuit is clearly labeled and prewired through a standard 1/2" threaded hub.
- Input terminal allows for quick connection.

“Smart” Construction

- Completely enclosed nickel plated steel with (6) #18 leads, each 18" long.

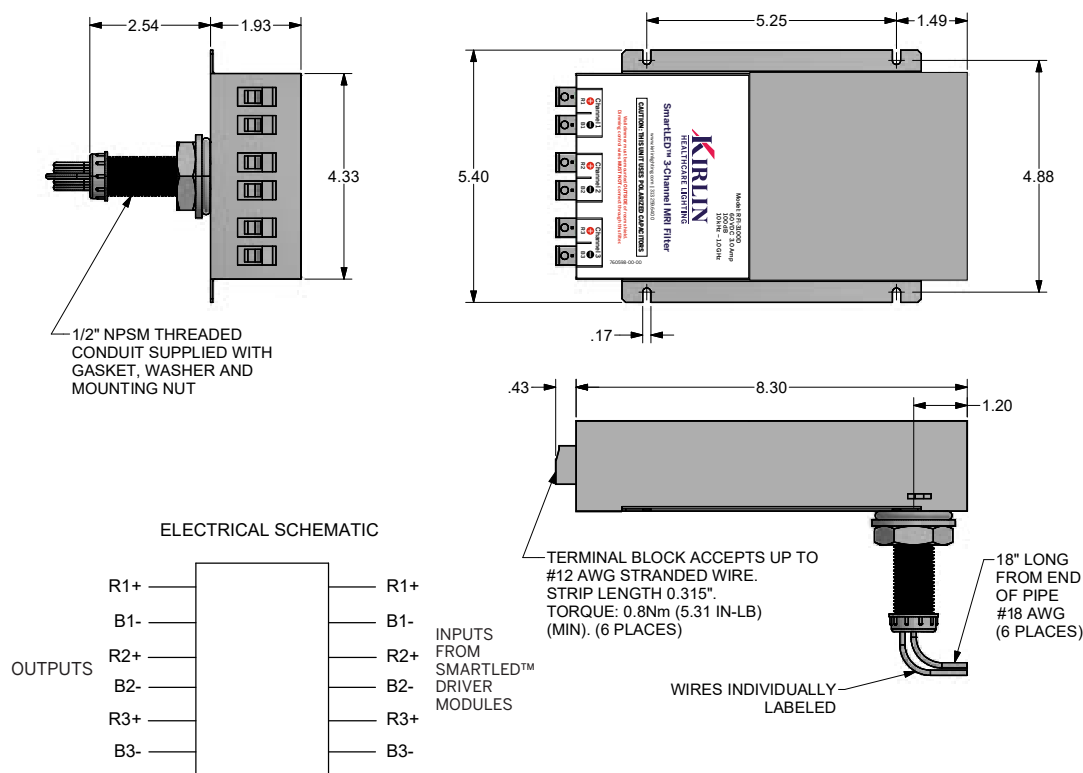
FIVE YEAR Limited Warranty

- Complete.



For MRI Installations, use of both SmartLED™ Driver Modules and Filters is REQUIRED or Kirlin warranty is null and void.

Dimensions (Inches)



CATALOG #	TYPE	
JOB NAME	WATTAGE	VOLTAGE

SmartLED™ Filter

For use with SmartLED™ MRI Luminaires and Driver Modules

RFI-4100D

DC MEDICAL RFI (4 CHANNEL) FILTER

Specifications

“Smart” Filters

- Allows lighting power to be delivered into the MRI suite.
- Removes RFI/EMI from electrical circuits entering the MRI suite.
- Fewer filters required. Each RFI-4100D filters four channels (circuits).

“Smart” Operation

- 60 volt DC maximum.
- 3 amp maximum current.
- Indoor use, -10°C to 60°C (-14°F to 140°F).
- Insertion loss: 100dB min (10kHz-1.0 GHz).

“Smart” Size

- At only 6.8" x 8.70", the small size of filter allows placement virtually anywhere through the MRI shield.

“Smart” Installation

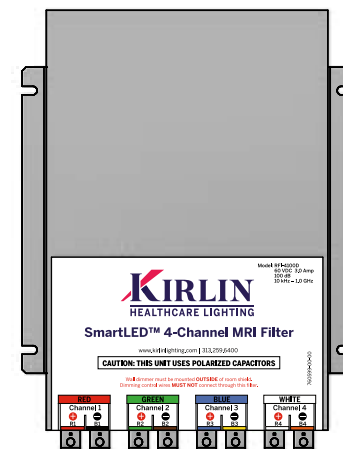
- Each output circuit is clearly labeled and prewired through a standard 1/2" threaded hub.
- Input terminal allows for quick connection.

