

APPLICATION NOTES:

Dominant SPNova Compatible Secondary Lenses & Reflector

Introduction:

Secondary lenses and reflector cup are used to modify the output beam of the LED so that the radiation pattern will efficiently meet the desired photometric specification.

Majority of the secondary lenses manufacturers will specify : light distribution angle, light extraction efficiency, lenses material type and lenses attachment method on their datasheet.

While reflector cup manufacturers will specify : cup material, coating, reflector field projection, illumination pattern and light extraction efficiency on their datasheet.



SPNova Package Dimension

Figure 1 shows the package dimension of Dominant SPNova. There are several major LED manufacturers produce their LED packages with similar footprint. Thus, there is a wide range of secondary lenses choice available for Dominant customer that is using SPNova.

Secondary lenses holder with the following criteria would fit well with SPNova package and with good optical coupling efficiency :

- (i) Bottom opening of 7mm X 6mm and
- (ii)The height from the bottom of the lenses to the bottom plane of the holder of 1.5mm – 2.5mm

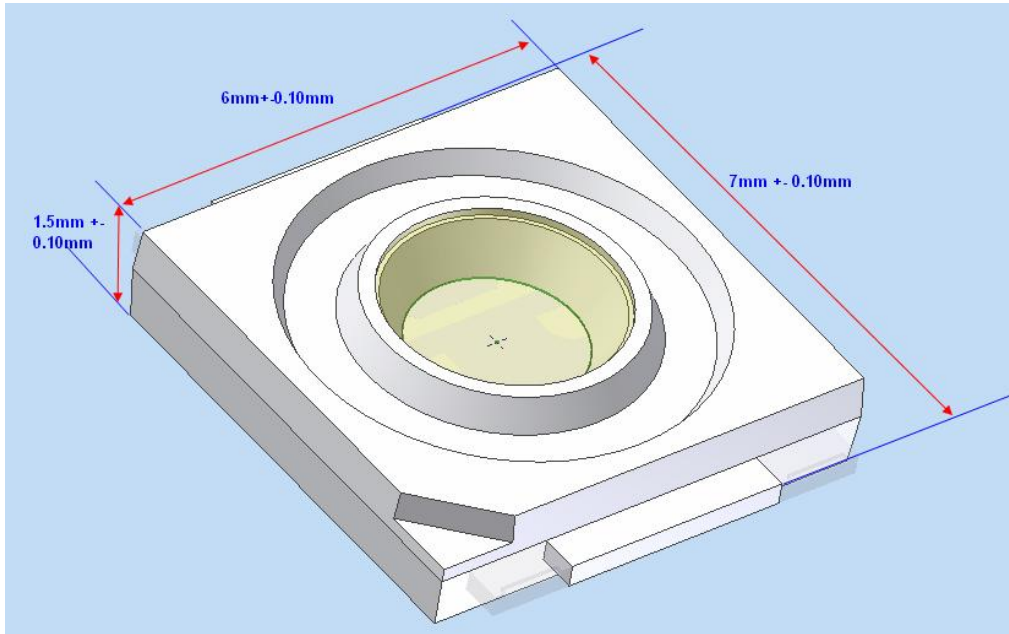


Figure 1: Dominant SPNova Package Dimension

SPNova Compatible Secondary Lenses

Summarized below is a list of 4 key secondary lenses manufacturers that Dominant has confirmed compatible to SPNova. There are many more lenses that are compatible to SPNova available in the market. Customer is recommended to assess the suitability of these secondary lenses to their application prior mass production.

1. Gaggione Lenses Compatible To Dominant SPNova

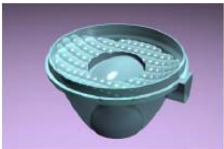
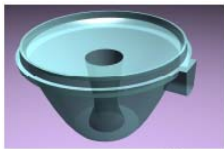
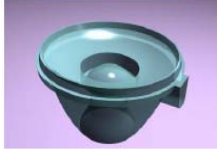
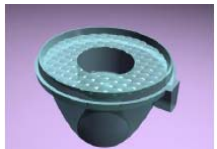
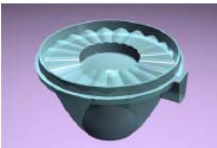
Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle On NPW-TSD (Degree)	Description	Holder Model
	Gaggione	LL9,16	Wide Angle	18 X 32	16 X 29	Wide Angle Lense For SPNova White And Mono Color SPNova	Gaggione Holder With Height, X =10.35mm
	Gaggione	LLRGB	Diffused	N/A	26	Ideal For SPNova White LED	Gaggione Holder With Height, X =10.35mm

Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle On NPW-TSD (Degree)	Description	Holder Model
	Gaggione	LL7	Spot	14	13	Spot Lense For Mono Color SPNova	Gaggione Holder With Height, X =10.35mm
	Gaggione	LL10	Spot	20	18	Spot Lense For Mono Color SPNova	Gaggione Holder With Height, X =10.35mm
	Gaggione	LL17	Flood	34	35	Flood Lense For Mono Color SPNova	Gaggione Holder With Height, X =10.35mm


Note: The Gaggione holder is semi transparent by design:



2. Lumilens Lenses Compatible To Dominant SPNova

Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle (Degree)	Description	Holder Model
	Lumilens	WS2-20F	Flood	30	30	Ideal For SPNova White LED	Lense With Holder Attached
	Lumilens	WS2-19S	Spot	15	17	Spot Lense For Mono Color SPNova LED With Diameter =19mm	Lense With Holder Attached
	Lumilens	WS2-19W	Wide Angle	15 X 30	13 X 30	Wide Angle Lense For Mono Color SPNova	Lense With Holder Attached
	Lumilens	WS1-120F-C	Flood	30	24	Use To Change White LED Light To Warm White	Lense With Holder Attached
	Lumilens	WS1-120S-C	Spot	15	24	Use To Change White LED Light To Warm White	Lense With Holder Attached

3. GEO Lenses Compatible To Dominant SPNova

Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle On NPW-TSD (Degree)	Description	Holder Model
	GEO	GS-7120A	Flood	30	23	Ideal For SPNova White LED	Holder With Bottom Opening 6mm x 7mm & height <2.5mm

4. Carclo Lenses Compatible To Dominant SPNova












Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle (Degree)	Description	Holder Model
	Carclo	10193	Plain Narrow 20mm	10	15	Use for spot light emission	10148/10149
	Carclo	10195	Medium Frosted 20mm	19	23	Narrow angle lenses use to produce homogenous light pattern	10148/10149
	Carclo	10196	Wide Frosted 20mm	32	40	Wide angle lenses use to homogenous light pattern	10148/10149
	Carclo	10208	Ripple Medium 20mm	14	17	Narrow angle lenses use to produce homogenous round light pattern	10148/10149
	Carclo	10209	Ripple Wide 20mm	19	31	Wide angle lenses use to produce homogenous round light pattern	10148/10149
	Carclo	10197R2	Elliptical 20mm	39 X 8	42 X 14	Use for narrow elliptical light emission pattern	10148/10149
	Carclo	10198	Elliptical Orthogonal 20mm	8 X 39	14 X 43	Use for wide elliptical light emission pattern	10148/10149
	Carclo	10048R2	Plain Tight 26.5mm	6	17	Use for spot light emission	10086/10087

Photo	Manufacturer	Model No	Lense Type	Rated Viewing Angle (Degree)	Dominant Measured Viewing Angle (Degree)	Description	Holder Model
	Carclo	10124	Frosted Narrow 26.5mm	8	17	Narrow angle lenses use to produce homogenous light pattern	10086/10087
	Carclo	10108	Frosted Medium 26.5mm	19	22	Wide angle lenses use to produce homogenous light pattern	10086/10087
	Carclo	10049R2	Elliptical 26.5mm	46 X 8	42 X 15	Use for elliptical light emission	10086/10087

Carclo Lenses Holder Which Compatible To Dominant SPNova

Photo	Manufacturer	Model No	Colour	Diameter (mm)
	Carclo	10148	Black	20.0
	Carclo	10149	Clear	20.0
	Carclo	10086	Black	26.5
	Carclo	10087	White	26.5

The website for these 4 companies are stated as below :

Company

Gaggione

Lumilens

Genius Electronic Optical

Carclo Optics

Website

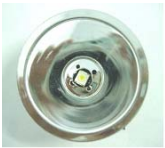
www.gaggione.com

www.lumilens.com.cn

www.gseo.com

www.carclo-optics.com

Reflector Cup Specifications:

Photo	Manufacturer	Model No	Reflector Type	Dimension (Diameter x Height)	Dominant Measured Viewing Angle (Degree)	Description	Cup Material
	Device-Giant	N/A	Parallel parabolic	2.158 inch X 0.924 inch	35	Ideal For far field projection & street light module	Aluminium with Silver coated to enhance reflectivity

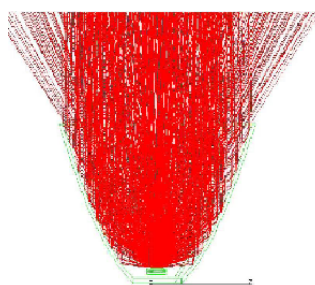
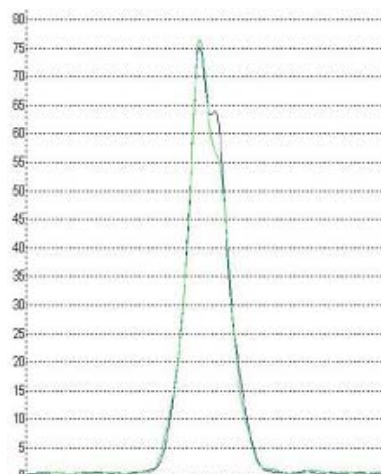


Figure 2: Parabolic far field projection with Dominant SPNova

By using Dominant SPNova 1 Watt white LED (NPW-TSD) to couple with reflector cup, we can achieve a uniform round illumination pattern of 70 centimeters diameter with >30 lux illuminance at 5 meter distance.



Supplier details for SPNova compatible reflector cup :

Company
 Device Giant

Website
www.device-giant.com.tw

Summary

Other than the 3 standard 15 Degree, 23 Degree and 35 Degree lenses that Dominant carries in its product portfolio and the reflector cups that Dominant suggests in its product portfolio, there are more choices of lenses and reflector cups that are compatible to Dominant SPNova package available in the market. Customer can freely choose compatible lenses and reflector cups supplier based on their specific geographical region, cost consideration and special application needs.