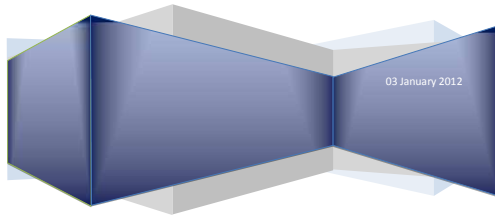




Product Specifications

**MaxLumen MRI LED Diffused
Lighting**

Model NEA-MXLumen14-X



Product Description

1. Standard Applications

The Nova Max Lumen LED 1x4 light fixture was developed specifically for use inside MRI imaging suites to provide entire room illumination while emitting no electrical magnetic interference and shielded to prevent distortion from the high frequency noise emitted from the MRI machine. The LED system provides maintenance free operation with a rated LED life of 10 years. The Max Lumen LED 1x4 is fully dimmable and provides a smooth linear dimming when used in conjunction with the Nova Dimming controls.



Figure 1 Nova Max Lumen LED 1x4 fixture

2. System Compatibility

The Nova Max Lumen LED 1x4 light fixtures are designed, shielded, and tested specific for MRI applications including MRI installations up to 3T.

3. Features/ Benefits

Features

- ETL, cETL CE listed, tested to UL standards to conform to NEC.
- Labeled to conform with NFPA70, NFPA 70.
- MRI tested
- Multiple configurations to fit the budget and architecture of the room
- Factory wired and tested.
- Shielded Electronics
- Non Ferrous Construction- Constructed with light weight aluminum extrusions and commercial grade stainless steel hardware
- Photography grade acrylic diffuser
- White Powder Coated Finish
- Remote Modular Power Supply
 - Smooth Linear Dimming Control
- High Efficient LED technology 91 lm/W
- Multiple color temperatures available from warm, natural and cool white
- LM-79 ICs tested
- RoHS certified
- Low Watt LED array dissipates heat without the need for heavy heat sinks
- Maintenance free LEDs provide a 10 year illumination life span
- No UV or IR Radiation
- 4 corner earthquake bracing

Benefits

- Designed, tested, and installed on several projects world wide
- Manufactured using the highest quality components for high reliability and long life
- Available to ship in 3 weeks
- Thin, Light Weight, Durable Panels
- Even and diffused illumination
- Simplified Wiring
- 500% reduction in energy consumption as compared to MRI DC Lighting
- Cool to the touch, reduces heating load
- Reduces Building Carbon Footprint
- No Bulbs to replace
- Save on initial cost- The Nova MaxLumen LED system provides substantially more lumens per fixture than comparable products, requiring fewer fixtures per room.
- The MaxLumen LEDs do not require a large, expensive DC power supply that would be needed on an incandescent installation.
- Save On Maintenance Costs- MRI lighting with traditional incandescent DC power require lamp maintenance at 1/3 the rated life of the lamp- requiring a maintenance technician to enter the room with the proper non ferrous tools every 4 months and change out the lamps.
- Reduce Insurance Liability- the risk of injury to a maintenance technician changing lamps is completely eliminated. The room will always be properly lit to the desired foot candle which will reduce the risks to patients and staff associated with a poorly lit procedure room.

4. Specifications

Model	McLumen14- X (3 rd generation)
Application	MRI LED Light Fixture
Input Voltage	24VDC (See Power Supply Specifications)
Current	1400mA
Power Classification	Class 2 power limited circuit
Power Consumption	42W ± 2W
Power Factor	>0.95
LED Count	729
Luminous Flux	3850± 50 lm
Luminous Efficacy	91lm/W
Color Temperature	Warm White: 2800-3200 K Part Number McLumen22-W
	Natural White 4250-4750 K Part Number McLumen22-N
	Cool White: 5500-6500 K Part Number McLumen22-C
CRI	>75
Beam Angle	150°
Lighting Source	LED Array
Approvals	ETL, cETL, CE, RoHS, IES LM 79, California title 24

5. Weight and Dimensions

Mounting	Surface or hard lid or suspended ceiling grid installation
Dimensions	11.74" x 47.74"
Depth	1.57"
Weight	9 lbs
Enclosure	Aluminium Extrusion
Finish	White housing with brushed aluminium trim
Lens Type	1/8" Frosted Acrylic diffuser
Environment	Indoor use only
Operating Temperature	-4~104°F (-20~40°C)

6. IESNA LM 79 Test Results

IES file available for download.