“Smart” Construction

- Completely enclosed nickel plated steel with (8) #18 leads, each 18" long.

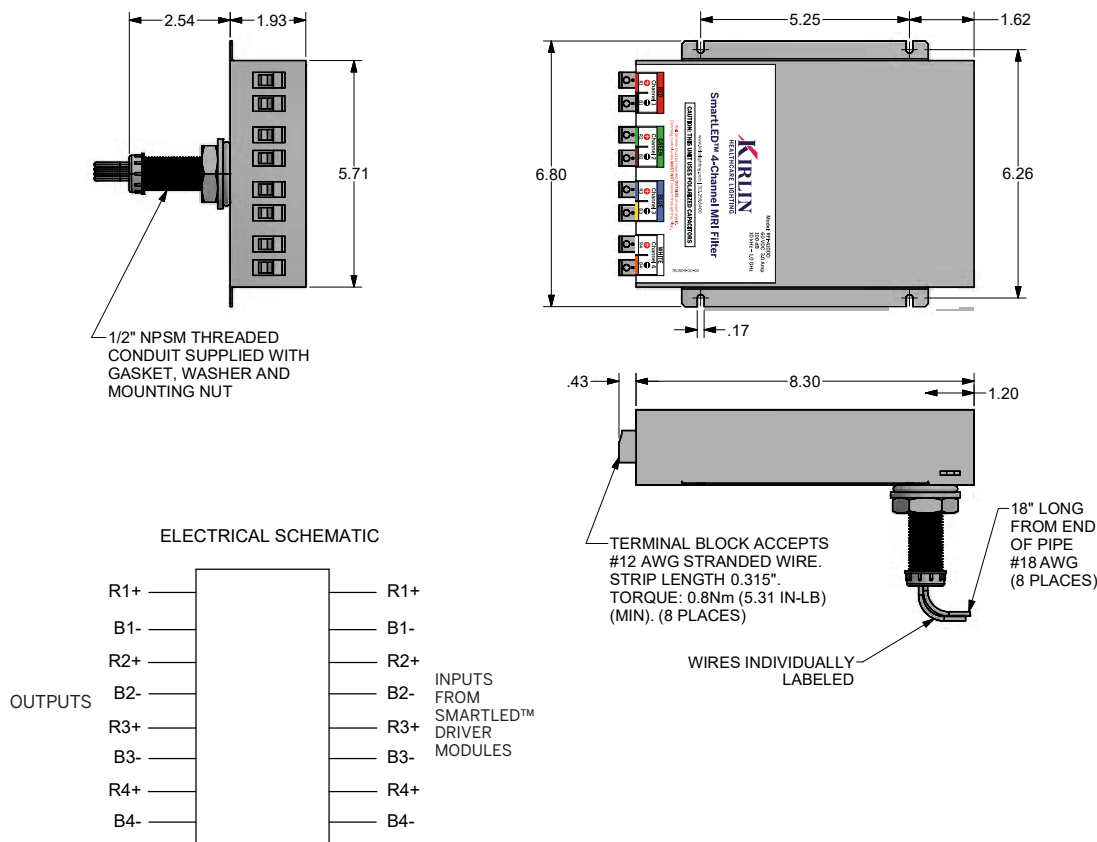
FIVE YEAR Limited Warranty

- Complete.

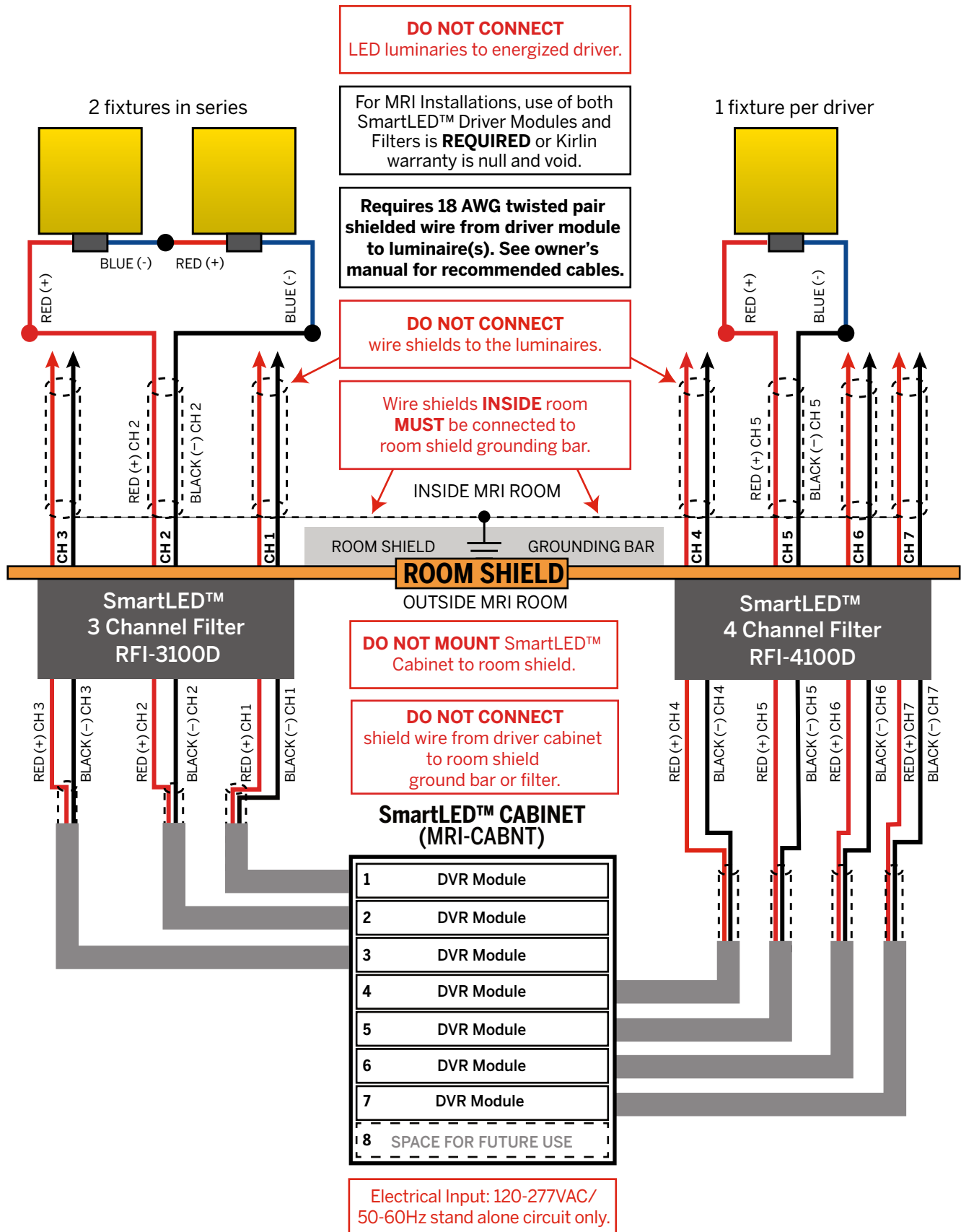


For MRI Installations, use of both SmartLED™ Driver Modules and Filters is REQUIRED or Kirlin warranty is null and void.

Dimensions (Inches)



Wiring Example: Downlights, Panels, Etc.



Wiring Example: Linear Slot, Cove, Undercabinet

One **6FT** section of fixture
(2 foot + 4 foot) wired in parallel on
one circuit with **DVR-1050A**

One **8FT** section of fixture
(4 foot + 4 foot) wired in parallel on
one circuit with **DVR-1490B**

DO NOT CONNECT
LED luminaries to energized driver.

For MRI Installations, use of both
SmartLED™ Driver Modules and
Filters is **REQUIRED** or Kirlin
warranty is null and void.

One **4FT** section of fixture
(or two 2FT sections) on one
circuit with **DVR-0700B**

One **2FT** section of fixture
on one circuit with **DVR-0350B**

Requires 18 AWG twisted pair
shielded wire from driver module
to luminaire(s). See owner's
manual for recommended cables.

DO NOT CONNECT
wire shields to the luminaires.

Wire shields **INSIDE** room
MUST be connected to
room shield grounding bar.

INSIDE MRI ROOM

ROOM SHIELD GROUNDING BAR

SmartLED™
3 Channel Filter
RFI-3100D

ROOM SHIELD
OUTSIDE MRI ROOM

***DO NOT MOUNT** SmartLED™
Cabinet to room shield.

DO NOT CONNECT
wire shields **OUTSIDE** room to
room shield grounding bar.

SmartLED™ CABINET
(MRI-CABNT)

1	DVR-1490B
2	DVR-1050A
3	DVR Module
4	DVR Module
5	DVR-0700B
6	DVR-0350B
7	DVR Module
8	SPACE FOR FUTURE USE

Electrical Input: 120-277VAC/
50-60Hz stand alone circuit only.

SmartLED™
4 Channel Filter
RFI-4100D