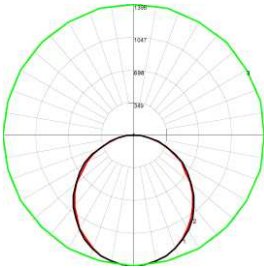


Figure 2: Polar Graph

Maximum Candela = 1395.85 Located at Horizon Angle =0, Vertical Angle = 0
#1 - Vertical Plane Through Horizontal Angles (0-180) Red
#2 Vertical Plane Through Horizontal Angles (90-270) Black
#3 Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) Green

Zonal Lumen Summary				Luminance Data (cd/sq.m)			
Zone	Lumens	% Lamp	% Fixture	Angle	Average 0-deg	Average 45-deg	Average 90-deg
0-30	1071.91	27.4	27.4	45	4324	4381	4428
0-40	1744.93	44.6	44.6	55	4070	4155	4241
0-60	3055.28	78.1	78.1	65	3838	3922	3982
0-90	3894.93	99.6	99.6	75	3453	3527	3629
90-120	7.34	.2	.2	85	2662	2704	2808
90-130	9.77	.2	.2				
90-150	113.32	.3	.3				
90-180	16.68	.4	.4				
0-180	3911.61	100	100				
Total Luminaire Efficiency = 100%							

Candela Tabulation					
	0	30	45	75	90
0	1395.85	1395.85	1395.85	1395.85	1395.85
5	1388.55	1388.16	1388.95	1388.87	1389.03
15	1329.66	1330.76	1332.05	1333.99	1334.62
25	1218.87	1221.11	1224.97	1230.33	1230.25
35	1064.74	1071.27	1075.81	1084	1085.11
45	885.38	891.06	896.93	905.56	906.67
55	675.99	683.76	690.09	702.6	704.43
65	469.64	474.77	479.93	488.21	487.31
75	258.77	261.49	264.3	269.85	271.95
85	67.19	67.37	68.23	70.48	70.87
90	7.97	8.43	8.44	8.17	6.09

7. Additional requirements

Power Supply

The LED power supply is designed to meet the hospital grade lighting power requirements of RF-shielded MRI suites. The voltage regulation and performance characteristics of the DC Lighting Control Unit offer a significant advantage over competing products.

Model	NEA480PS-DM or NEA860PS-DM
Application	dimmable power supply for LED Light Fixture
Power Output	480/960W
Voltage	24VDC
Current	20A/40A
Dimming	Multi Functional Dimming Board using 0-10V Dimming
Dimensions	20" Hx 16" W x 6" D

Model	NEA480PS or NEA860PS
Application	Constant ON/OFF Power Supply for LED Light Fixture
Power Output	480/960W
Voltage	24VDC
Current	20A/40A
Dimensions	20" Hx 16" W x 6" D



Figure 4: MRI LED Power Supply

Class 2 Power Distribution Panel

Model	NEAS-PD8UL, NEAS-PD16UL
Application	Class 2 to Class 2 Power Distribution Panel
Incoming Voltage	24VDC
Incoming Current	10A/ 20A
Lighting Load	8/16 Circuit, Class 2 Power Limited 3.5A
Dimensions	10" Hx 6" W x 4" D



Figure 5: MRI LED Class 2 Power Distribution

Dimming Controls

The LED Dimming switch is proprietary to the power supply, and it is not recommended to use dimming controls from other manufacturers

Model	LED-DSW
Application	0-10V Touchless Dimmer Switch for LED lighting



Figure 6: MRI LED Dimming Control

RF Filter

The RF filter is typically provided and installed by the shielding contractor. There are no special requirements for this item, a typical off the shelf 30A filter will meet the needs of the LED lighting circuit.

Model	RF Filter supplied by shielding contractor
Description	Typical 30A MRI filter, no special requirements
Quantity	Minimum 1
Suggested Manufacturer	Filcoil or equal
Suggested Part Number	FC-3147 or equal

8. Example Projects



29ft L x 17ft W MRI room

1.5T magnet

7 LED 1x4 fixtures



26ft L x 16ft W MRI room

1.5T magnet

6 LED 1x4 fixtures

4 LED 1x4 sky ceiling mural



26ft L x 19ft W MRI room
3T magnet
8 LED 1x4 fixtures
6 LED 1x4 Sky Mural



24ft L x 15ft W MRI room
3T magnet
6 LED 1x4 fixtures

9. Product Service and Technical Assistance

Nova Automation, LLC
2722 N. Avondale Blvd
Milwaukee WI 53210
PH# 262-309-2950
Website: www.NovaAutomation.Net

10. Warranty

This limited warranty set forth below is given by Nova Automation ("Seller") with respect to the electrical equipment ("Product") packaged with this limited warranty. The Product, when delivered to you in new condition in its original packaging, is warranted against defects in materials or workmanship as follows: For a period of three (3) years from the date of original purchase, defective parts or a defective Product returned to a Seller, or its authorized service providers, as applicable, and proven to be defective upon inspection, will be repaired, or exchanged for a new Product, as determined by the Seller, or the authorized service provider.

This limited warranty covers all defects encountered in normal use of the Product, and does not apply in the following cases: Loss of or damage to the Product due to abuse, mishandling, alteration, accident, electrical current fluctuations, failure to follow operating, maintenance or environmental instructions prescribed by Seller, failure to follow Sellers installation instructions, or service performed by someone other than Seller or its authorized service provider.

Nova assumes no responsibility for labor or freight costs incurred in connection with the installation, removal, or replacement of products determined to be defective or any consequential or incidental damages arising from the use of the product. Nova Automations entire liability on any claim of loss or damage resulting from a defective product is limited to the replacement of the product.

WARRANTY IS VOID IF PRODUCT IS NOT USED FOR THE PURPOSE FOR WHICH IT WAS MANUFACTURED.